COMMONWEALTH of VIRGINIA
Board of Education Agenda

Date of Meeting: April 25, 2012 **Time:** 1:30 p.m.
Location: Jefferson Conference Room, 22nd Floor, James Monroe Building
101 North 14th Street, Richmond, Virginia

VIRGINIA BOARD OF EDUCATION
PLANNING SESSION AGENDA
Wednesday, April 25, 2012

1:30 p.m. – PLANNING SESSION CONVENES

INTRODUCTORY REMARKS
Mr. David Foster, President, Virginia Board of Education

OVERVIEW OF PRESENTATION TOPICS
Dr. Patricia Wright, Superintendent of Public Instruction
Virginia Department of Education

REPORTS AND PRESENTATIONS

A. SETTING GOALS AND MEASURING PROGRESS
Presenter: Mrs. Anne Wescott, Assistant Superintendent for Policy and Communications

B. HIGHLIGHTS OF PROGRESS IN MEETING BOARD OF EDUCATION OBJECTIVES
Presenter: Dr. Deborah Jonas, Executive Director for Research and Strategic Planning

C. REPORT ON PROGRESS TOWARDS CLOSING THE ACHIEVEMENT GAP
Presenter: Dr. Deborah Jonas, Executive Director for Research and Strategic Planning

D. REPORT ON THE PROFILE OF VIRGINIA'S INSTRUCTIONAL SCHOOL PERSONNEL
Presenter: Mrs. Patty Pitts, Assistant Superintendent for Teacher Education and Licensure

E. BOARD DISCUSSION OF LONG TERM PRIORITIES

WRAP UP AND NEXT STEPS

ADJOURNMENT OF PLANNING SESSION

NOTE: The Board of Education will convene for the Business Session at 9 a.m., Thursday, April 26, 2012.

COMMONWEALTH of VIRGINIA
Board of Education Agenda

Date of Meeting: April 26, 2012 **Time:** 9:00 a.m.
Location: Jefferson Conference Room, 22nd Floor, James Monroe Building
101 North 14th Street, Richmond, Virginia

VIRGINIA BOARD OF EDUCATION
BUSINESS SESSION AGENDA
Thursday, April 26, 2012

9:00 a.m. FULL BOARD CONVENES

Moment of Silence

Pledge of Allegiance

Approval of Minutes of the March 22, 2012, Meeting of the Board

Public Comment

Consent Agenda

F. Final Review of Financial Report on Literary Fund

G. Final Review of Recommendations Concerning Literary Fund Applications Approved for Release of Funds or Placement on a Waiting List

ACTION/DISCUSSION: BOARD OF EDUCATION REGULATIONS

H. First Review of a Notice of Intended Regulatory Action (NOIRA) to Promulgate Regulations Revising the *Regulations Establishing the Standards for Accrediting Public Schools in Virginia* (8 VAC 20-131) to Include Standards for the Accreditation of Public Virtual Schools Operating Under the Authority of the Local School Boards

ACTION/DISCUSSION ITEMS

I. Final Review of a Request from Carroll County Public Schools for Approval of an Alternative Accreditation Plan for Carroll County Public School's Virginia Virtual Academy (VAVA)

J. Final Review of the Consensus Report from the Board of Education Charter School Committee on the Proposed Fairfax Leadership Academy Charter School Application

ACTION/DISCUSSION ITEMS (continued)

K. Final Review of a Proposal from Virginia Beach Public Schools to Establish a Governor's STEM Academy for Engineering, Marketing, and Information Technology Studies

L. First Review of a Proposal from Fairfax County Public Schools to Establish the New Commonwealth Governor's STEM Academy at Chantilly High School and Chantilly Academy

M. First Review of a Proposal from Roanoke County Public Schools to Establish the Governor's STEM Academy at the Burton Center for Arts and Technology

N. First Review of a Proposal from Chesapeake City Public Schools to Establish the Grassfield High School Governor's STEM Academy

O. First Review of Revisions of Industry, Professional, or Trade Association Certification Examinations and Occupational Competency Assessments to Meet the Requirements for the Board of Education's Career and Technical Education and Advanced Mathematics and Technology Seals and the Student-Selected Verified Credit

P. First Review of Timetable for the Review and Approval of the Revised *Computer Technology Standards of Learning*

Q. First Review of Recommended Cut Scores for Virginia Modified Achievement Standards Test (VMAST) for Grades 3-8 Mathematics and Algebra I

R. First Review of a Recommended Cut Score for the Numeracy Requirement of the Modified Standard Diploma on the Grade 8 *Standards of Learning Mathematics* Tests Based on the 2009 Mathematics Standards

DISCUSSION OF CURRENT ISSUES - by Board of Education Members and Superintendent of Public Instruction

EXECUTIVE SESSION

ADJOURNMENT OF BUSINESS SESSION

PUBLIC NOTICE

The Board of Education members will meet for dinner at 6:30 p.m. at La Grotta Restaurant on Wednesday, April 25, 2012. Items for the Board agenda may be discussed informally at that dinner. No votes will be taken, and it is open to the public. The Board president reserves the right to change the times listed on this agenda depending upon the time constraints during the meeting.

GUIDELINES FOR PUBLIC COMMENT

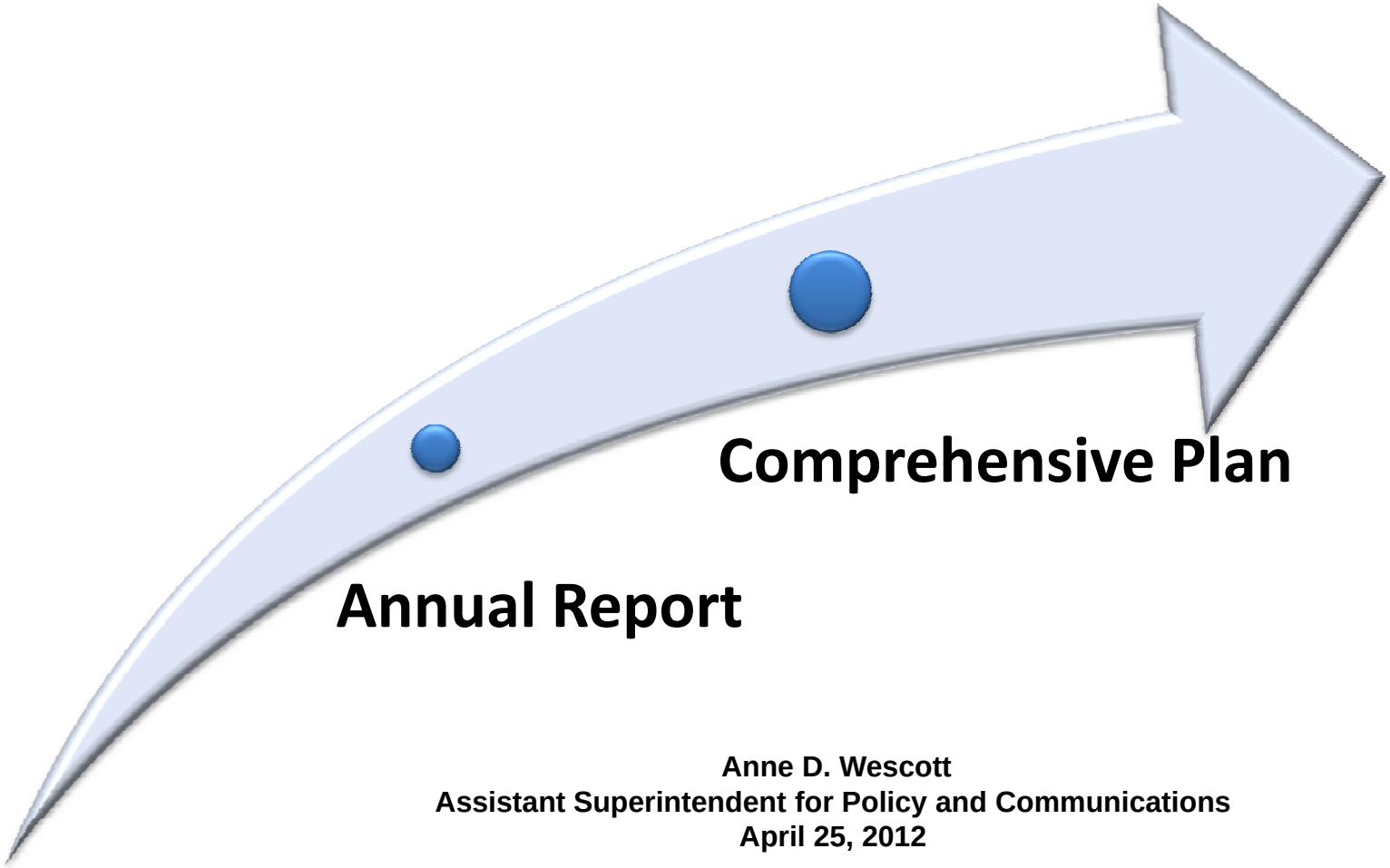
1. The Board of Education is pleased to receive public comment at each of its regular monthly meetings. In order to allow the Board sufficient time for its other business, the total time allotted to public comment will generally be limited to thirty (30) minutes. Individuals seeking to speak to the Board will be allotted three (3) minutes each.

2. Those wishing to speak to the Board should contact the Department of Education at (804) 225-2924. Normally, speakers will be scheduled in the order that their requests are received until the entire allotted time slot has been used. Where issues involving a variety of views are presented before the Board, the Board reserves the right to allocate the time available so as to ensure that the Board hears from different points of view on any particular issue.

3. Speakers are urged to contact the Department of Education in advance of the meeting. Because of time limitations, those persons who have not previously registered to speak prior to the day of the Board meeting cannot be assured that they will have an opportunity to appear before the Board.

4. In order to make the limited time available most effective, speakers are urged to provide multiple written copies of their comments or other material amplifying their views.

Virginia Board of Education: Setting Goals and Measuring Progress



Anne D. Wescott
Assistant Superintendent for Policy and Communications
April 25, 2012

Statutory Requirement for the Comprehensive Plan

§ 22.1-253.13:6. Standard 6. Planning and public involvement.

A. The Board of Education shall adopt a statewide comprehensive, unified, long-range plan based on data collection, analysis, and evaluation. Such plan shall be developed with statewide participation. The Board shall review the plan biennially and adopt any necessary revisions. . . .

This plan shall include the objectives of public education in Virginia, including strategies for improving student achievement then maintaining high levels of student achievement; an assessment of the extent to which these objectives are being achieved; a forecast of enrollment changes; and an assessment of the needs of public education in the Commonwealth.

Statutory Requirement for the Annual Report

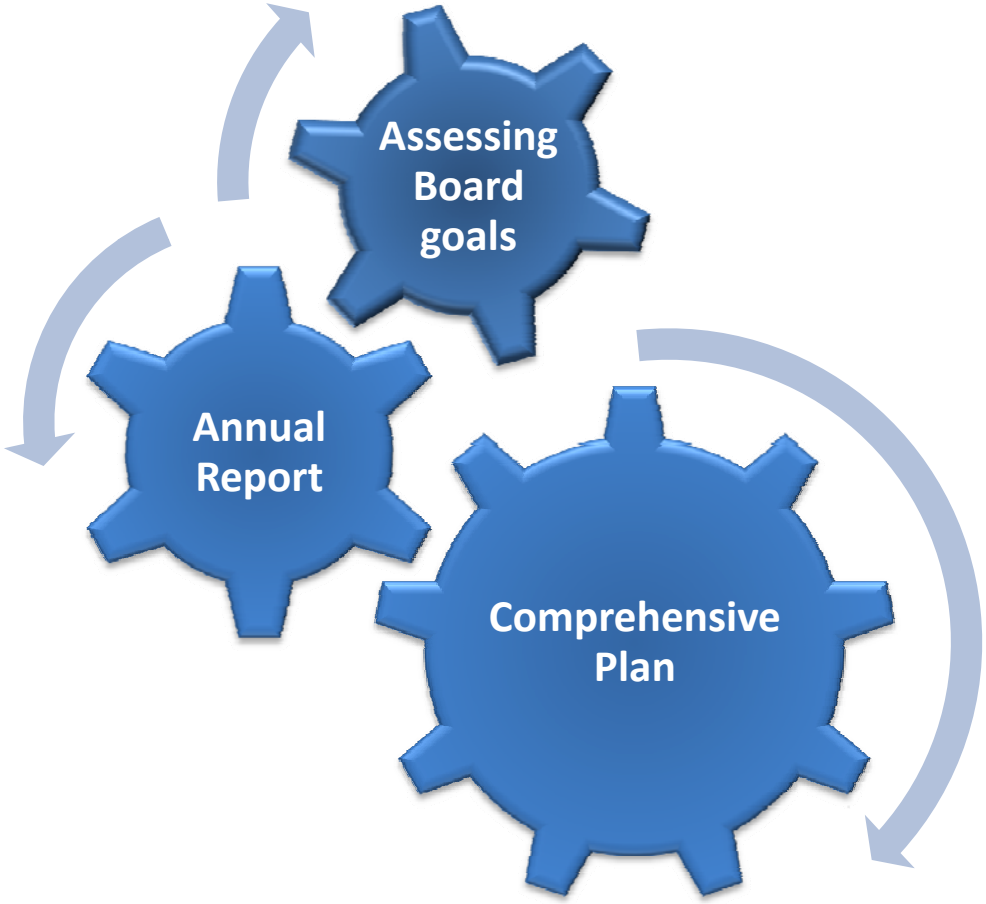
§ 22.1-253.13:6. Standard 6. Planning and public involvement.

In the annual report required by § 22.1-18, the Board shall include an analysis of the extent to which these Standards of Quality have been achieved and the objectives of the statewide comprehensive plan have been met. . . . .

§ 22.1-18. Report on education and standards of quality for school divisions; when submitted and effective.

By November 15 of each year, the Board of Education shall submit to the Governor and the General Assembly a report on the condition and needs of public education in the Commonwealth and shall identify any school divisions and the specific schools therein which have failed to establish and maintain schools meeting the existing prescribed standards of quality. . . .

Comprehensive Plan and Annual Report: Interrelated Documents for Defining Goals and Reporting Progress



Comprehensive Plan and Annual Report: A Cycle for Setting Goals and Reporting Progress

The Board's Goals:
How is Progress Measured?

- **The Board of Education's *Comprehensive Plan for 2011-2016* contains seven goals.**
- **Key indicators of progress apply to all seven of the goals.**
- **In addition, each goal statement specifies other performance measures to be used to gauge progress.**

Goal 1:
Expanded Opportunities to Learn

The Board of Education will continue to improve the standards for public schools in Virginia in order to expand learning opportunities needed for Virginia's public schools. Our schools will lead the nation in rigor and quality and our students will compete and excel in postsecondary education and/or in the global workplace.

Goal 2:
Accountability for Student Learning

The Board of Education will support accountability for all public schools by providing leadership and by establishing policies that help schools and school divisions increase the academic success of all students, especially those who are at-risk or in underperforming school systems. Using improved longitudinal data systems, the Board will monitor schools' progress in closing achievement gaps among groups of students.

Goal 2:
Accountability for Student Learning

Upcoming changes to the regulations governing accountability for student learning:

- **Accreditation of virtual schools (HB 1215)**
- **New diploma requirements (HB 1061/SB 489) – Emergency regulations immediately followed by permanent regulations**
- **One year delay in implementing the Academic and Career Plan (HB 96) – Exempt regulatory action (technical change)**
- **Comprehensive review of the Standards of Accreditation**

Goal 3:
Nurturing Young Learners

The Board of Education will work cooperatively with partners and will promote new and innovative partnerships to help ensure that all young children are ready to enter kindergarten with the skills they need for success.

Goal 4:
Strong Literacy and Mathematics Skills

The Board of Education will establish policies that support the attainment of literacy and mathematics skills for all students, pre-K through grade 12.

Goal 5:
Highly Qualified and Effective Teachers and Administrators

The Board of Education will establish policies and standards that improve the preparation, recruitment, and retention of Virginia's educational personnel, including meaningful and ongoing professional development, especially in teacher shortage areas and in hard-to-staff schools.

Goal 6:
Sound Policies for Student Success

The Board of Education will provide leadership to develop and implement the provisions of state and federal laws and regulations in ways that improve and expand opportunities for all of Virginia's schoolchildren to excel academically.

Goal 7:
Safe and Secure Schools

The Board of Education will provide leadership to create safe and secure school environments.

Next Steps:
Revisions to the Comprehensive Plan

- **Do the goals accurately reflect the Board's priorities?**
- **Are the current performance measures and related data analyses clear and on-target?**
- **Do the performance measures address the concerns and priorities of the Board?**
- **What needs to be added? deleted? clarified?**
- **Other suggestions, ideas, and comments?**

Highlights of Progress in Meeting Board of Education Objectives

Deborah L. Jonas, Ph.D.

Board of Education Planning Meeting

April 25, 2012

Overview

- Comprehensive plan includes metrics to assess the Board's progress towards meeting objectives and the state of public PK-12 education in Virginia.
- Metrics are reported each fall in the Board's annual report.
- The report includes qualitative and quantitative indicators of student and school outcomes.
- In 2011, the Board's report included a dashboard of key quantitative indicators of student progress.

2011 Dashboard From BOE Annual Report, page 9: http://www.doe.virginia.gov/boe/reports/annual_reports/2011.pdf.

A Report Card on the Board's Performance Measures

Performance Measures to Gauge Progress in Meeting Goals	Results	One Year Trend	3 Year Trend[3]
	Performance Improving ↑ Performance Declining ↓ Performance Maintained ↔ Data Not Available X		
Percent of third-grade students reading on grade level	83%	↔	↓ (-3%)
Percent of middle school students enrolled in Algebra I or higher	48.8%	↑ (3.9%)	↑ (9.4%)
Virginia On Time-Graduation Rate	86.6%	↑ (1.1%)	↑ (3.3%)
High school dropout rate	7.2%	↑ (-0.6%)[4]	↑ (-0.8%)
Students earning Advanced Studies or Standard Diplomas in at least four years[5]	81.6%	↑ (1.7%)	↑ (4.7%)
Percent of graduates earning advanced studies diplomas	47%	↑ (1.6%)	↑ (3.1%)
Percent of graduates who enroll in institutions of higher education (IHE) nationwide[6]	58%	↓ (-2%)	↓ (-4%)
Percent of students scoring advanced proficient on statewide assessments			
English (Reading and Writing)	36.2%	↓ (-0.2)	↑ (0.1%)
Mathematics	39.1%	↓ (-0.3)	↑ (1.3%)
History and Social Science	28.6%	NA[7]	NA
Science	28.5%	↓ (-0.2%)	↑ (0.9%)
Percent of schools rated fully accredited	96%	↓ (-2%)[8]	↓ (-2%)
Number and percent of schools and divisions that demonstrate relatively high growth in student achievement[9]	X	X	X
Number of schools earning recognition under the Virginia Index of Performance	728 schools	↑ (6 schools)	↓ (-256 schools)[10]
Number of schools that are chronically low performing by state and federal standards	7 schools	↑ (2 schools)	↑ (4 schools)
Number and percent of schools and divisions meeting or exceeding federal accountability measures[11]	38% schools	↓ (-22%)	↓ (-33%)
	3% divisions	↓ (-6%)	↓ (-43%)

NOTE: VDOE's data are dynamic. Some data have been updated since the November 2011 publication shown here.

Today's Highlights

- High school graduation rates
- Career and Technical Education (CTE) credentialing
- Postsecondary enrollment

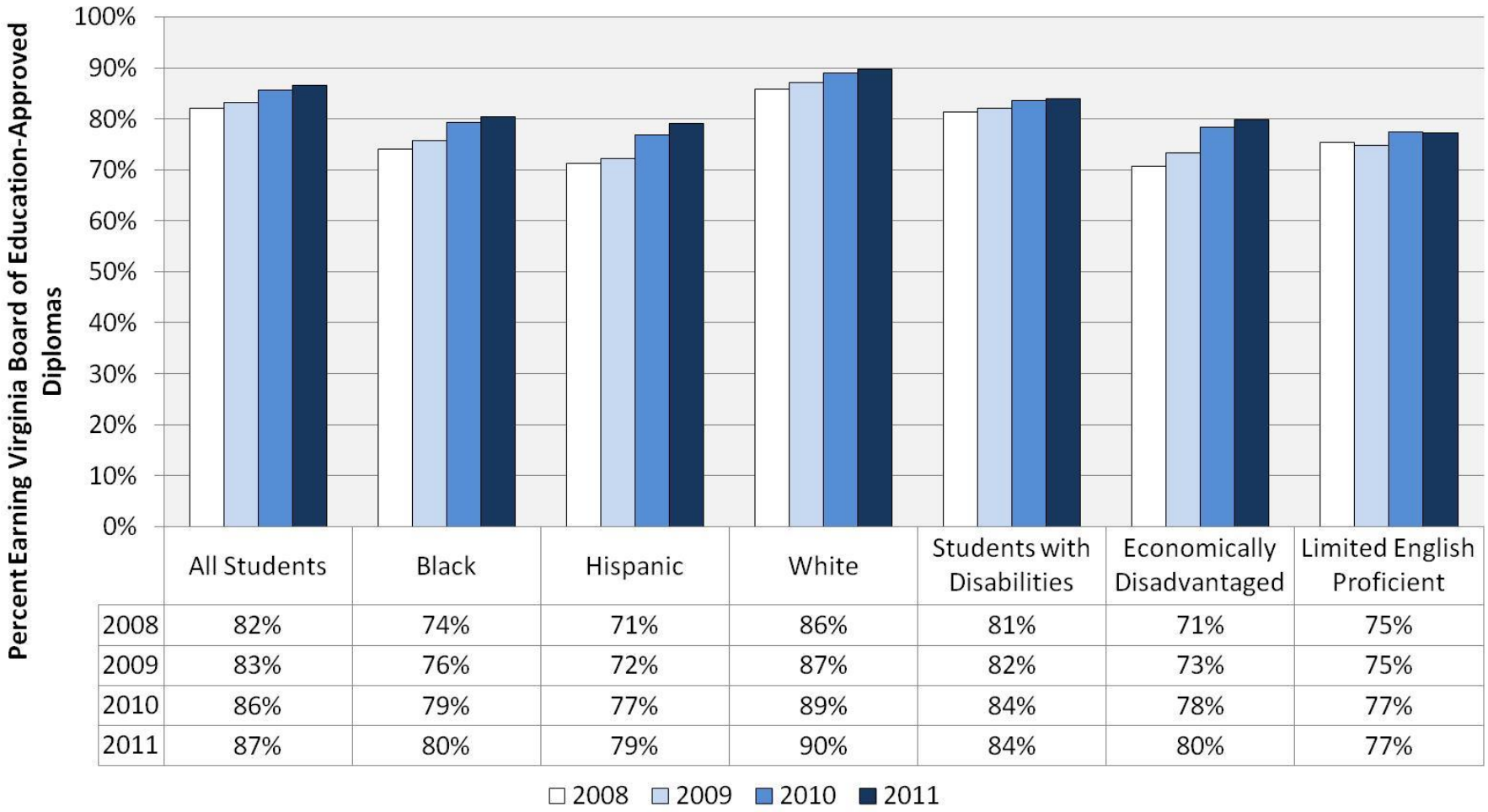
High School Graduation Rates

- Virginia has had two primary methods of calculating longitudinal high school graduation rates:
  - Virginia On-Time Graduation Rate, defined by the Board of Education.
  - Federal Graduation Indicator, defined by federal regulation.
- Both rates show an increase in the percentage of students graduating from high school on time.
  - Graduation rates have increased for all student subgroups currently included in federal accountability.
  - Larger increases are demonstrated with the federal graduation indicator.
- Giving students more time to graduate from high school has a substantial impact on graduation rates.

Virginia's On-Time Graduation Rate (OTGR)

- Recognizes all Board of Education-approved Diplomas.
- Includes adjustments for students who, under federal and state law, may take longer than four years to earn a diploma.
- Students with disabilities and English language learners who graduate in more than four years are considered "on-time" using the formula agreed upon under the National Governors Association compact and adopted by the Board in November 2006.
- OTGR cohort is used as the basis for Virginia's Graduation and Completion Index, an accountability measure for Virginia's high schools.

Virginia On-Time Graduation Rate, 2008-2011



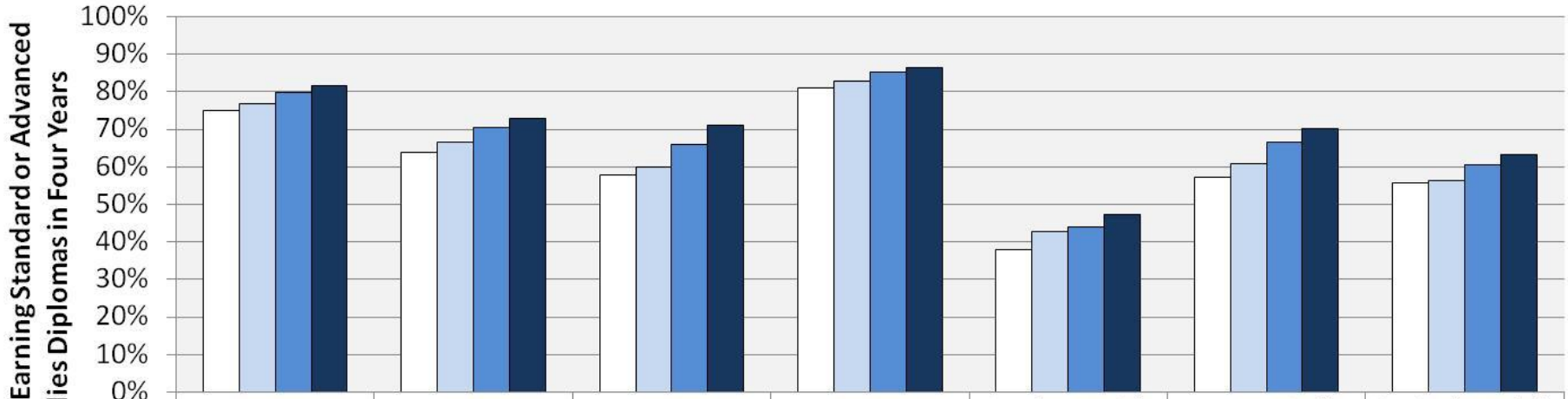
	All Students	Black	Hispanic	White	Students with Disabilities	Economically Disadvantaged	Limited English Proficient
2008	82%	74%	71%	86%	81%	71%	75%
2009	83%	76%	72%	87%	82%	73%	75%
2010	86%	79%	77%	89%	84%	78%	77%
2011	87%	80%	79%	90%	84%	80%	77%

Federal Graduation Indicator

- Used in federal accountability determinations as of fall 2010.
- Relies on a formula prescribed in federal regulations.
- Recognizes Standard and Advanced Studies* diplomas only.
- Does not permit adjustments for students who, under federal and state law, may take more than four years to graduate.

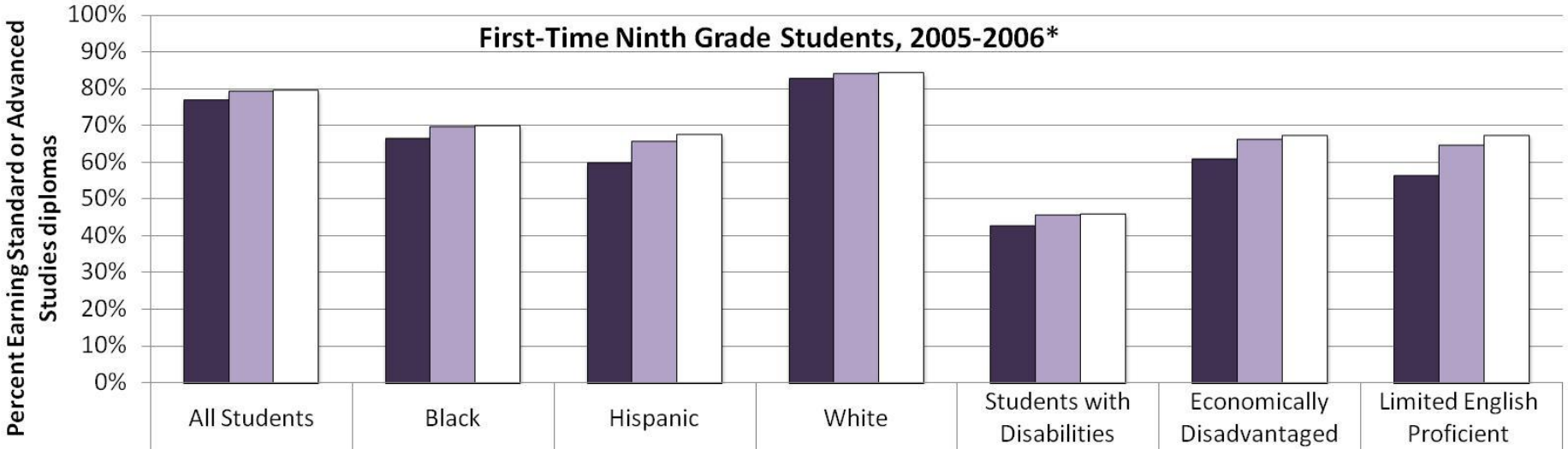
*Includes International Baccalaureate diplomas.

Federal Graduation Indicator



	All Students	Black	Hispanic	White	Students with Disabilities	Economically Disadvantaged	Limited English Proficient
2008	75%	64%	58%	81%	38%	57%	56%
2009	77%	67%	60%	83%	43%	61%	56%
2010	80%	71%	66%	85%	44%	66%	60%
2011	82%	73%	71%	86%	47%	70%	63%

Giving students more time increases high school graduation rates.



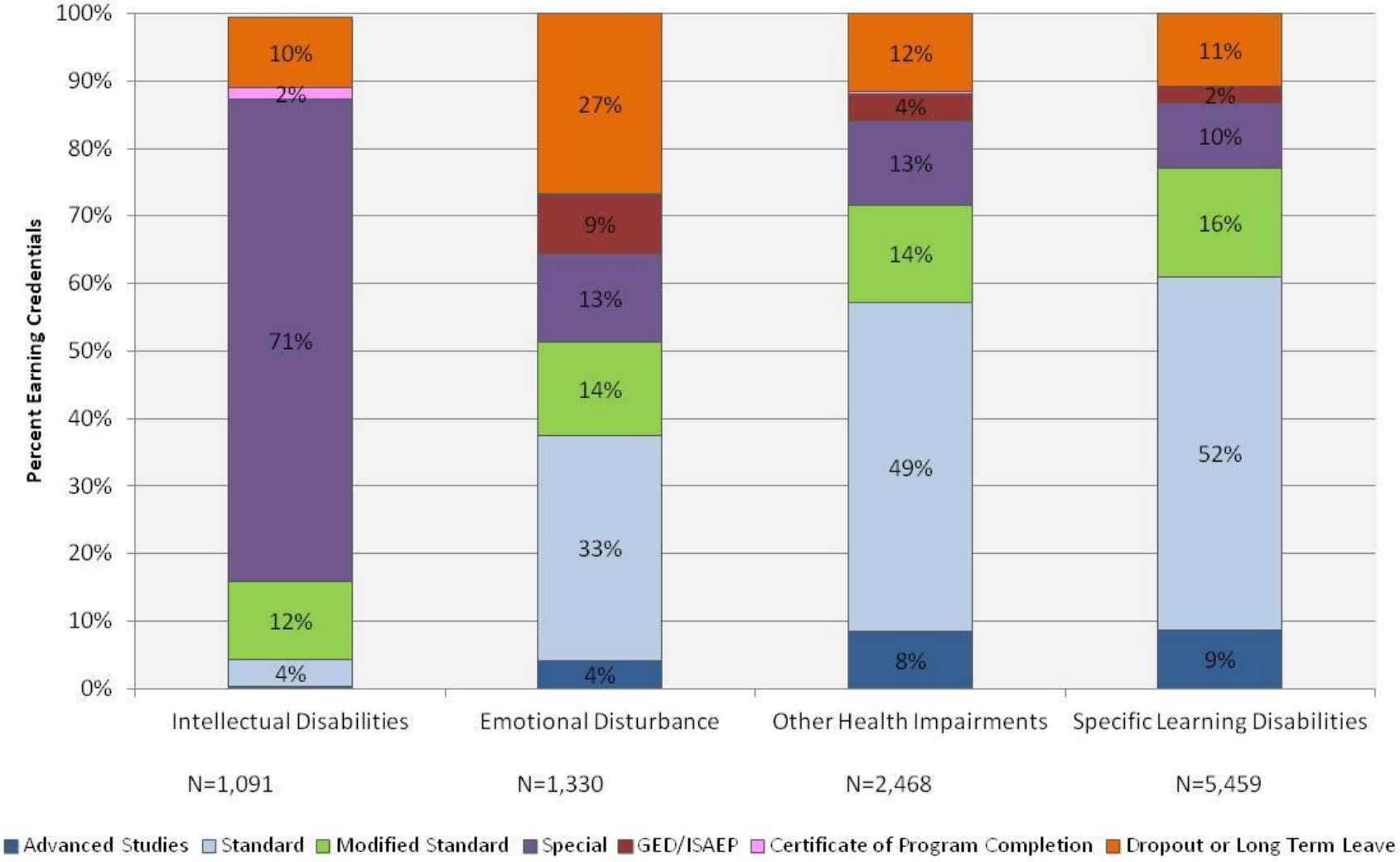
	All Students	Black	Hispanic	White	Students with Disabilities	Economically Disadvantaged	Limited English Proficient
Four year	77%	67%	60%	83%	43%	61%	56%
Five Year	79%	70%	66%	84%	46%	66%	65%
Six Year	80%	70%	68%	84%	46%	67%	67%

*Students who graduated in four years earned diplomas in 2008-2009.

See *Better Late Than Never* for research into long-term benefits of giving students more time to earn diplomas: http://www.centerforpubliceducation.org/Main-Menu/Staffingstudents/Better-late-than-never-At-a-glance/Better-Late-than-Never-Examining-late-high-school-graduates-.html.

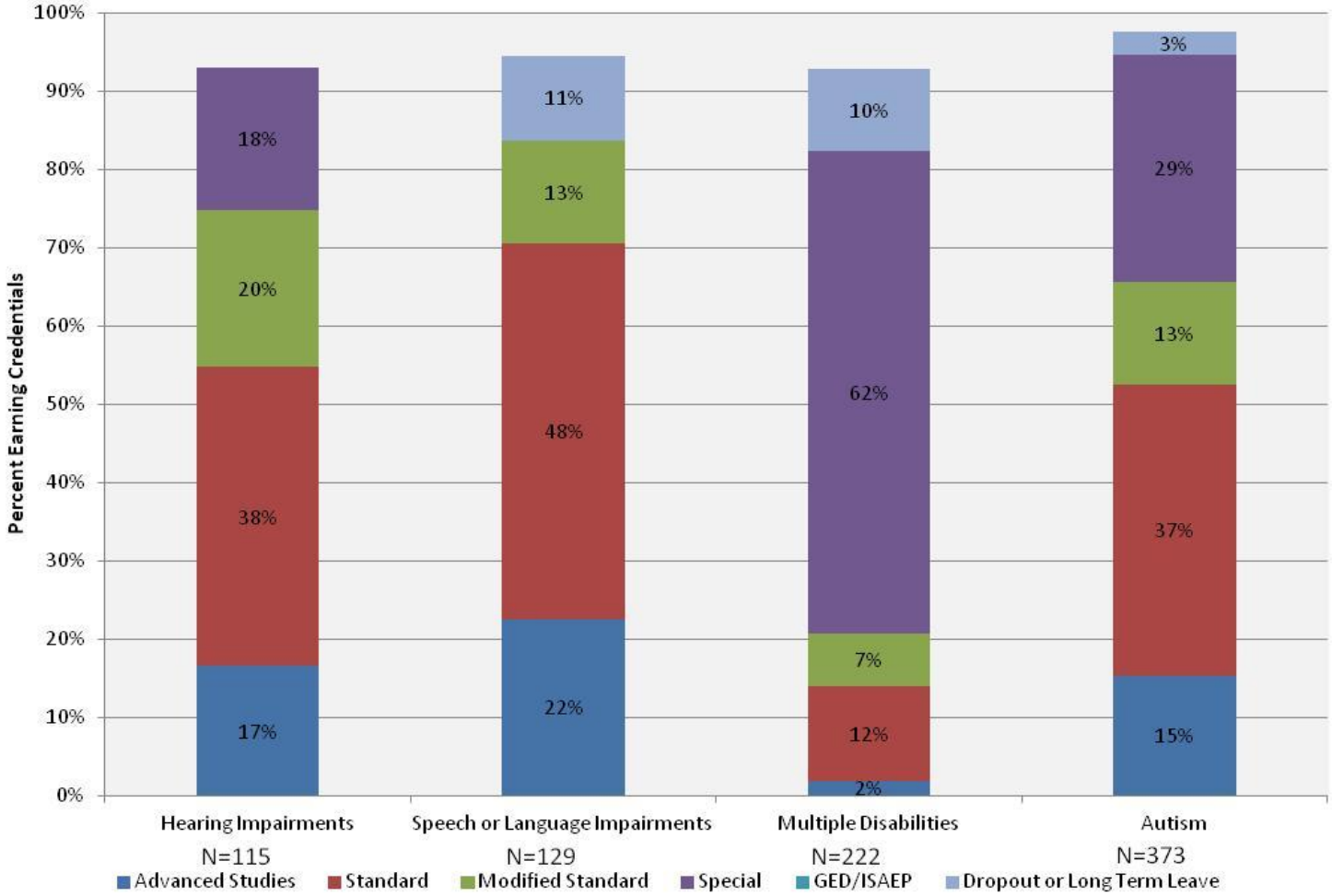
On-Time Graduation Rates for Students with Disabilities

2011 On-Time Graduation Rate Cohort



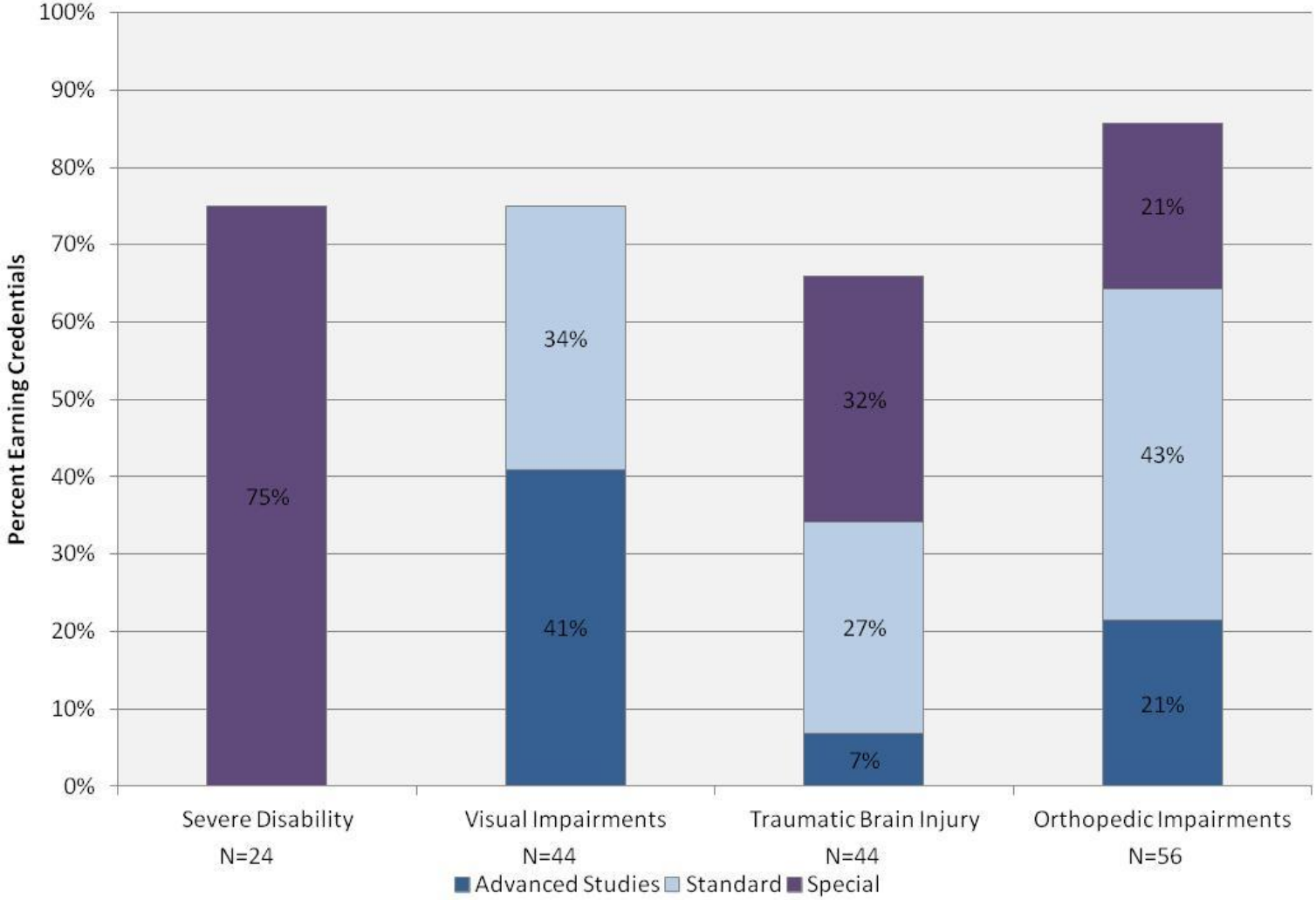
NOTE: Longitudinal student data based on Virginia On-Time Graduation Rate calculations. Some categories are suppressed to protect students' privacy.

2011 On-Time Graduation Rate Cohort (continued)



NOTE: Longitudinal student data based on Virginia On-Time Graduation Rate calculations. Some categories are suppressed to protect students' privacy.

2011 On-Time Graduation Rate Cohort (continued)



NOTE: Longitudinal student data based on Virginia On-Time Graduation Rate calculations. Some categories are suppressed to protect students' privacy.

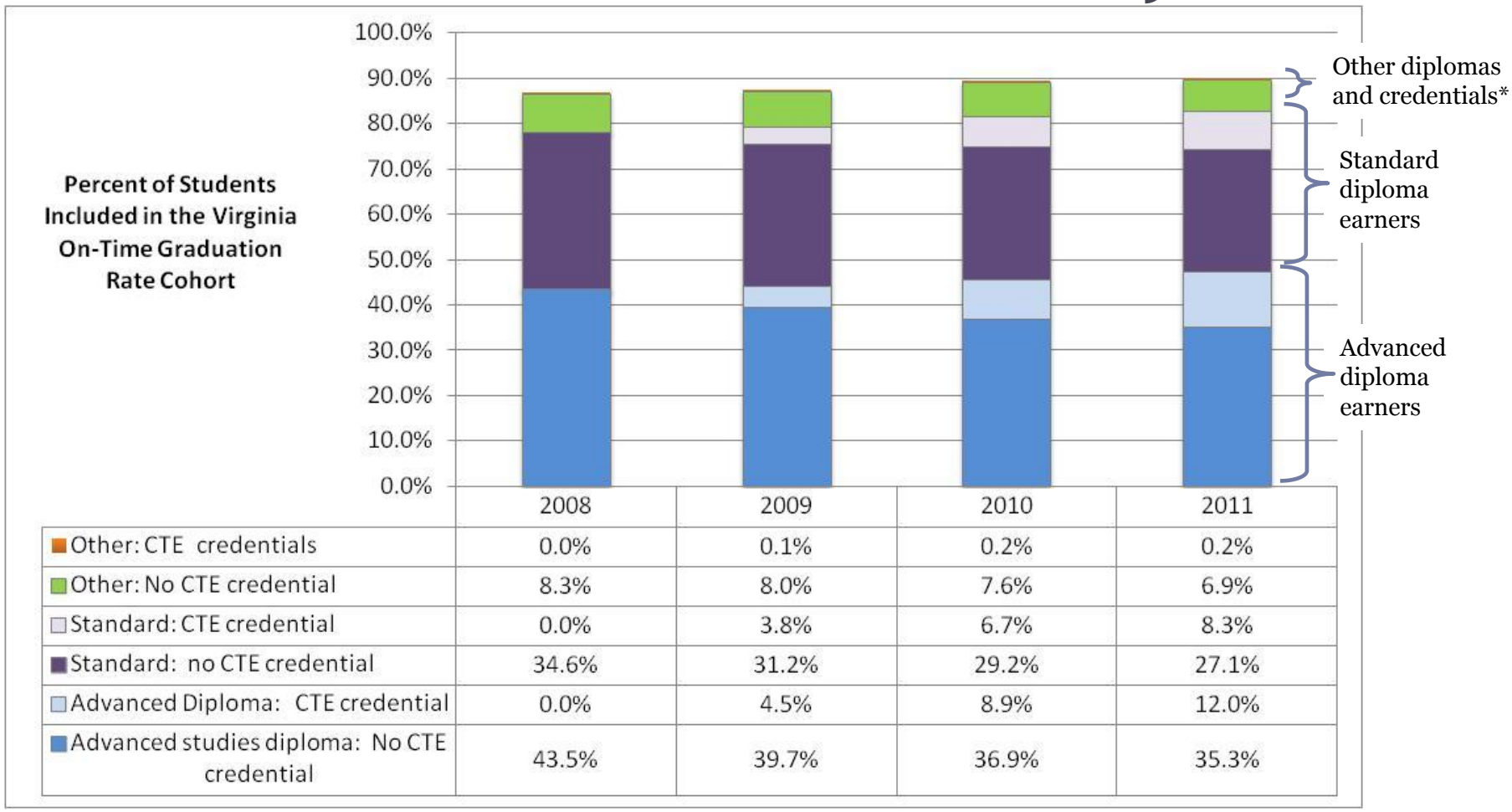
Career and Technical Education Credentialing in Virginia's High Schools

CTE credentialing in Virginia

- Students in Virginia may earn externally validated CTE credentials while in high school.
  - National Occupational Competency Testing Institute assessments
  - State license
  - Industry certification
  - Workplace Readiness Skills assessment
- Starting with ninth-grade students in 2013, students earning a Standard diploma will be required to earn one Board-approved CTE credential.**
- More students earn these credentials each year.

**In accordance with 2012 legislation, the Board shall make provision in its regulations for students with disabilities to earn a Standard diploma.

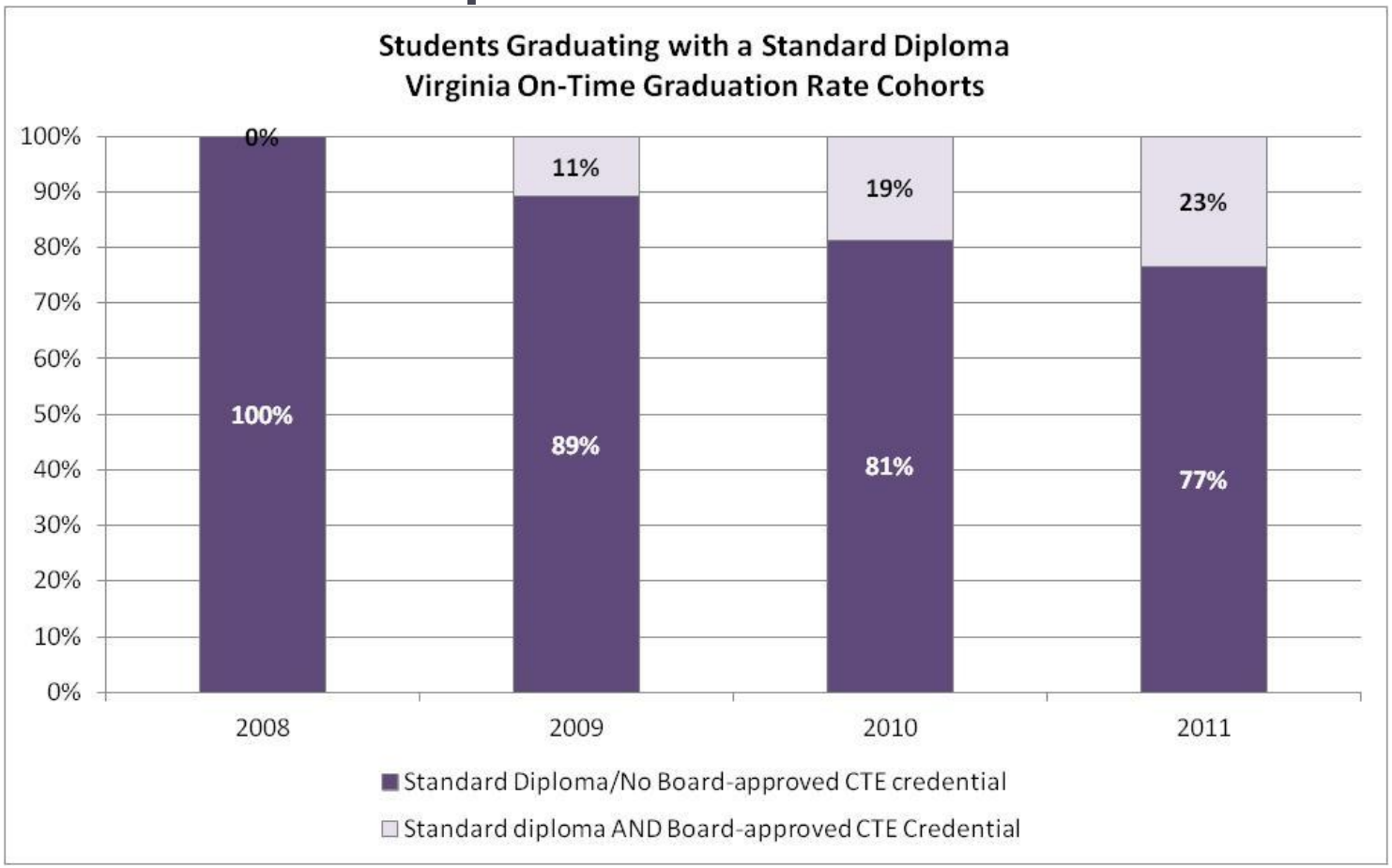
More students are earning externally validated CTE credentials each year.



	2008	2009	2010	2011
Other: CTE credentials	0.0%	0.1%	0.2%	0.2%
Other: No CTE credential	8.3%	8.0%	7.6%	6.9%
Standard: CTE credential	0.0%	3.8%	6.7%	8.3%
Standard: no CTE credential	34.6%	31.2%	29.2%	27.1%
Advanced Diploma: CTE credential	0.0%	4.5%	8.9%	12.0%
Advanced studies diploma: No CTE credential	43.5%	39.7%	36.9%	35.3%

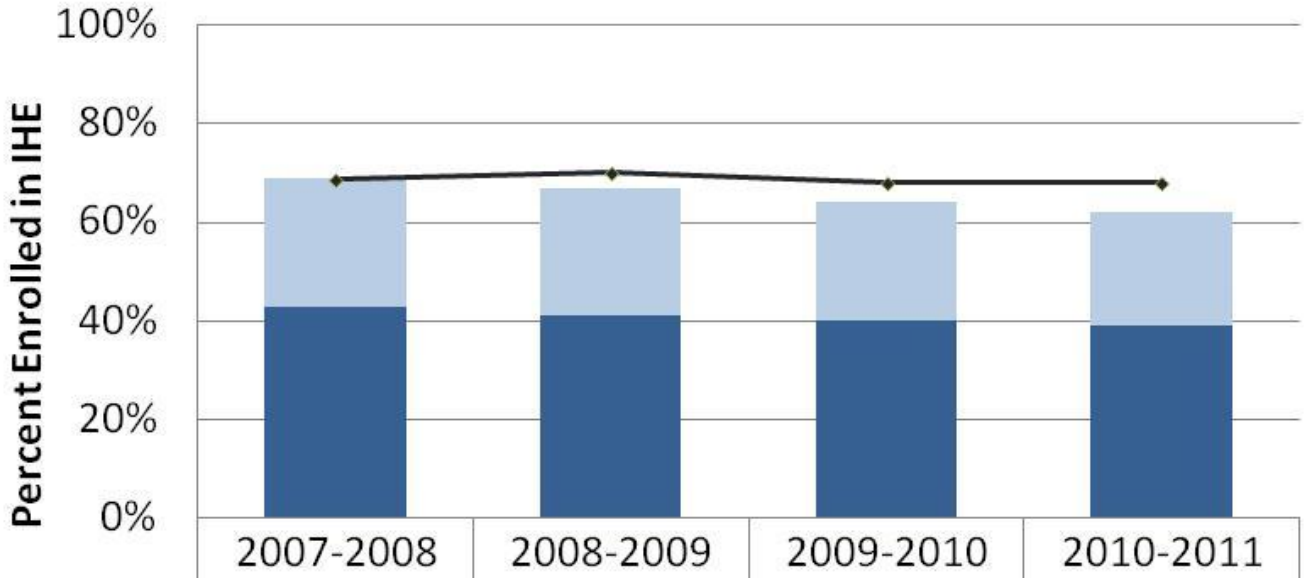
*Other diplomas and credentials include the Modified Standard, Special, and General Achievement Diplomas, GED, and Certificates of Program Completion.

A Closer Look at Students Earning Standard Diplomas



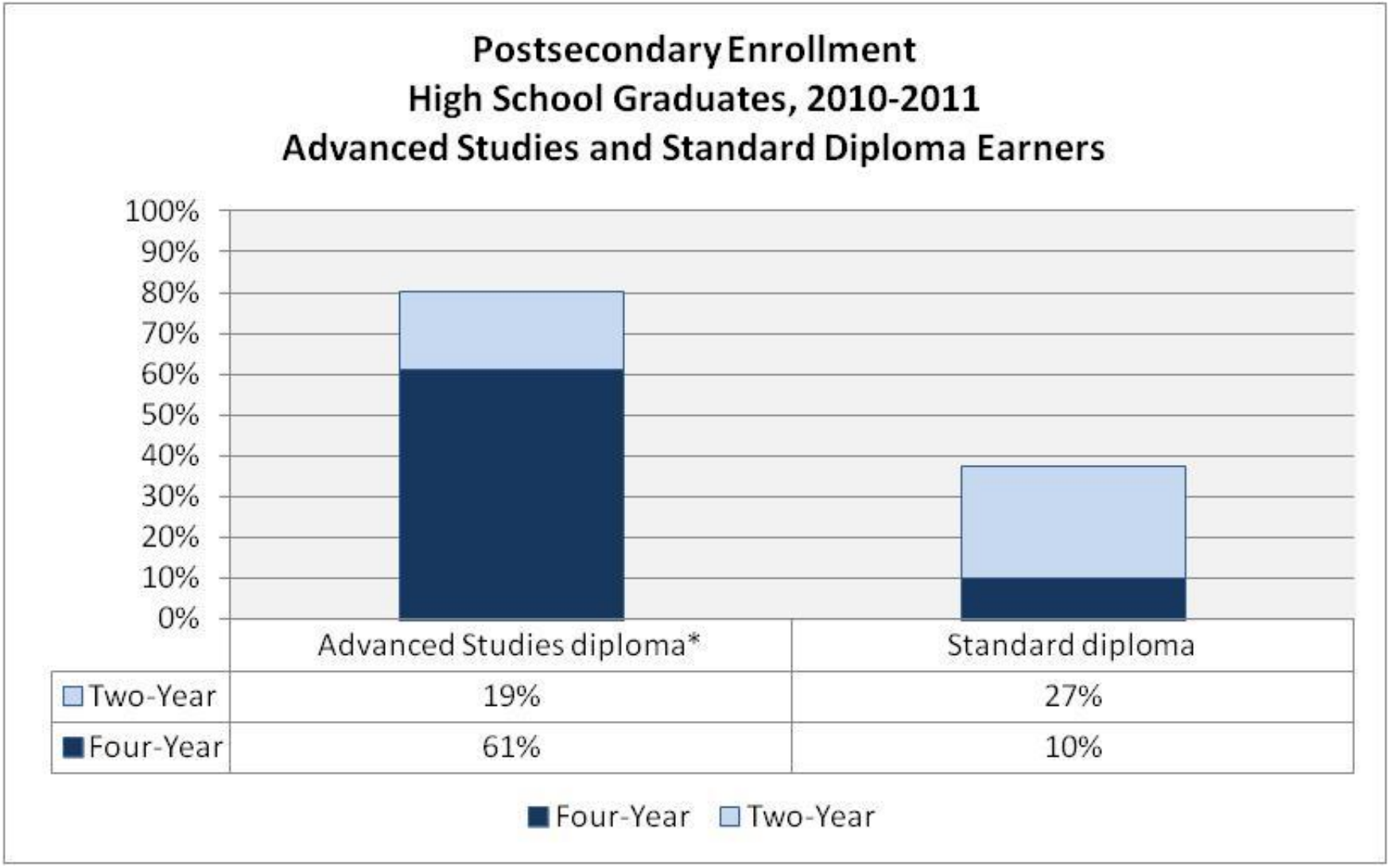
Fewer than one-quarter of students in the 2011 On-Time graduation cohort who earned a Standard diploma also earned externally validated CTE credentials.

Postsecondary enrollment

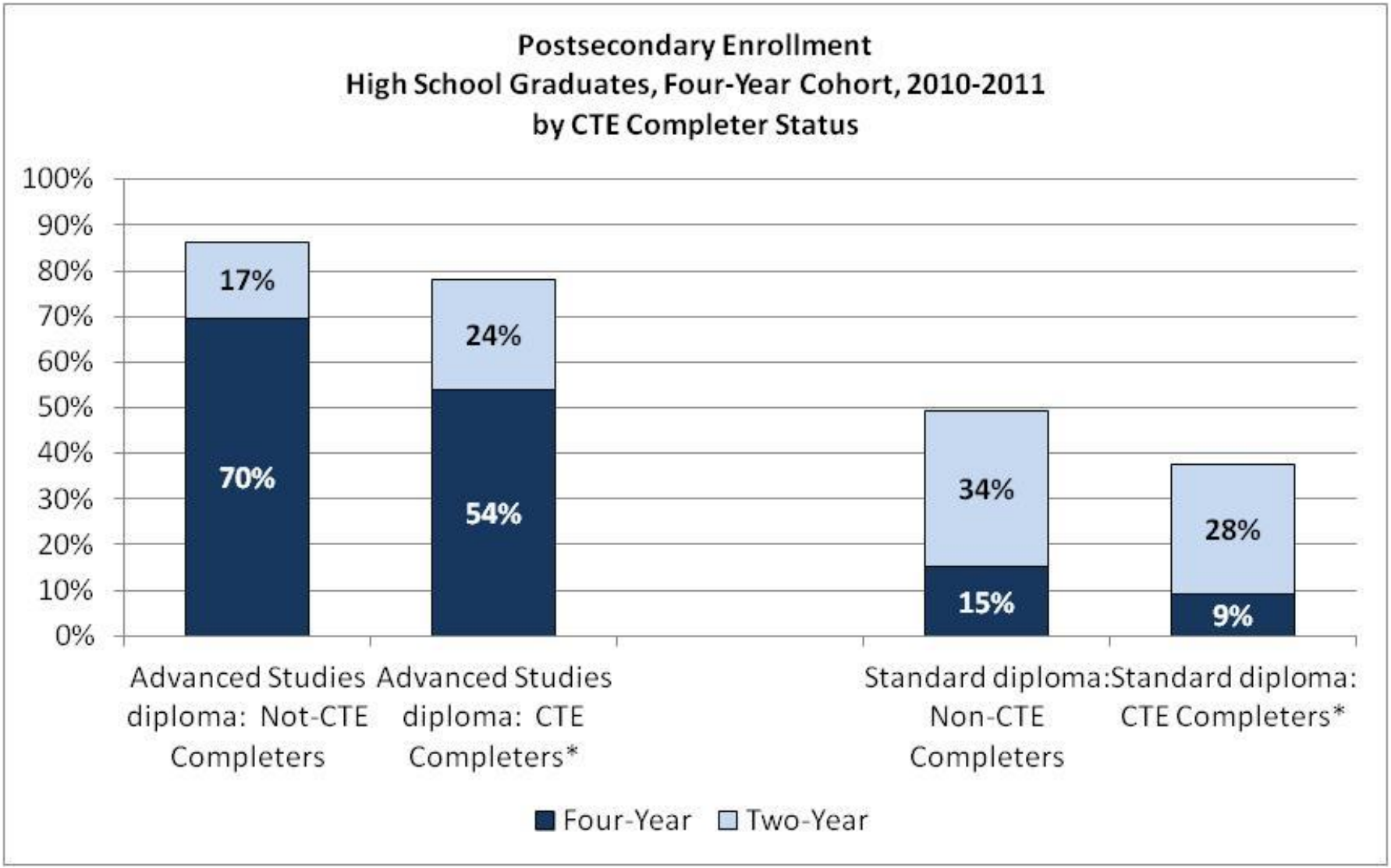


	2007-2008	2008-2009	2009-2010	2010-2011
2-year IHE	26%	26%	24%	23%
4-year IHE	43%	41%	40%	39%
Nationwide % college-going*	69%	70%	68%	68%

Virginia's college enrollment rate, estimated based on enrollment data provided by the National Student Clearinghouse. Includes public high school students who graduated with Standard or Advanced Studies diplomas in four years.
National rate estimated from the Bureau of Labor Statistics. Includes high school students from public and private schools.



*Includes International Baccalaureate diplomas.



*CTE Completers have met the requirements for a Career and Technical concentration or specialization and all requirements for high school graduation or an approved alternative education program. Not all CTE completers earn externally validated CTE credentials.

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Achievement Gaps in Virginia's Public Schools

Presentation to the Virginia Board of Education
April 2012

Deborah L. Jonas, Ph.D.
Executive Director, Research and Strategic Planning

Overview of Data Sources Included*

- Standards of Learning Assessments
- National Assessment of Educational Progress
- SAT©
- Advanced Placement (AP)©

*High school graduation rate data were presented during this same meeting. The presentation is available online at: http://www.doe.virginia.gov/boe/meetings/2012/04_apr/agenda_items/item_b.pdf.

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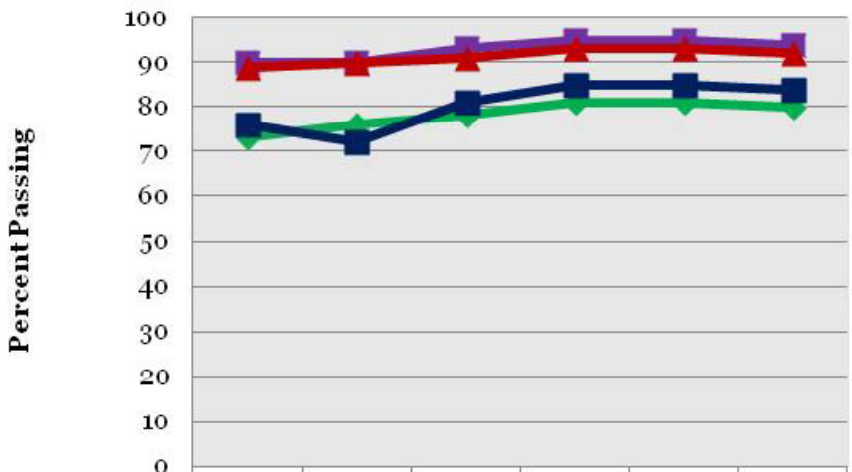
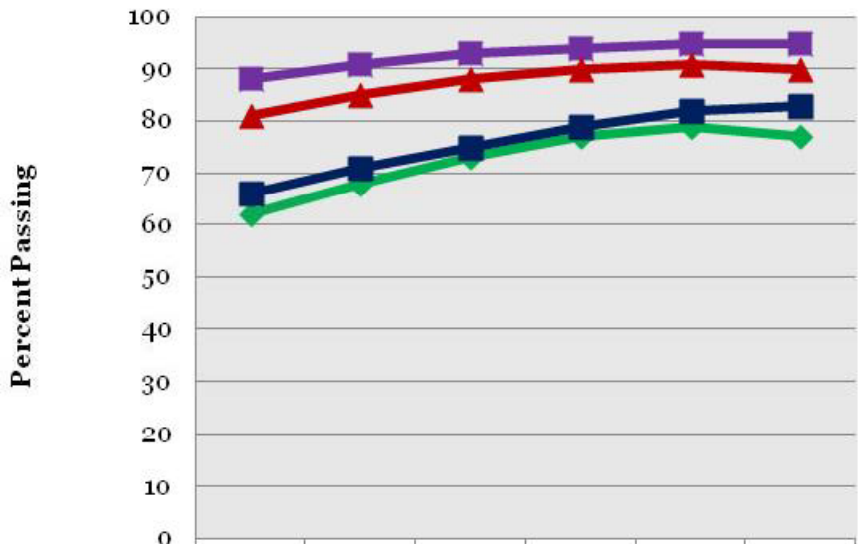
- Standards of Learning Assessments
- National Assessment of Educational Progress
- SAT©
- Advanced Placement (AP)©

SOL Pass Rates : English Reading 2005-2006 through 2010-2011



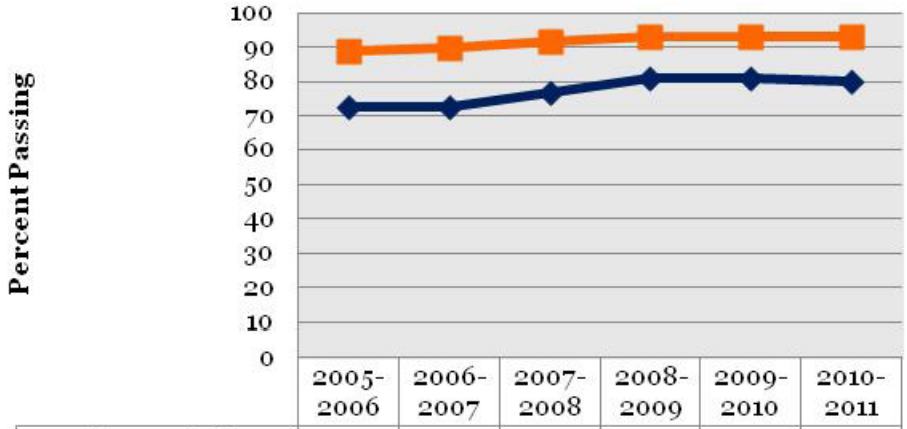
	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Asian	90	90	93	95	95	94
Black	73	76	78	81	81	80
Hispanic	76	72	81	85	85	84
White	89	90	91	93	93	92

SOL Pass Rates : Mathematics 2005-2006 through 2010-2011



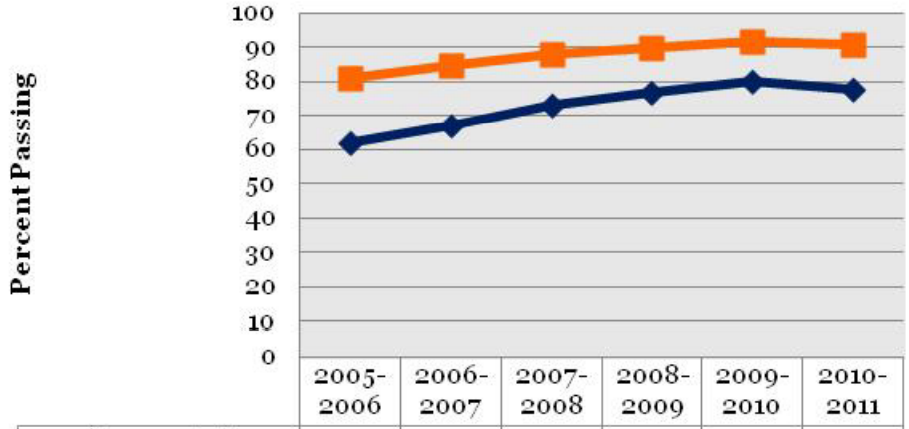
	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Asian	88	91	93	94	95	95
Black	62	68	73	77	79	77
Hispanic	66	71	75	79	82	83
White	81	85	88	90	91	90

SOL Pass Rates : English Reading 2005-2006 through 2010-2011



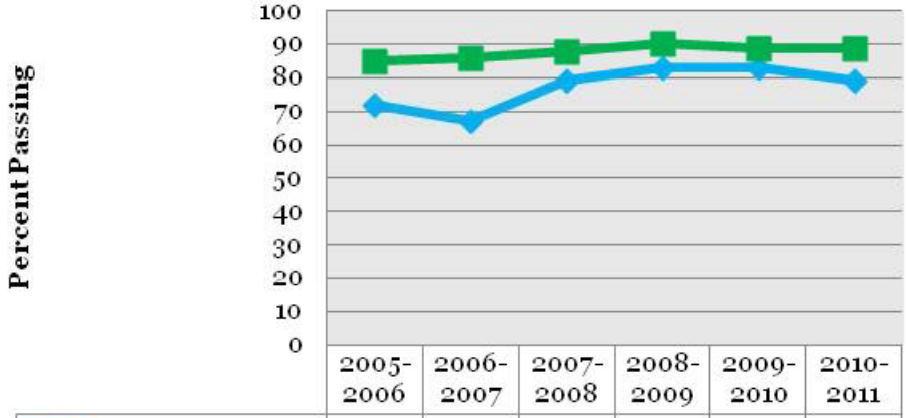
	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Economically Disadvantaged	73	73	77	81	81	80
Not Economically Disadvantaged	89	90	92	93	93	93

SOL Pass Rates : Mathematics 2005-2006 through 2010-2011



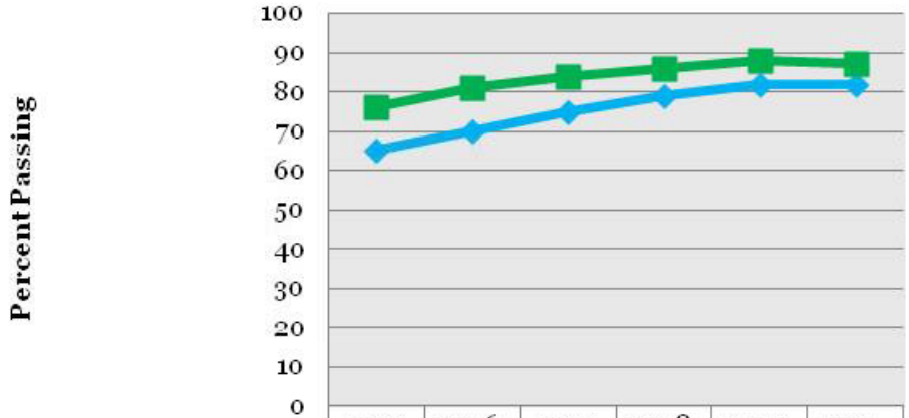
	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Economically Disadvantaged	62	67	73	77	80	78
Not Economically Disadvantaged	81	85	88	90	92	91

SOL Pass Rates : English Reading 2005-2006 through 2010-2011



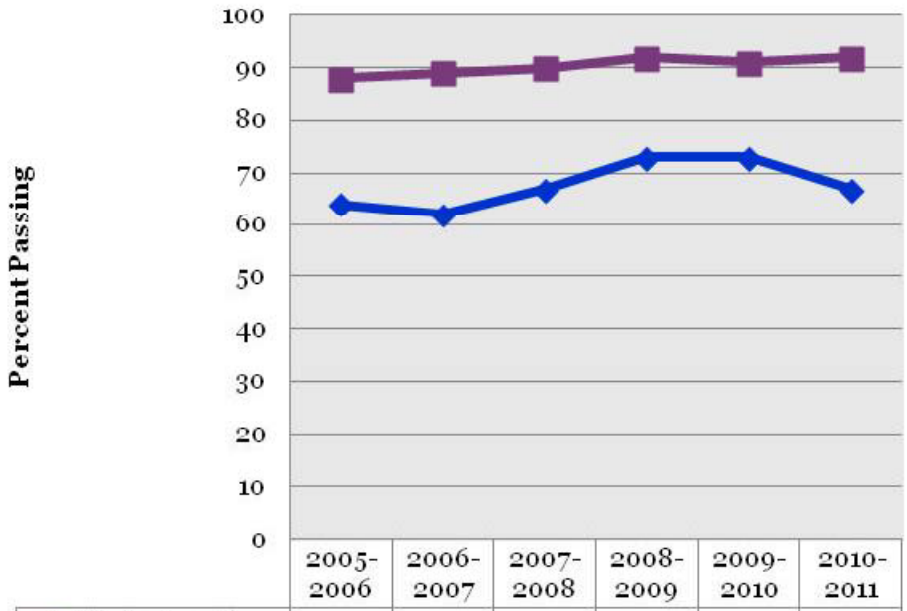
	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Limited English Proficient	72	67	79	83	83	79
Not Limited English Proficient	85	86	88	90	89	89

SOL Pass Rates : Mathematics 2005-2006 through 2010-2011



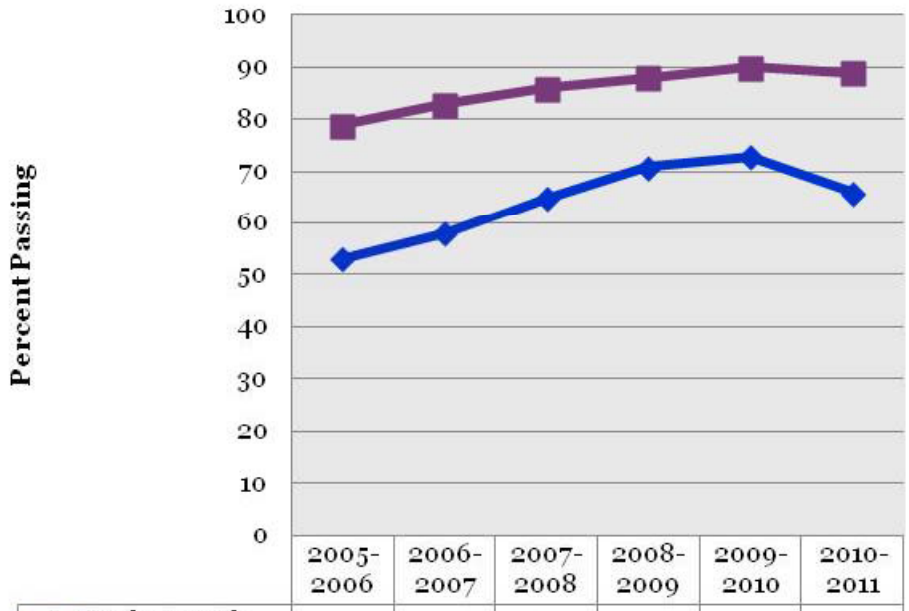
	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Limited English Proficient	65	70	75	79	82	82
Not Limited English Proficient	76	81	84	86	88	87

SOL Pass Rates : English Reading 2005-2006 through 2010-2011



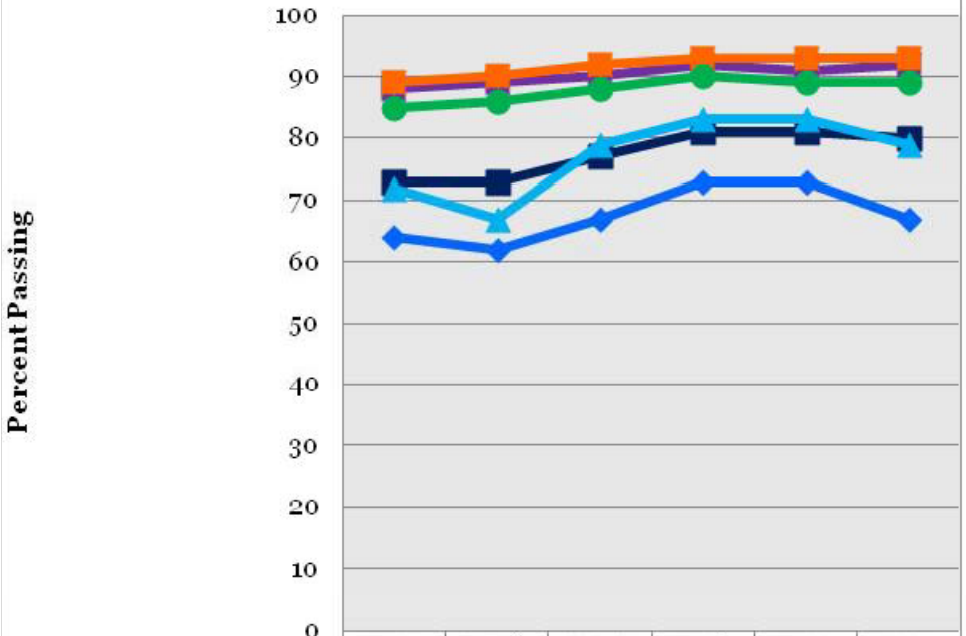
	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Students with Disabilities	64	62	67	73	73	67
Students without Disabilities	88	89	90	92	91	92

SOL Pass Rates : Mathematics 2005-2006 through 2010-2011



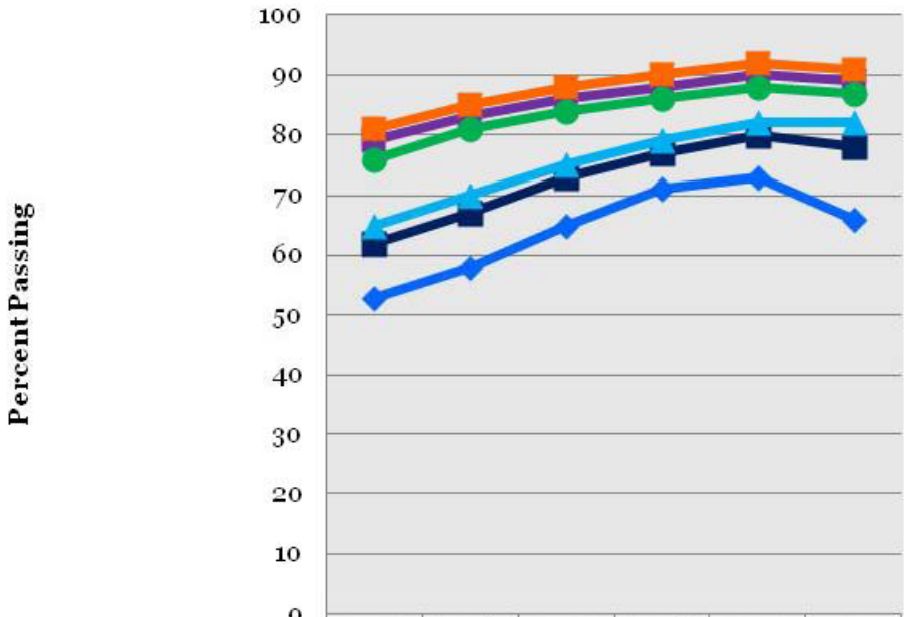
	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Students with Disabilities	53	58	65	71	73	66
Students without Disabilities	79	83	86	88	90	89

SOL Pass Rates : English Reading 2005-2006 through 2010-2011



	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Students with Disabilities	64	62	67	73	73	67
Economically Disadvantaged	73	73	77	81	81	80
Limited English Proficient	72	67	79	83	83	79
Students Without Disabilities	88	89	90	92	91	92
Not Economically Disadvantaged	89	90	92	93	93	93
Not Limited English Proficient	85	86	88	90	89	89

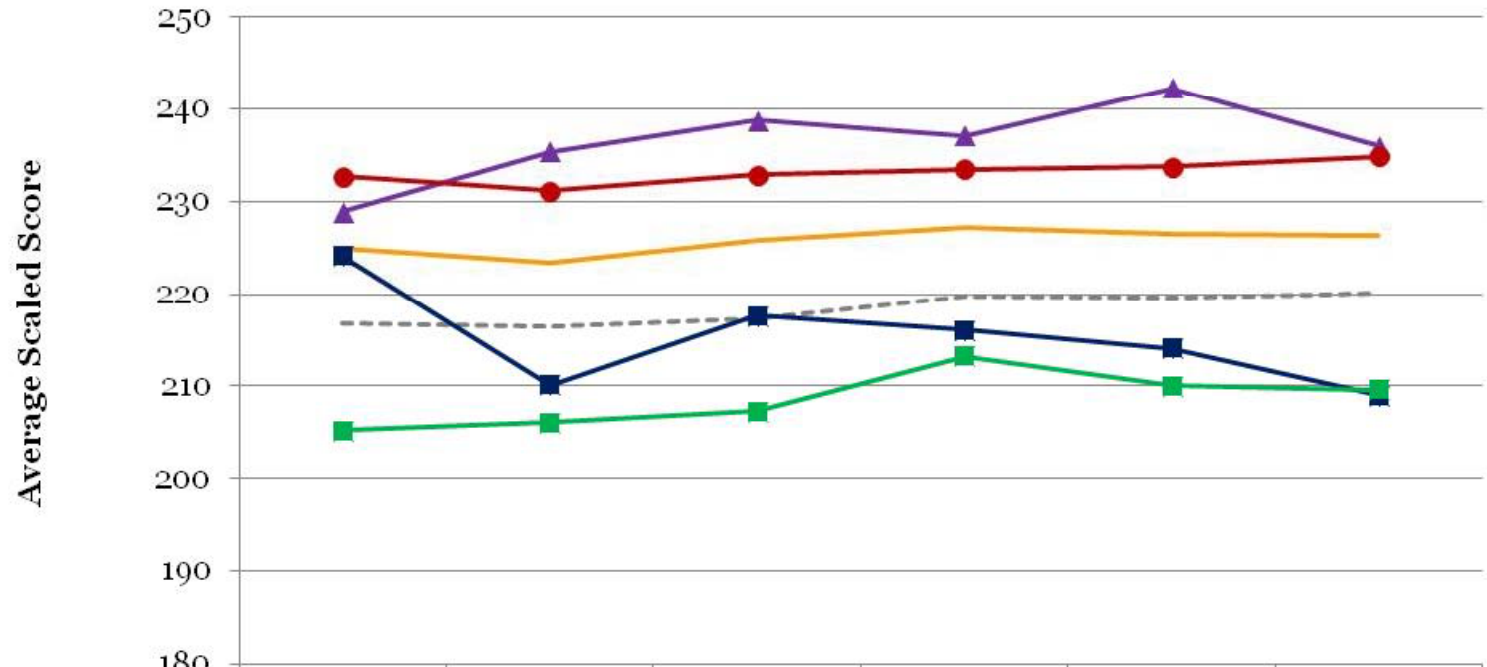
SOL Pass Rates : Mathematics 2005-2006 through 2010-2011



	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Students with Disabilities	53	58	65	71	73	66
Economically Disadvantaged	62	67	73	77	80	78
Limited English Proficient	65	70	75	79	82	82
Students Without Disabilities	79	83	86	88	90	89
Not Economically Disadvantaged	81	85	88	90	92	91
Not Limited English Proficient	76	81	84	86	88	87

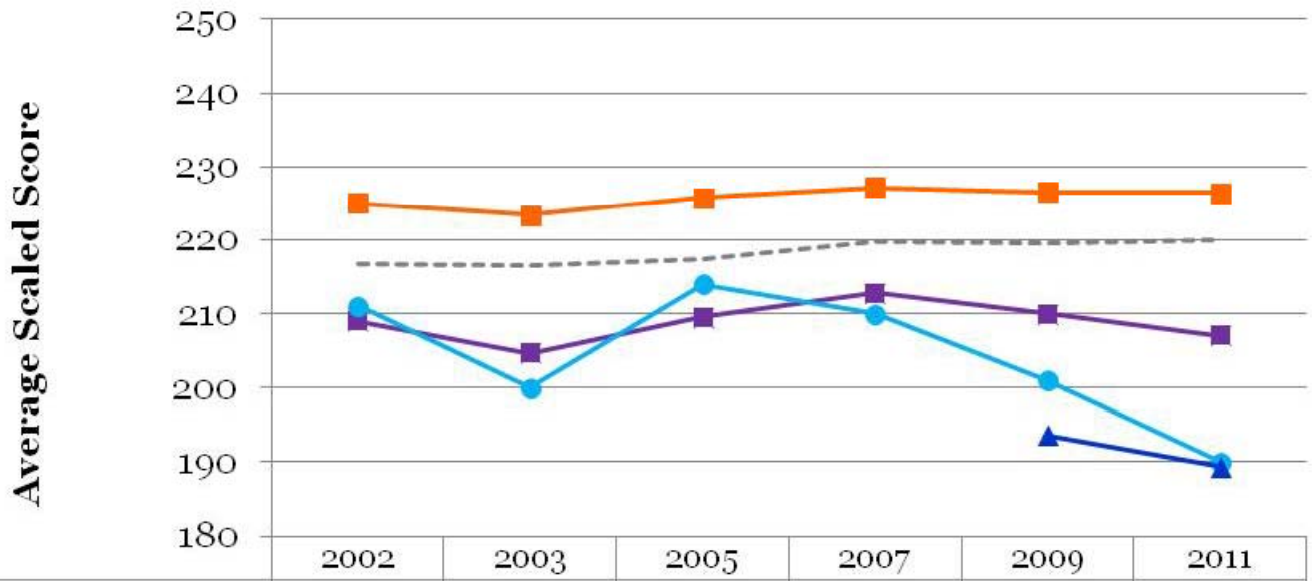
Overview of Data Sources Included

- Standards of Learning Assessments
- National Assessment of Educational Progress
- SAT©
- Advanced Placement (AP)©



	2002	2003	2005	2007	2009	2011
National Public-All	217	216	217	220	220	220
VA-All	225	223	226	227	227	226
VA-Asian	229	235	239	237	242	236
VA-White	233	231	233	233	234	235
VA-Hispanic	224	210	218	216	214	209
VA-Black	205	206	207	213	210	210

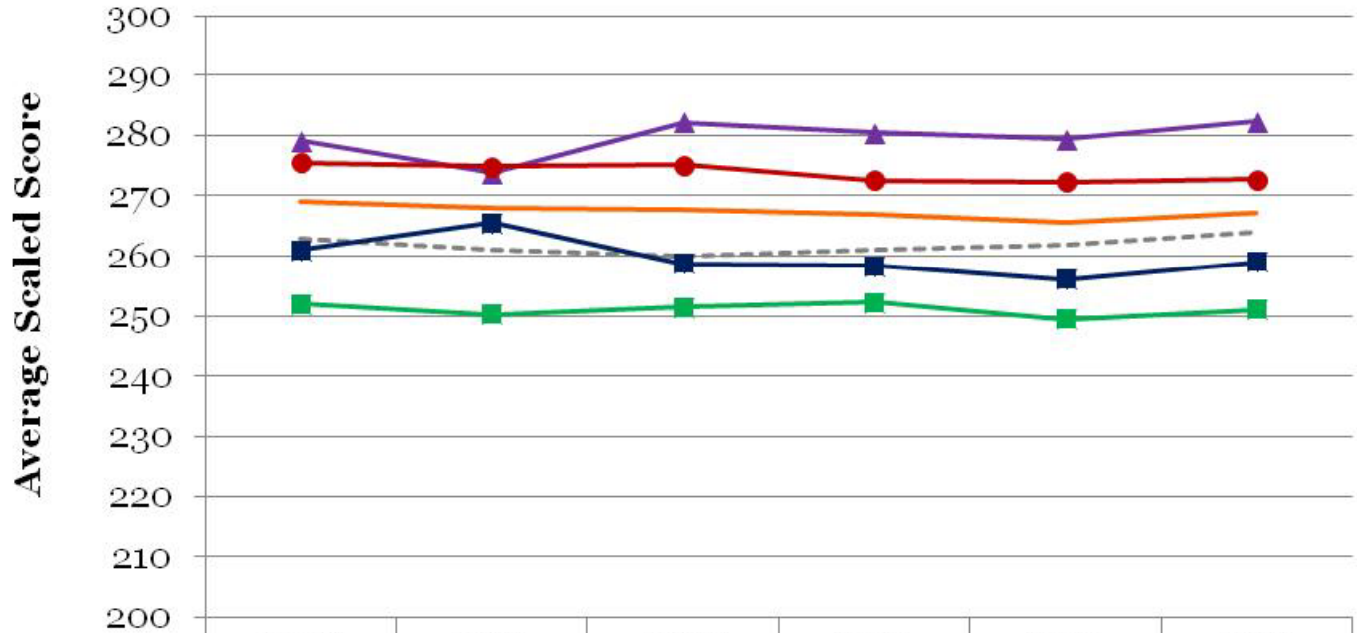
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress



	2002	2003	2005	2007	2009	2011
VA-All	225	223	226	227	227	226
National Public-All	217	216	217	220	220	220
VA-FRPL*	209	205	209	213	210	207
VA-English Language Learners	211	200	214	210	201	190
VA-Students with Disabilities**					194	189

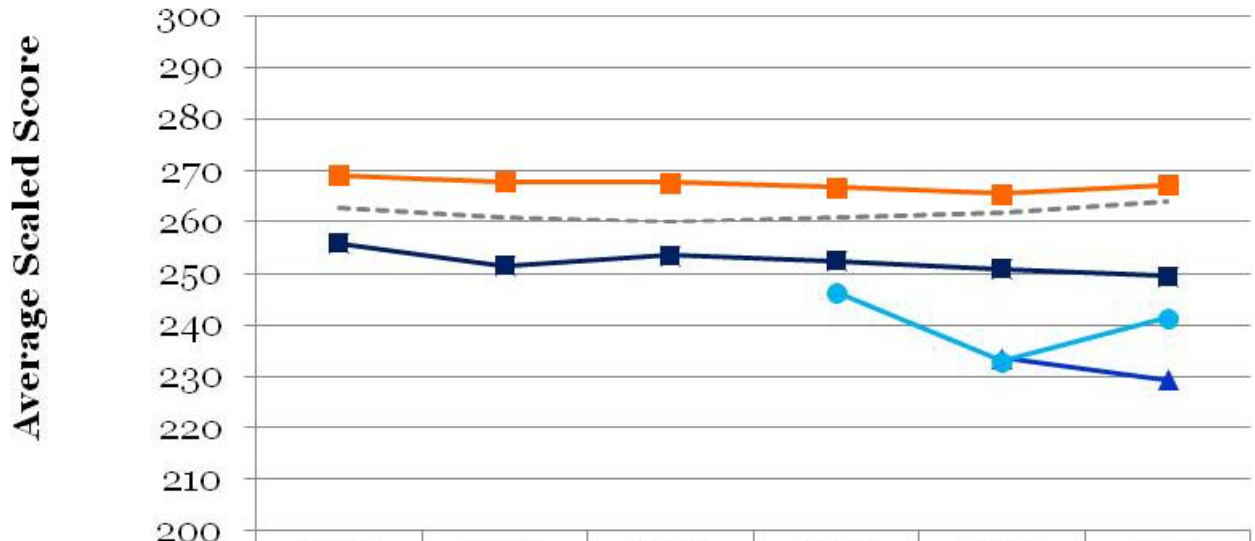
*Students eligible for free- or reduced-price lunch
**Prior year data is not comparable

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress



	2002	2003	2005	2007	2009	2011
National Public-All	263	261	260	261	262	264
VA-All	269	268	268	267	266	267
VA-Asian	279	274	282	280	279	282
VA-Black	252	250	251	252	250	251
VA-Hispanic	261	266	259	258	256	259
VA-White	275	275	275	273	272	273

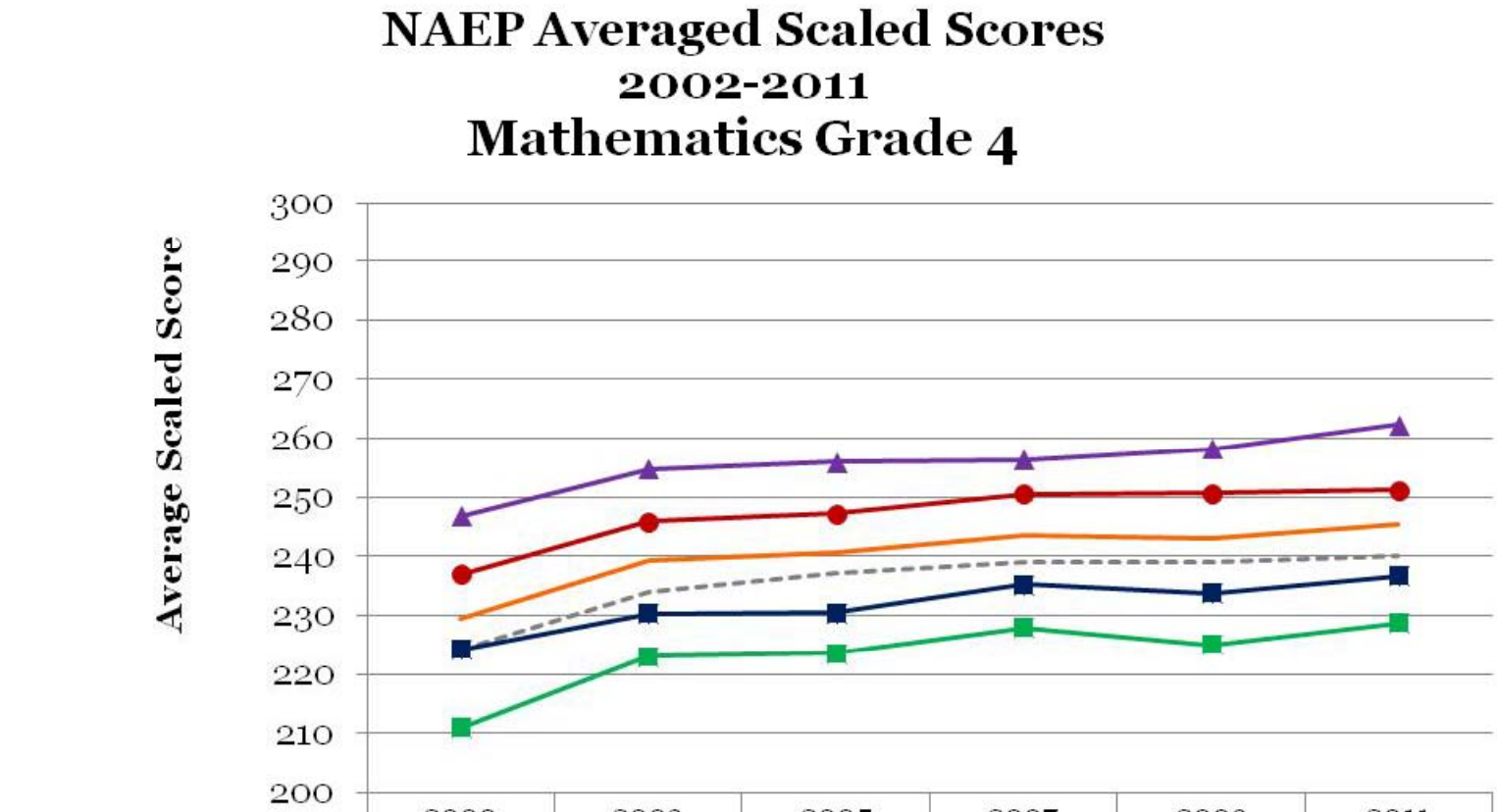
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress



	2002	2003	2005	2007	2009	2011
National Public-All	263	261	260	261	262	264
VA-All	269	268	268	267	266	267
VA-Students with Disabilities**					234	229
VA-FRPL*	256	252	253	252	251	250
VA-English Language Learners				246	233	241

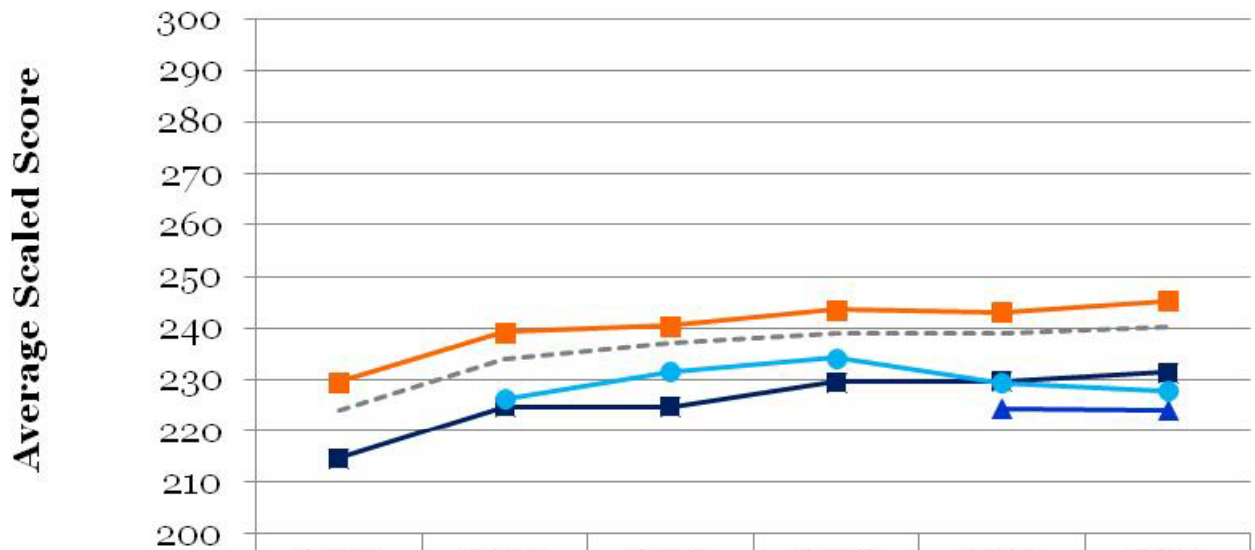
*Students eligible for free- or reduced-price lunch
**Prior year data is not comparable

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress



	2000	2003	2005	2007	2009	2011
National Public-All	224	234	237	239	239	240
VA-All	230	239	240	244	243	245
VA-Asian	247	255	256	256	258	262
VA-Black	211	223	224	228	225	229
VA-Hispanic	224	230	230	235	234	237
VA-White	237	246	247	251	251	251

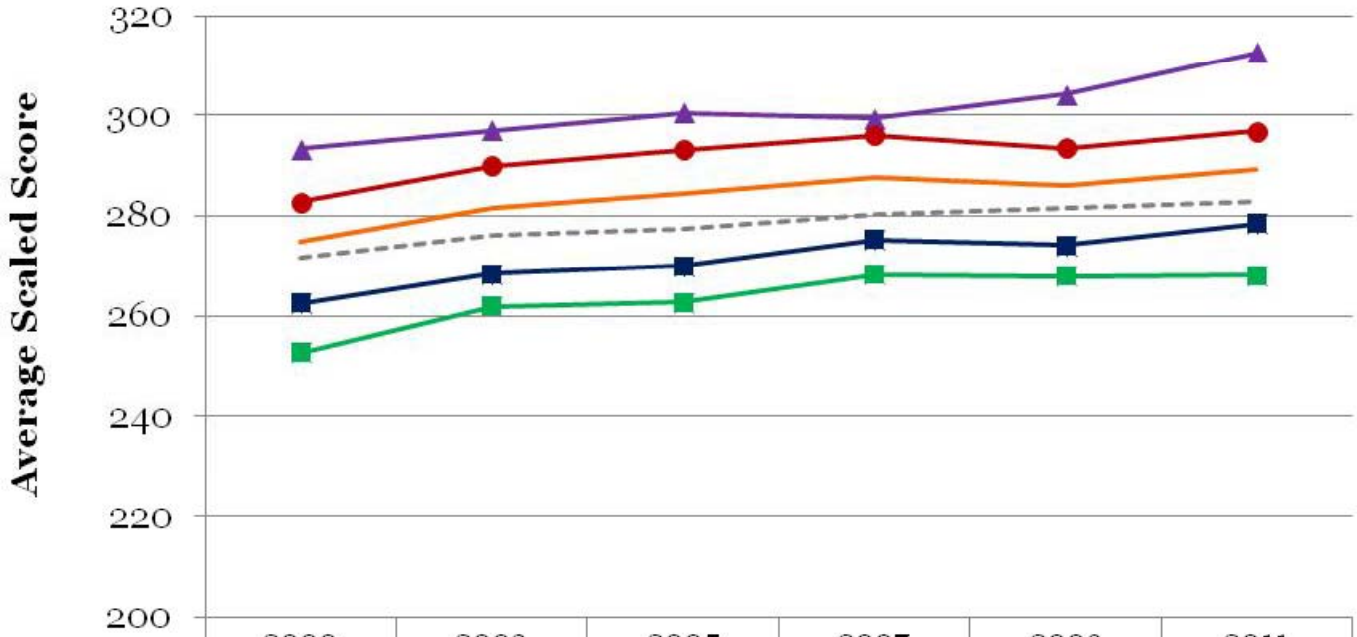
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress



	2000	2003	2005	2007	2009	2011
National Public-All	224	234	237	239	239	240
VA-All	230	239	240	244	243	245
VA-Students with Disabilities**					224	224
VA-FRPL*	215	225	225	230	230	231
VA-English Language Learners		226	232	234	229	228

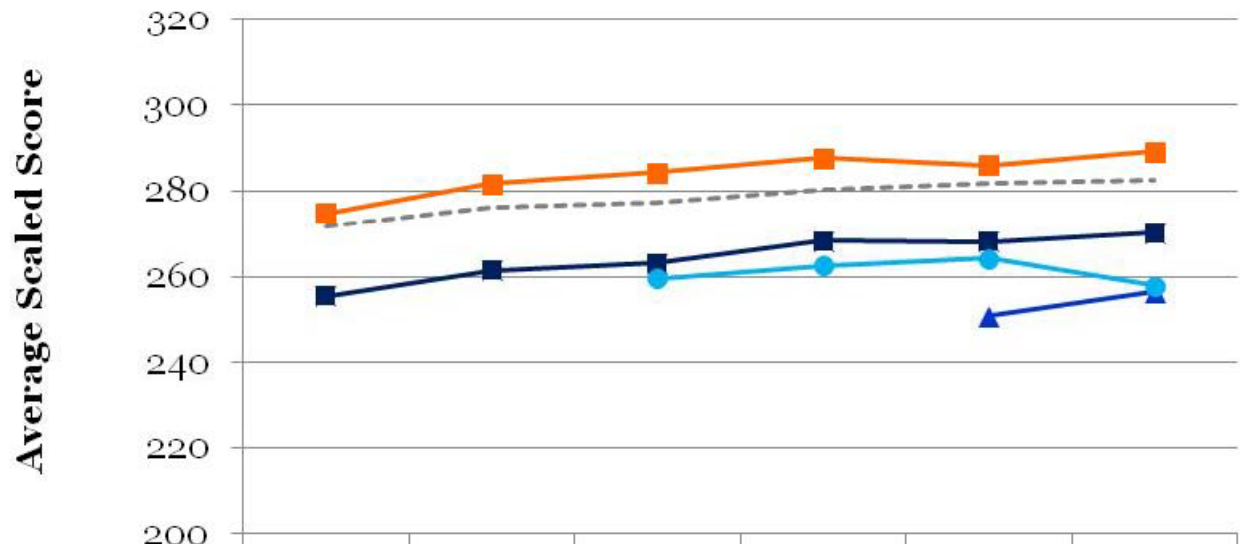
*Students eligible for free- or reduced-price lunch
**Prior year data is not comparable

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress



	2000	2003	2005	2007	2009	2011
National Public-All	272	276	278	280	282	283
VA-All	275	282	284	288	286	289
VA-Asian	293	297	300	299	304	313
VA-Black	253	262	263	268	268	268
VA-Hispanic	263	268	270	275	274	279
VA-White	283	290	293	296	294	297

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress



	2000	2003	2005	2007	2009	2011
National Public-All	272	276	278	280	282	283
VA-All	275	282	284	288	286	289
VA-Students with Disabilities**					251	256
VA-FRPL*	256	261	263	268	268	270
VA-English Language Learners			260	263	264	258

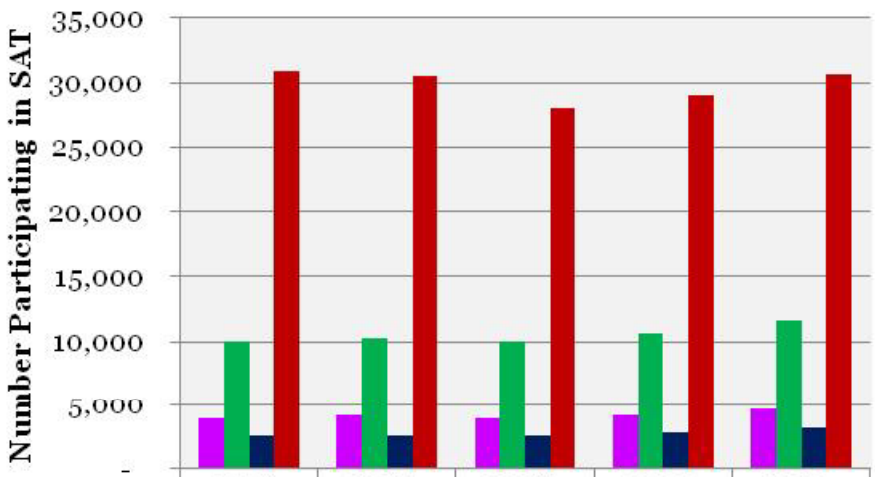
*Students eligible for free- or reduced-price lunch
**Prior year data is not comparable

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress

Overview of Data Sources Included

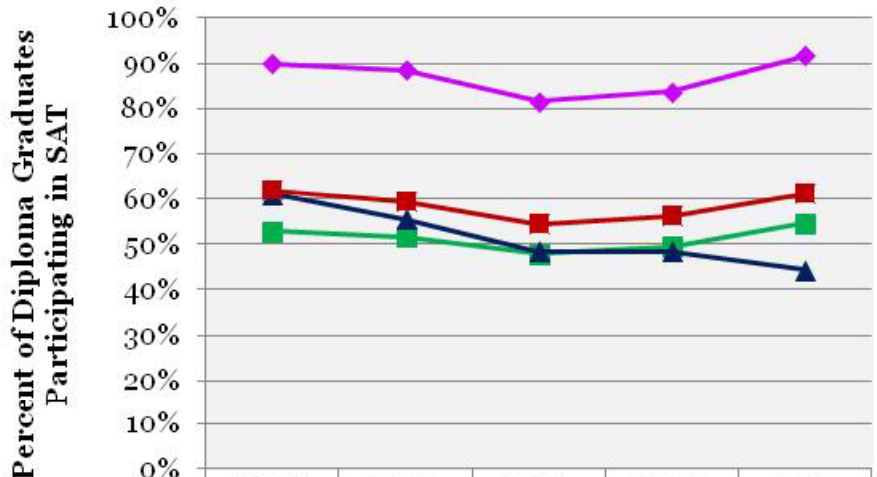
- Standards of Learning Assessments
- National Assessment of Educational Progress
- SAT©
- Advanced Placement (AP)©

Number of SAT Test Takers



	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Asian	3,888	4,140	3,882	4,159	4,658
Black	9,981	10,282	10,034	10,636	11,636
Hispanic	2,522	2,553	2,526	2,799	3,209
White	30,922	30,546	28,022	29,074	30,671

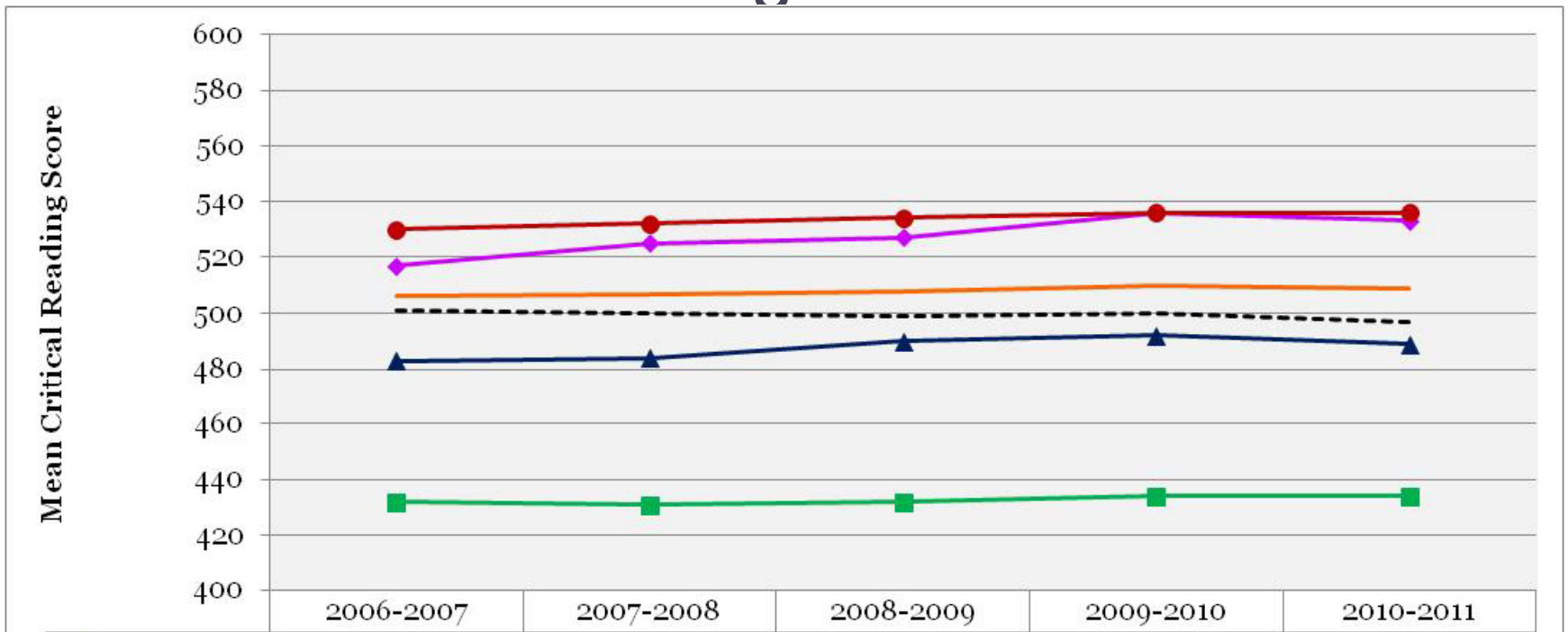
Percent of Diploma Graduates Taking SAT



	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Asian	90%	88%	82%	84%	92%
Black	53%	52%	48%	49%	55%
Hispanic	61%	55%	48%	48%	44%
White	62%	59%	54%	56%	61%

Note: Number of Hispanic Students in Virginia's high schools has increased by 32% or nearly 12,000 students from 2006-2007 through 2010-2011.
Sources: Student Achievement Report 2010-2011, Virginia Schools. New York: College Board.
Virginia Department of Education Graduation Statistics

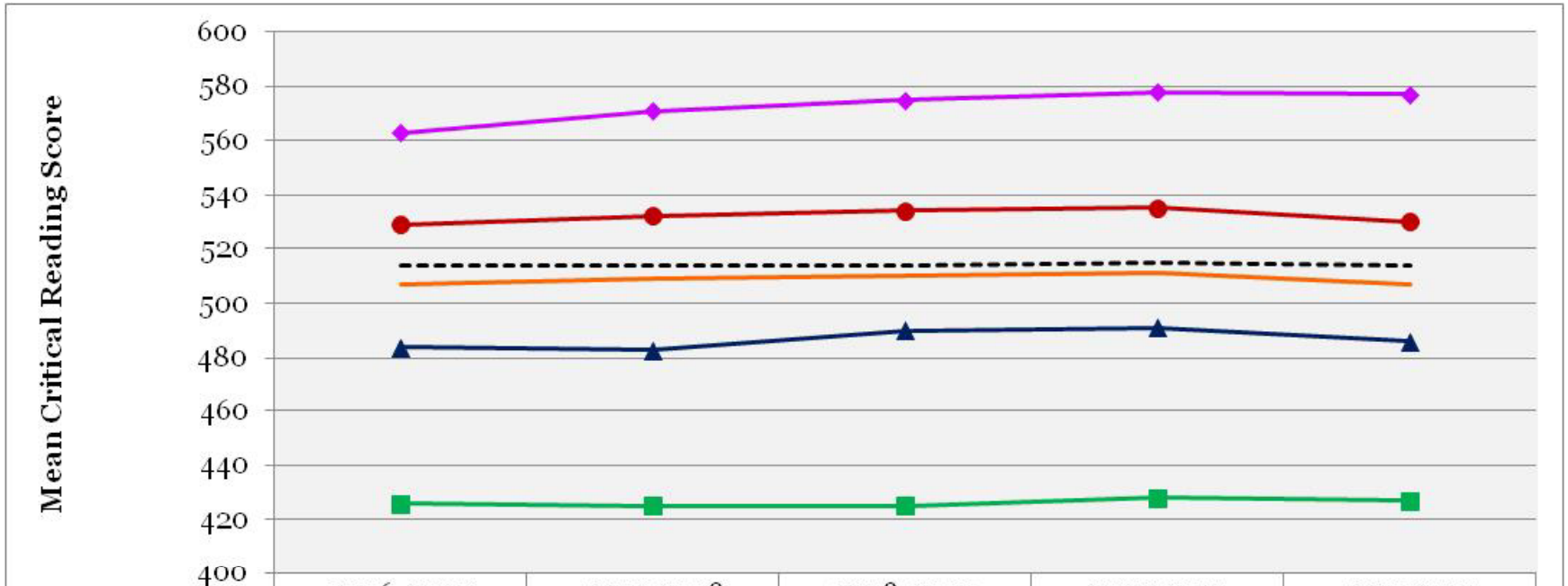
SAT Critical Reading Performance



	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Asian	517	525	527	536	533
Black	432	431	432	434	434
Hispanic	483	484	490	492	489
White	530	532	534	536	536
National	501	500	499	500	497
Virginia all	506	507	508	510	509

Source: Student Achievement Report 2010-2011, Virginia Schools. New York: College Board.

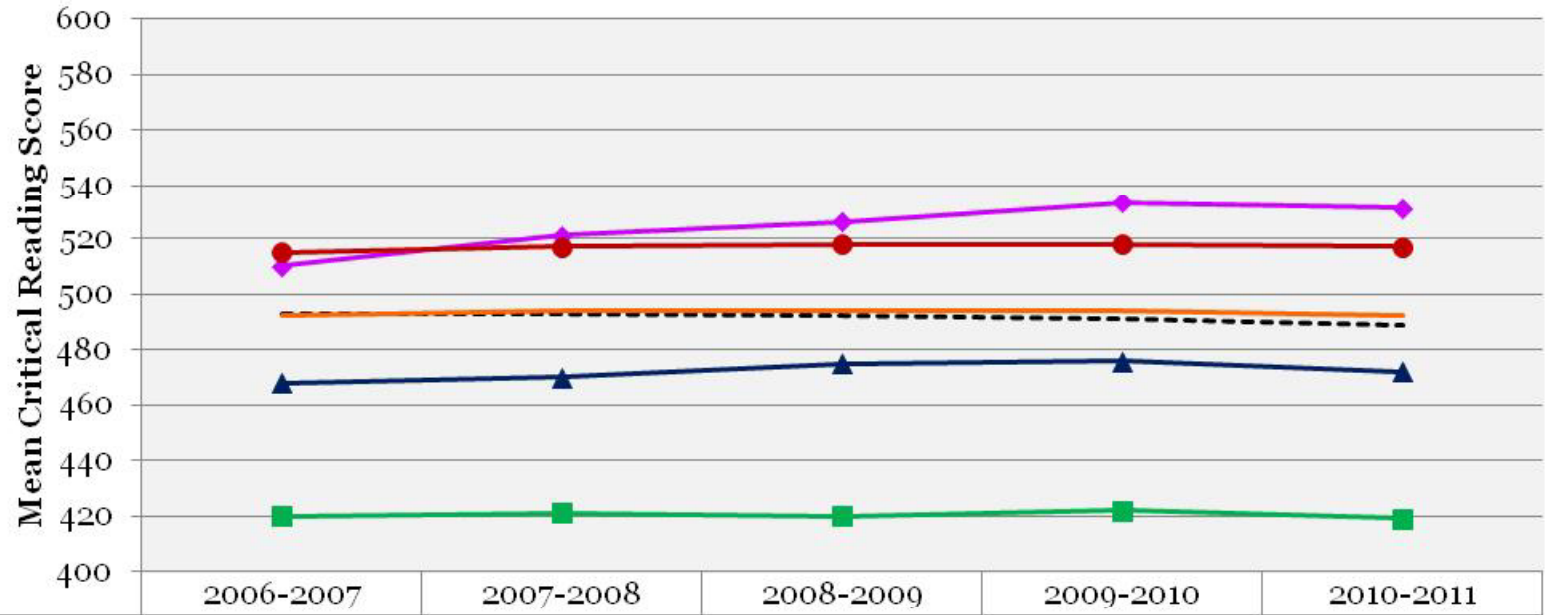
SAT Mathematics Performance



	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Asian	563	571	575	578	577
Black	426	425	425	428	427
Hispanic	484	483	490	491	486
White	529	532	534	535	530
National	514	514	514	515	514
Virginia All	507	509	510	511	507

Source: Student Achievement Report 2010-2011, Virginia Schools. New York: College Board.

SAT Writing Performance



	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Asian	510	521	526	533	531
Black	420	421	420	422	419
Hispanic	468	470	475	476	472
White	515	517	518	518	517
National	493	493	492	491	489
Virginia All	492	494	494	494	492

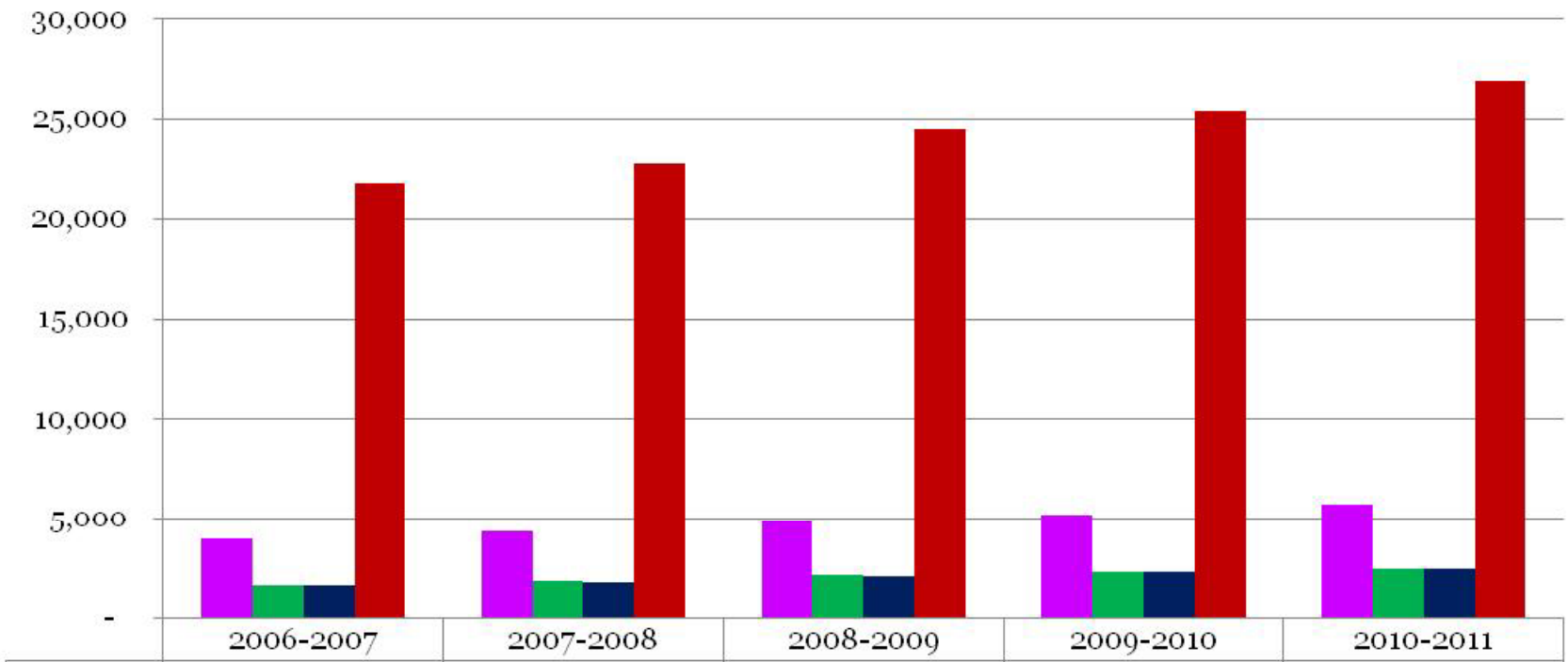
Source: Student Achievement Report 2010-2011, Virginia Schools. New York: College Board.

Overview of Data Sources Included

- Standards of Learning Assessments
- National Assessment of Educational Progress
- SAT©
- Advanced Placement (AP)©
  - Nearly 26 percent of Virginia's 2011 high school graduates earned a 3 or higher on an AP Exam during high school
  - Only two states—Maryland and New York—have a larger percentage of students earning qualifying scores on AP Exams.

Source: The 8th Annual AP Report to the Nation: State Supplement, Virginia (2012). New York: College Board.

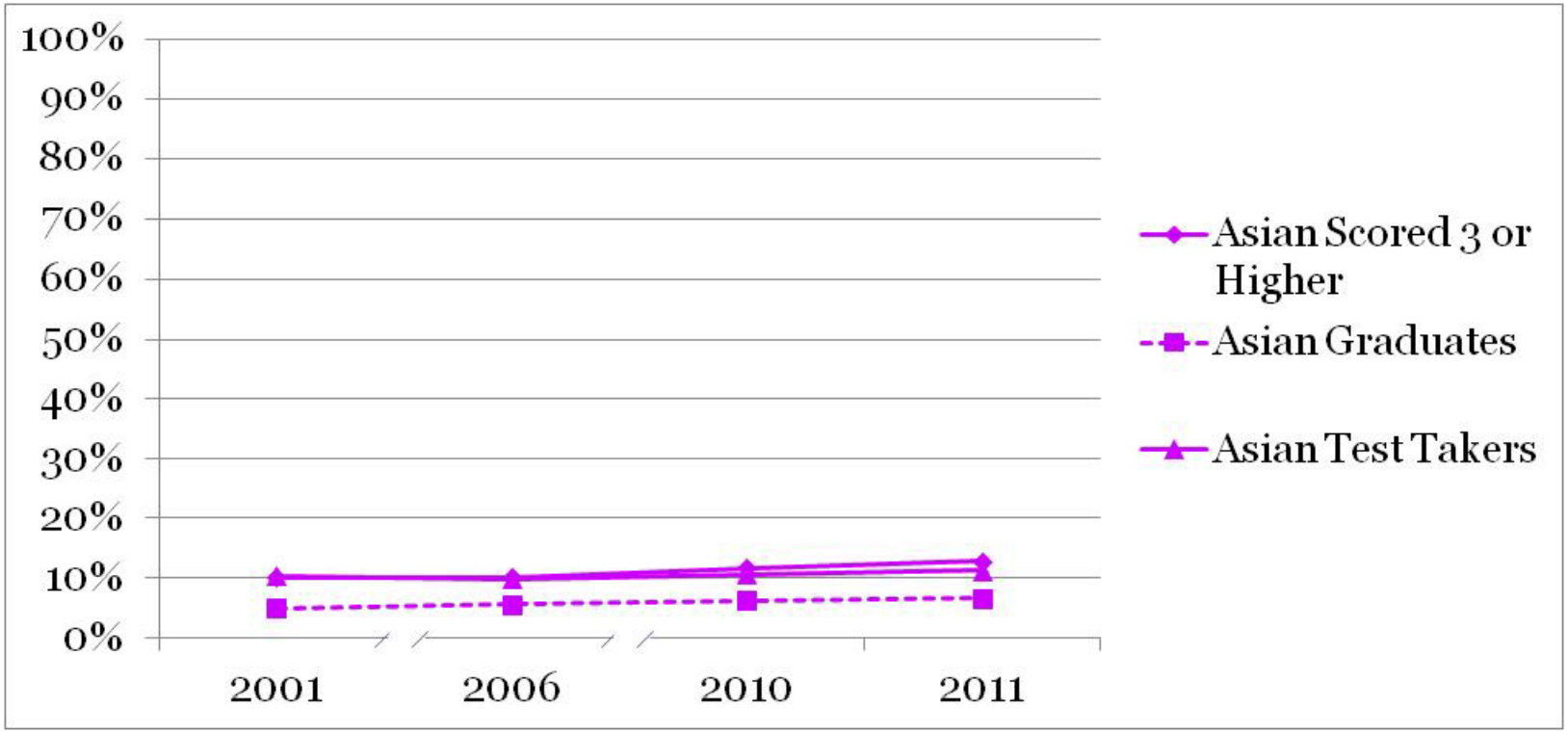
Number of AP Exam Takers Earning a Score of 3, 4, or 5



	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Asian	3,931	4,315	4,826	5,234	5,752
Black	1,564	1,804	2,102	2,290	2,452
Hispanic	1,582	1,768	2,052	2,263	2,416
White	21,753	22,728	24,444	25,415	26,918

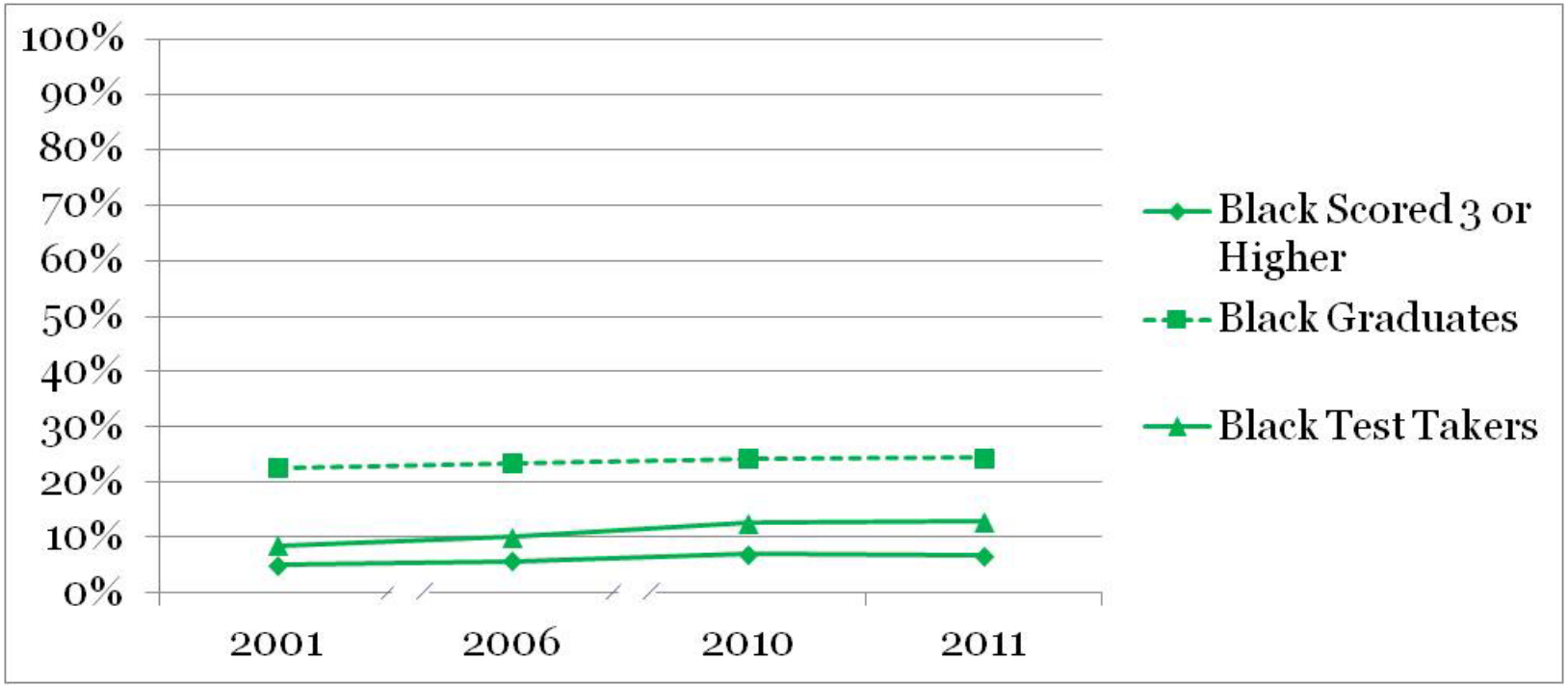
Source: Student Achievement Report 2010-2011, Virginia Schools. New York: College Board.

How representative are test takers compared to the population of high school graduates?



Source: The 8th Annual AP Report to the Nation: State Supplement, Virginia (2012). New York: College Board.
Notes: College Board graduation data that are estimates based on information provided by the Western Interstate Commission for Higher Education (2008). Data may include students who graduated from Virginia's private high schools.

How representative are test takers compared to the population of high school graduates?



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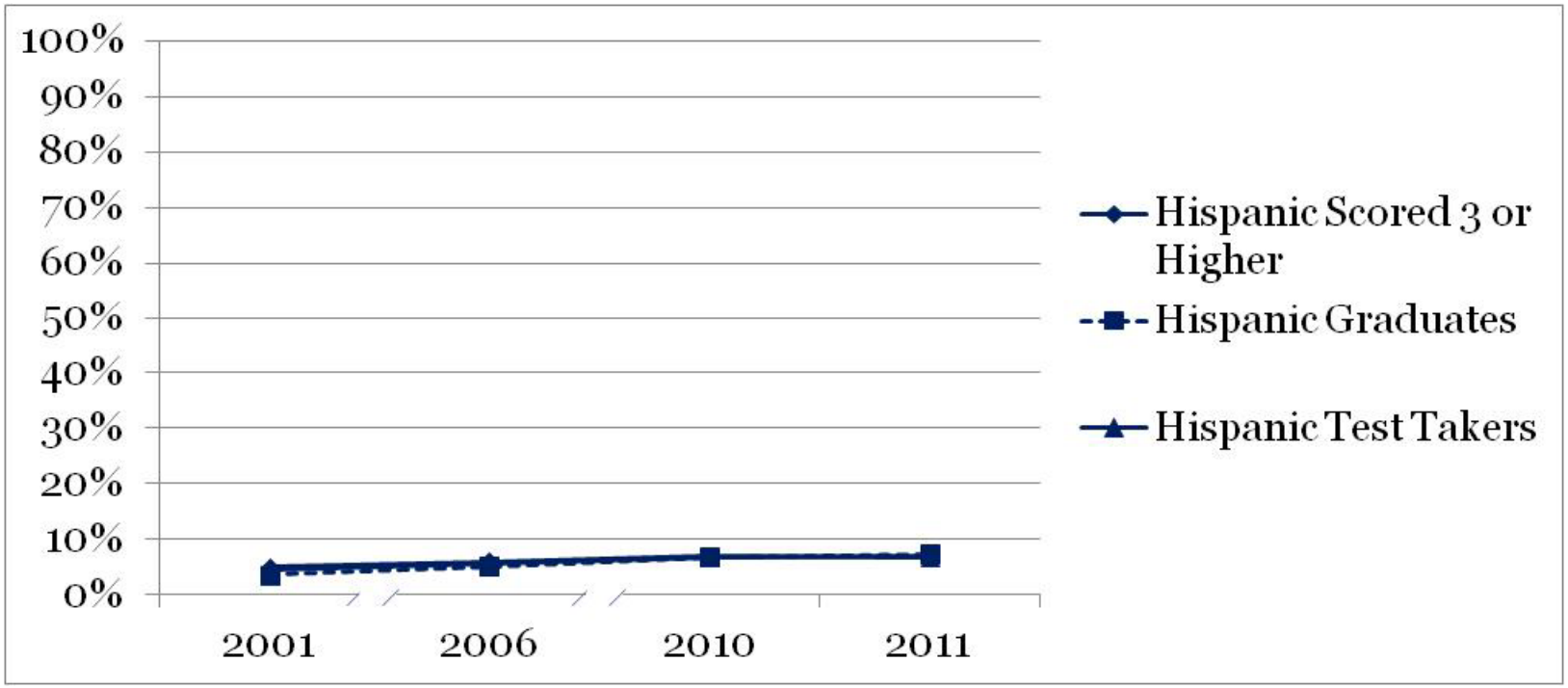
How representative are test takers compared to the population of high school graduates?*



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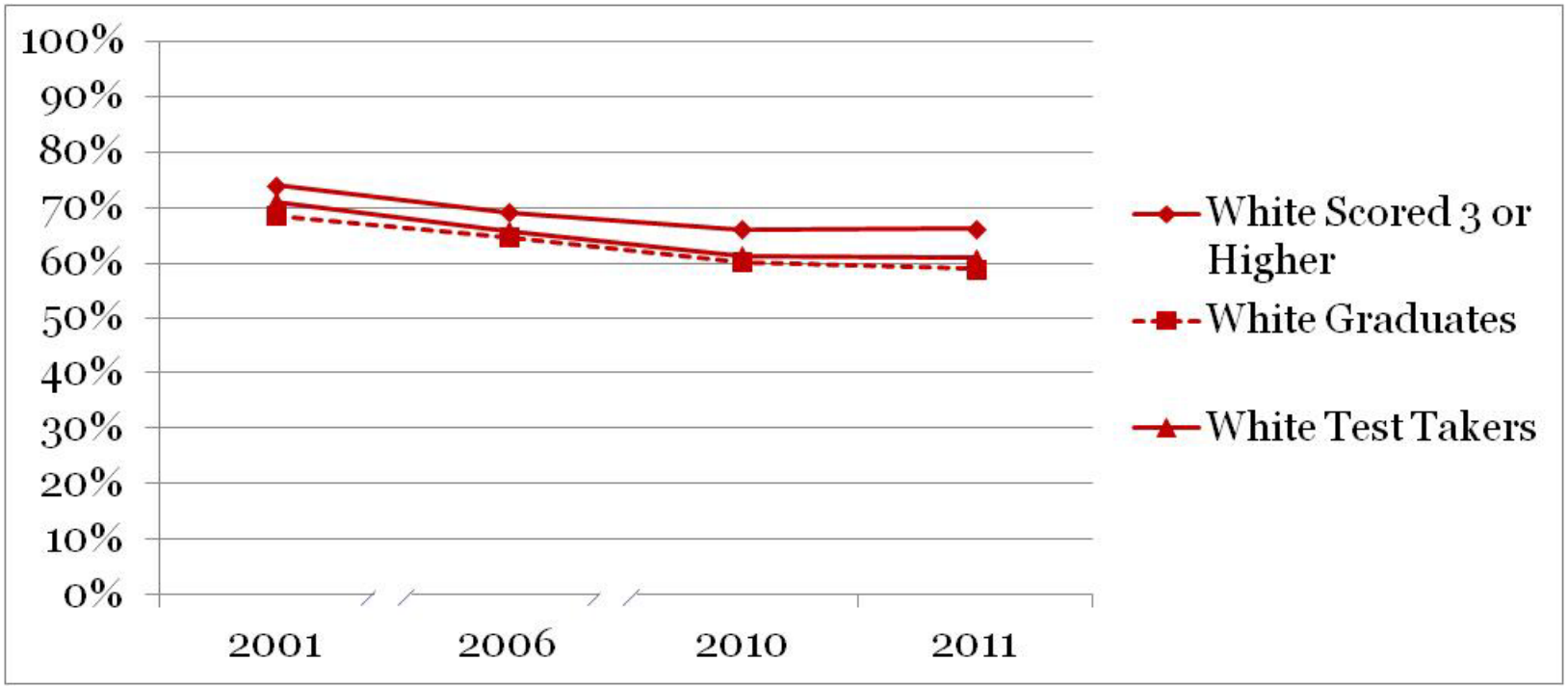
How representative are test takers compared to the population of high school graduates?*



Source: The 8th Annual AP Report to the Nation: State Supplement, Virginia (2012). New York: College Board.
Notes: College Board graduation data that are estimates based on information provided by the Western Interstate Commission for Higher Education (2008). Data may include students who graduated from Virginia's private high schools.

Common themes across data types

- White and Asian students outperform other groups.
- Students with disabilities have the lowest performance across data types.
- Black/African American students are among the lowest performing students when compared to students of other race/ethnicity groups.

Common themes across data types

- In reading, SOL scores have increased over time while Virginia's NAEP scores have remained flat or decreased for some student groups. Nationally, reading performance has improved.

- In mathematics, SOL and NAEP performance have improved over time in Virginia for all students and for most groups. This is consistent with national trends.

Common themes across data types

- AP participation and success—as defined by the College Board—suggests:
  - Hispanic students participating and succeeding on AP Exams are similarly represented among AP Exam takers, relative to the population of Hispanic graduates.
  - African American students participating and succeeding on AP Exams are underrepresented relative to the population of African American graduates.
  - Asian and White students participating and succeeding on AP Exams are overrepresented relative to the population of Asian and White graduates.

- Student performance on SAT has increased over time, even with the number of Virginia students participating in SAT testing increasing across student groups.

Contact Information

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Virginia Department of Education
Deborah.Jonas@doe.virginia.gov

Profile of Virginia's Instructional School Personnel

Presented to the Virginia Board of Education
April 25, 2012

Mrs. Patty S. Pitts
Assistant Superintendent of Teacher Education and Licensure

Virginia Department of Education

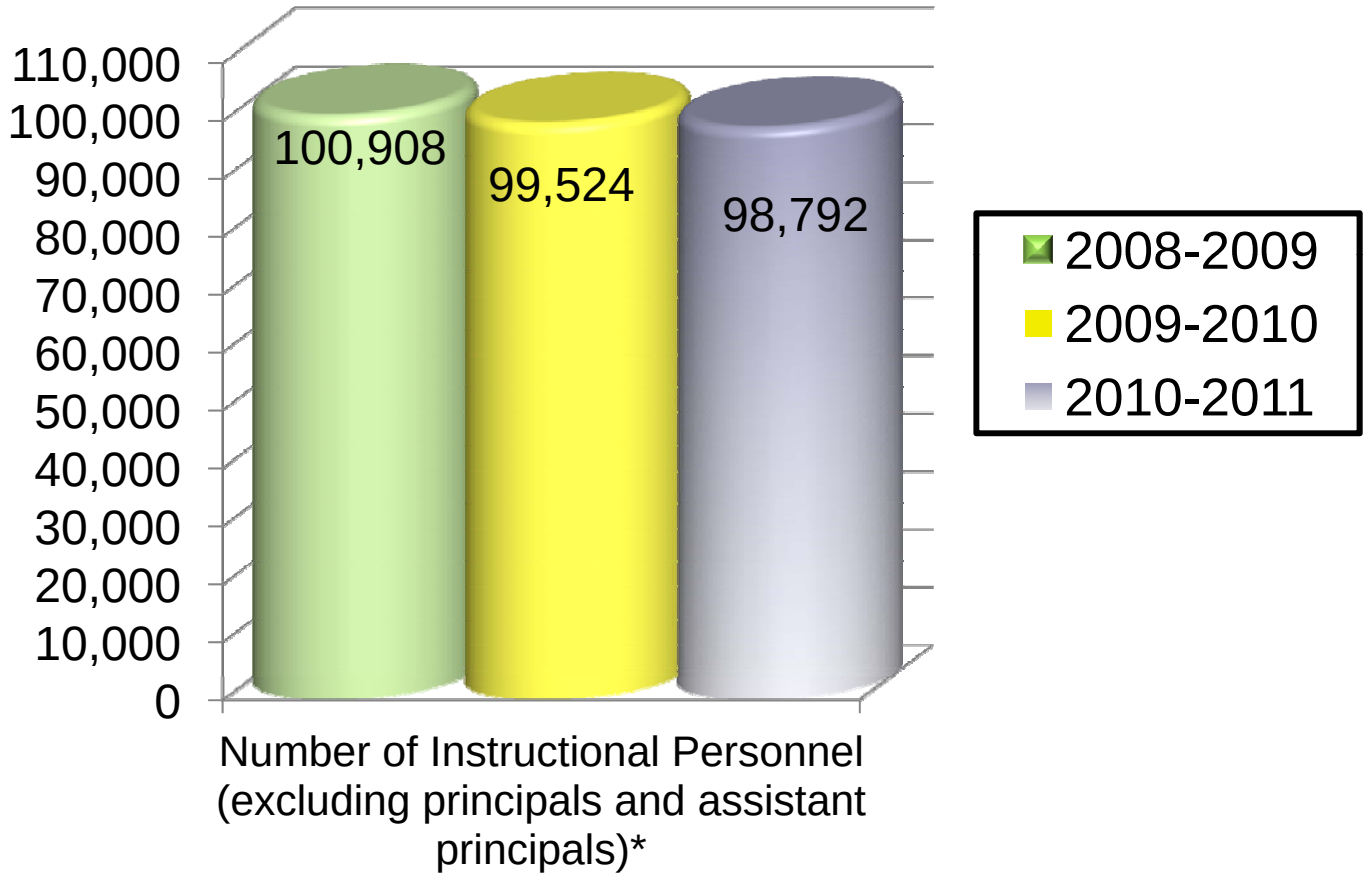
Profile of Virginia Public Schools' Instructional Personnel (Excluding Principals and Assistant Principals)

National Demographics: Number of Teachers and Students

- There are **3.2 million public school teachers** educating the nation's **49.4 million children** attending public PK-12 schools, according to the U.S. Department's National Center for Education Statistics.

[**Source**: C. Emily Feistritzer (with Stephen Griffin and Alice Linnajarvi), *Profile of Teachers in the U.S. 2011*, National Center for Education Information, 2011]

Instructional Personnel Employed in Virginia Public Schools (Excluding Principals and Assistant Principals)



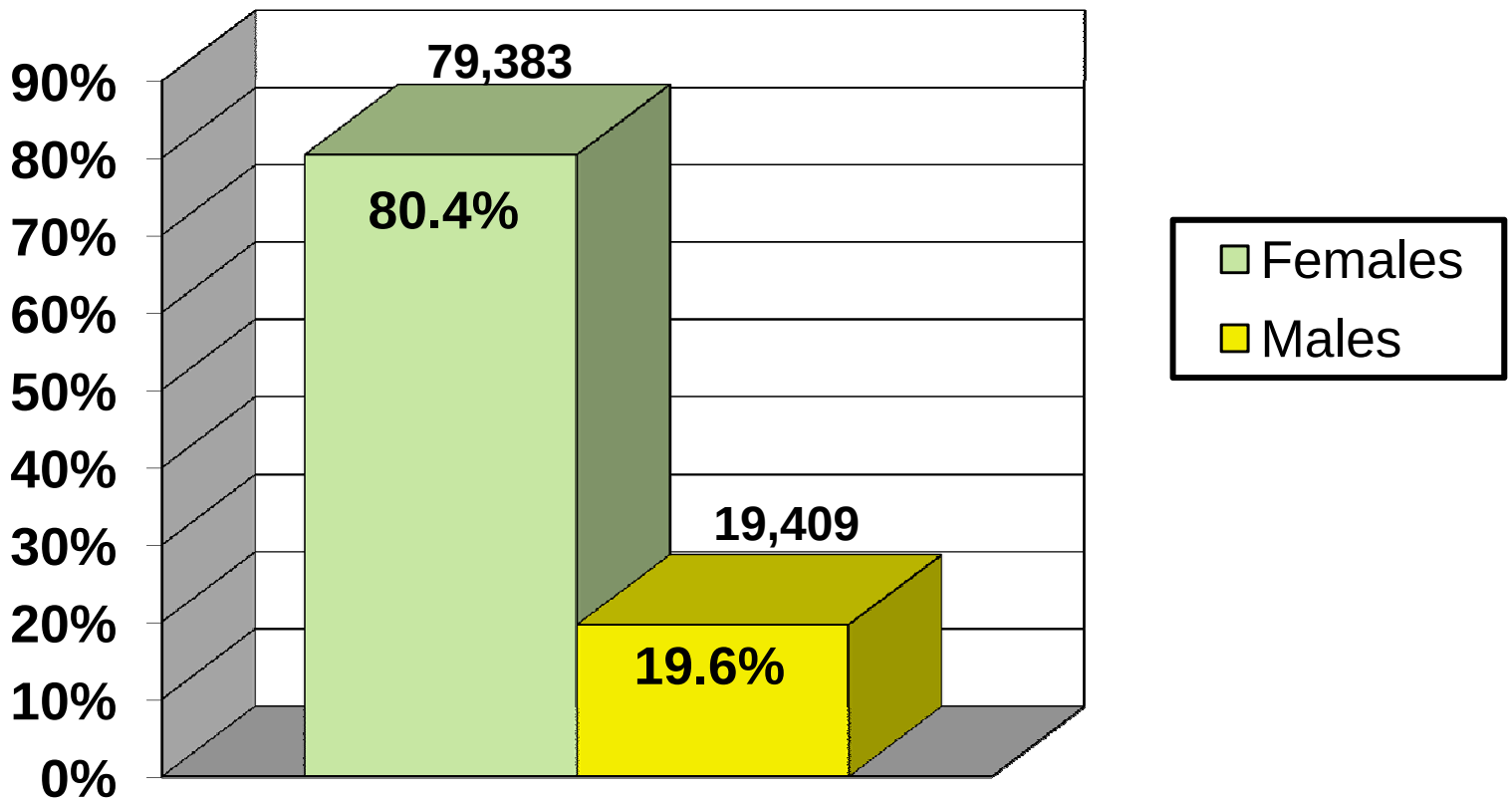
*Instructional personnel includes licensed teachers, library-media specialists, guidance counselors, etc.

National Demographics: Gender

- 84% of public school teachers are female. This is up from **82%** in 2005, **74%** in 1996, **71%** in 1990, and **69%** in 1986.

[**Source**: C. Emily Feistritzer (with Stephen Griffin and Alice Linnajarvi), *Profile of Teachers in the U.S. 2011*, National Center for Education Information, 2011]

Gender: Virginia Public Schools' Instructional Personnel (Excluding Principals and Assistant Principals): 2010-2011 School Year



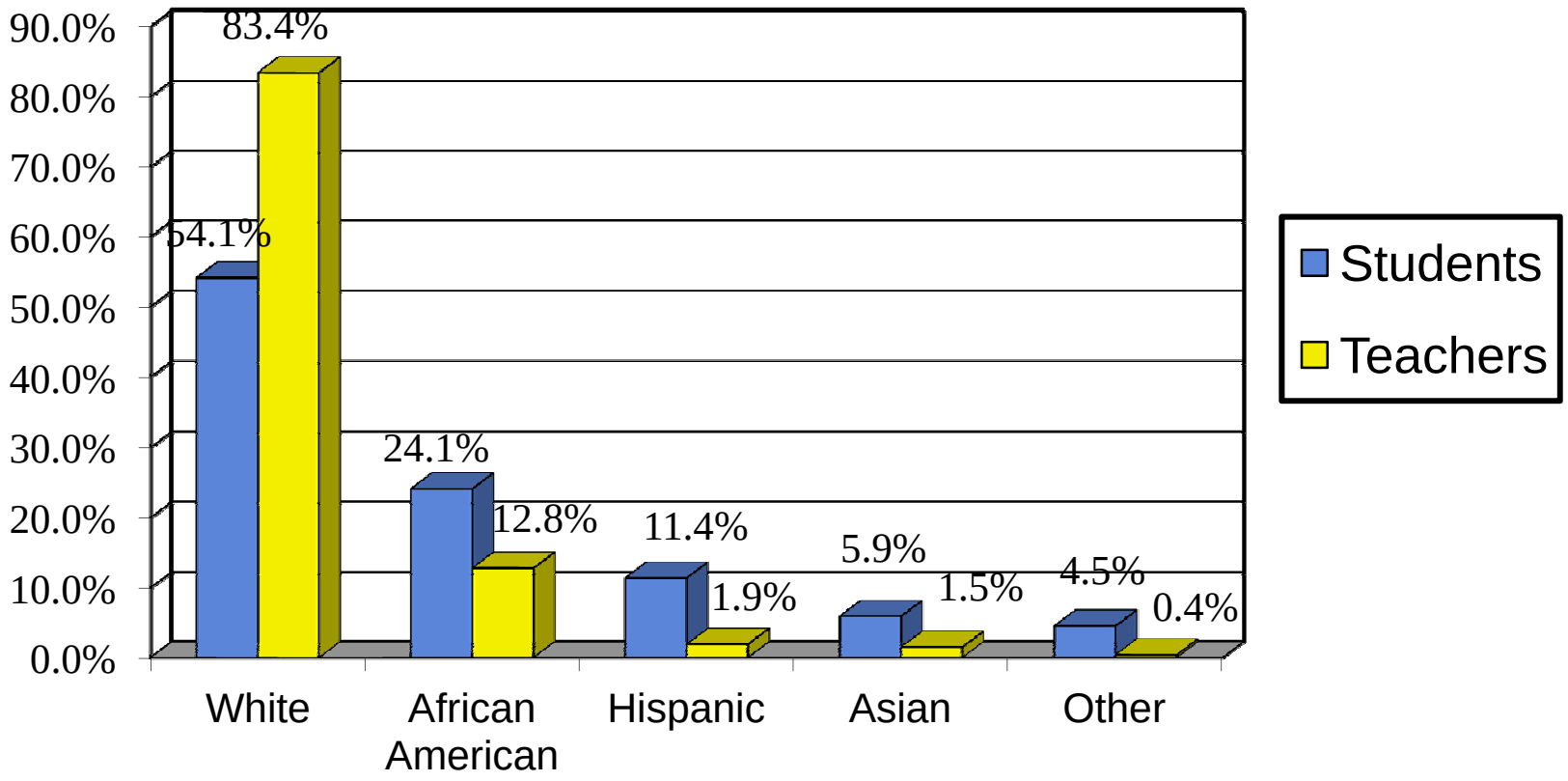
Gender of Instructional Personnel (excluding principals)

National Demographics: Race

- The proportion of K-12 teachers who are white has dropped from 91% in 1986 to 84% in 2011.

[**Source**: C. Emily Feistritzer (with Stephen Griffin and Alice Linnajarvi), *Profile of Teachers in the U.S. 2011*, National Center for Education Information, 2011]

Race/Ethnicity: Virginia Public Schools' Instructional Personnel (Excluding Principals and Assistant Principals) and Students: 2010-2011 School Year



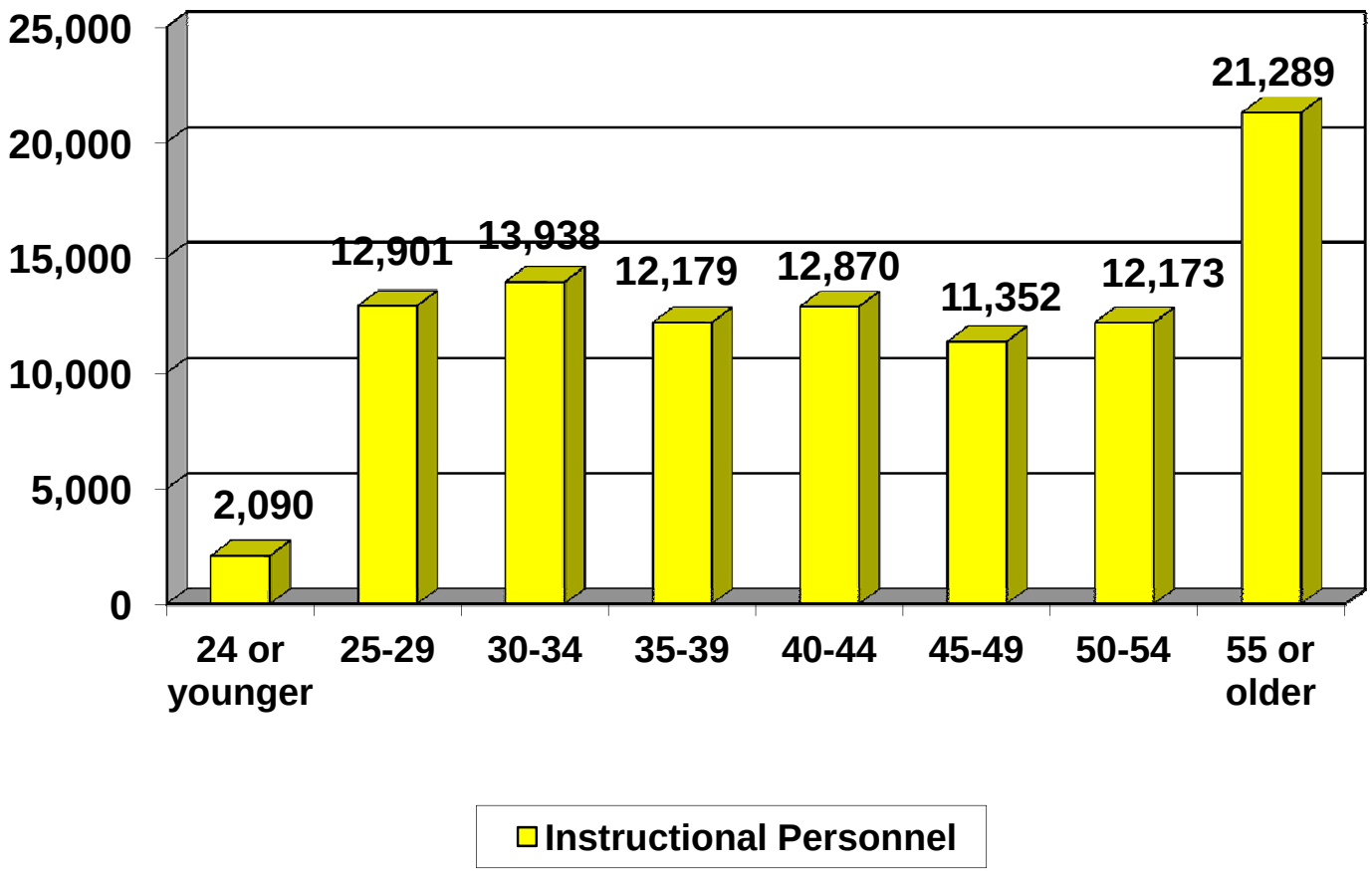
National Demographics: Age

- The proportion of teachers under 30 years-of-age rose dramatically from 2005 to 2011, while the proportion of teachers 50 and older dropped, reversing a trend toward an older teaching force that began in the 1990s.

- More than one in five (22%) teachers in 2011 was under the age of 30, compared with only 11% in 2005 and in 1996. The proportion of teachers 50 and older dropped from 42% in 2005 to 31% in 2011.

[**Source**: C. Emily Feistritzer (with Stephen Griffin and Alice Linnajarvi), *Profile of Teachers in the U.S. 2011*, National Center for Education Information, 2011]

Age: Virginia Public Schools' Instructional Personnel (Excluding Principals and Assistant Principals): 2010-2011 School Year



[The average years' teaching experience in 2010-11 was 12.7 years.]

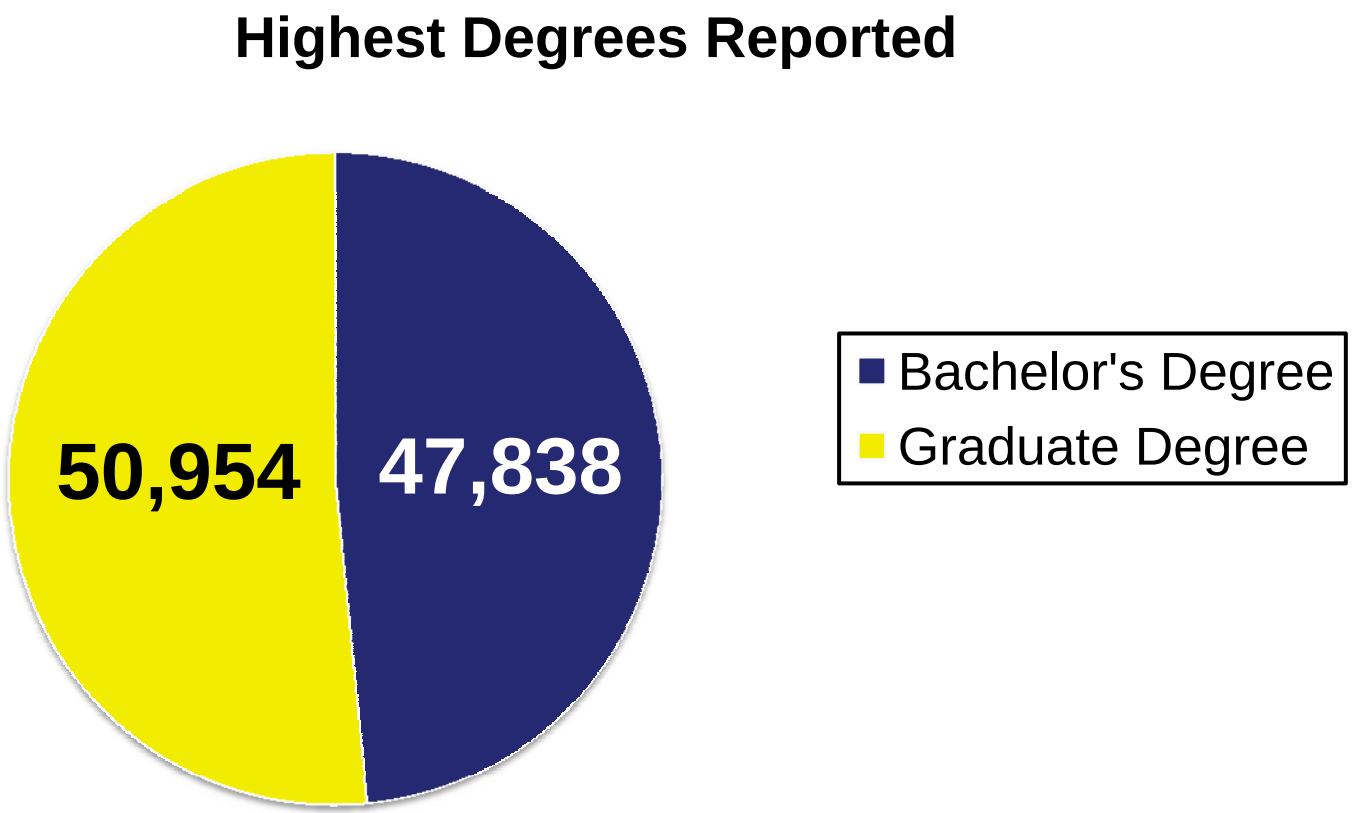
National Demographics: Degrees

- In 2005, a master's degree in education was the highest degree held by nearly half of the teaching force (47%); an additional 10% held a master's degree in a field other than education.

- In 2011, the proportion of the teaching force holding master's degrees in education as their highest degree was 43%; 12% held master's degrees in a field other than education.

[**Source**: C. Emily Feistritzer (with Stephen Griffin and Alice Linnajarvi), *Profile of Teachers in the U.S. 2011*, National Center for Education Information, 2011]

Highest Degrees Reported for Instructional Personnel (Excluding Principals and Assistant Principals) in Virginia: 2010-2011 School Year



Number of Provisional Licenses Held by Instructional Personnel (Excluding Principals and Assistant Principals) in the 2010-2011 School Year

3,320

- **NUMBER OF THREE-YEAR PROVISIONAL LICENSES**

1,235

- **NUMBER OF THREE-YEAR PROVISIONAL (SPECIAL EDUCATION) LICENSES**

242

- **NUMBER OF ONE-YEAR PROVISIONAL (CAREER SWITCHER) LICENSES**

Note: This slide shows the number of provisional licenses held by instructional personnel, not the number of provisional licenses issued in the 2010-2011 school year.

Number of Initial Licenses Issued: July 1, 2010, to June 30, 2011

Number of Initial Licenses Issued from July 1, 2010, to June 30, 2011

7,750

Number of Licenses Renewed: July 1, 2010, to June 30, 2011

Number of Licenses Renewed from July 1, 2010, to June 30, 2011

23,695

Highly Qualified Teachers

- States are accountable for implementing the *No Child Left Behind Act of 2001* (NCLB) law, including the goal of 100 percent highly qualified teachers in "core academic subjects."

- The term "core academic subjects" as defined in *No Child Left Behind* (NCLB) legislation, means English, reading or language arts, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography.

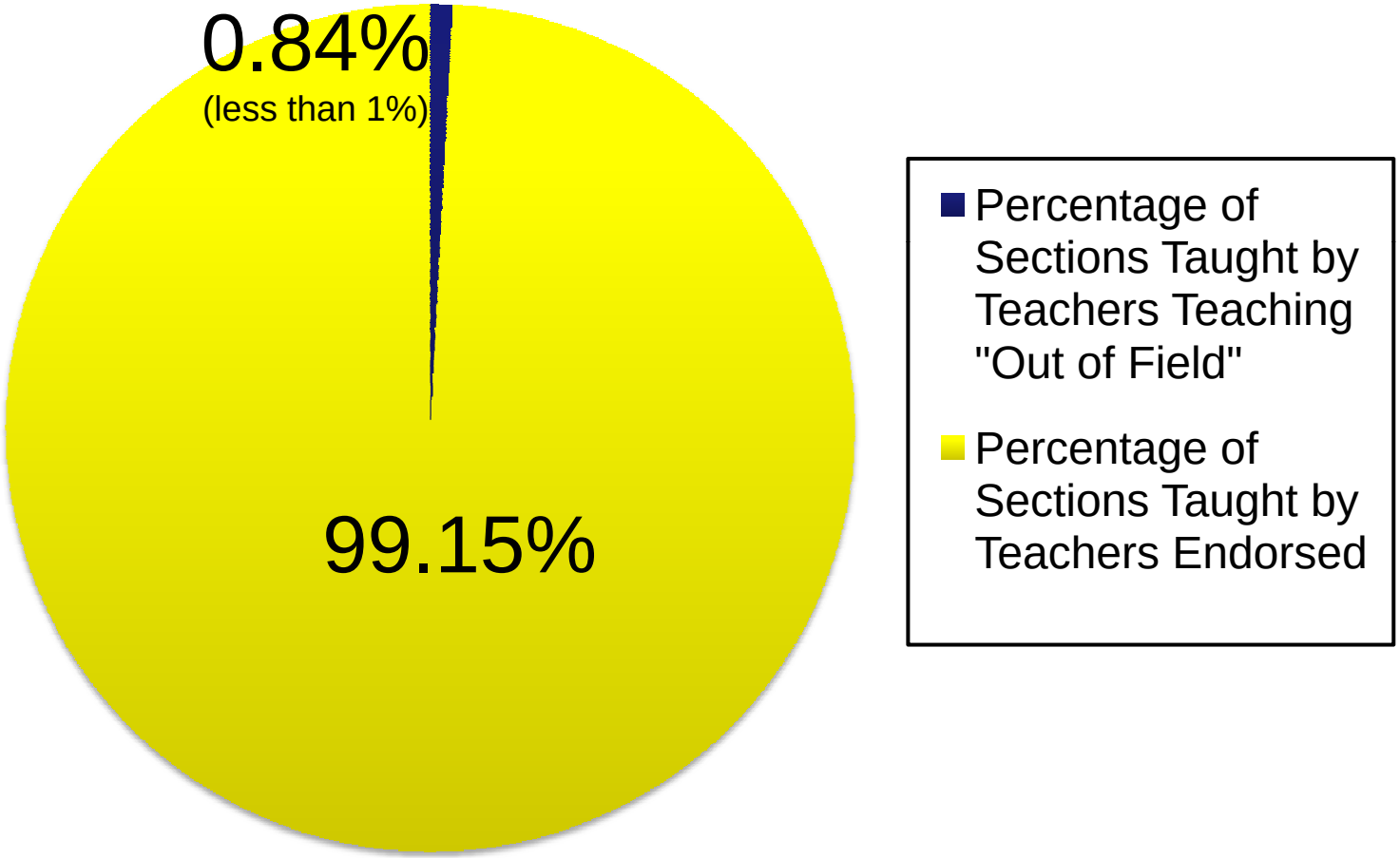
Highly Qualified Teachers

- "Highly qualified," as defined by the NCLB legislation means that the teacher:
  - Has obtained full state licensure as a teacher (**including certification obtained through alternative routes to certification**) or passed the state teacher licensing examination and holds a license to teach in the state;
  - Holds a minimum of a bachelor's degree; and
  - Has demonstrated subject matter competency in each of the academic subjects that the teacher teaches, in a manner determined by the state and in compliance with the *Elementary and Secondary Education Act (ESEA)*.

Percentage of "Highly Qualified" Teachers in Virginia

School Year	Percentage of Teachers Designated "Highly Qualified"
2002-2003 (Baseline)	83%
2006-2007	96.8%
2007-2008	97.9%
2008-2009	98.35%
2009-2010	98.87%
2010-2011	99.33%

Percentages of Sections Taught by Teachers Appropriately Endorsed and Sections Taught by Teachers Teaching "Out of Field" in Virginia: 2010-2011 School Year



Top Ten Assignments that Teachers are Teaching "Out of Field" in Virginia: 2010-2011 School Year

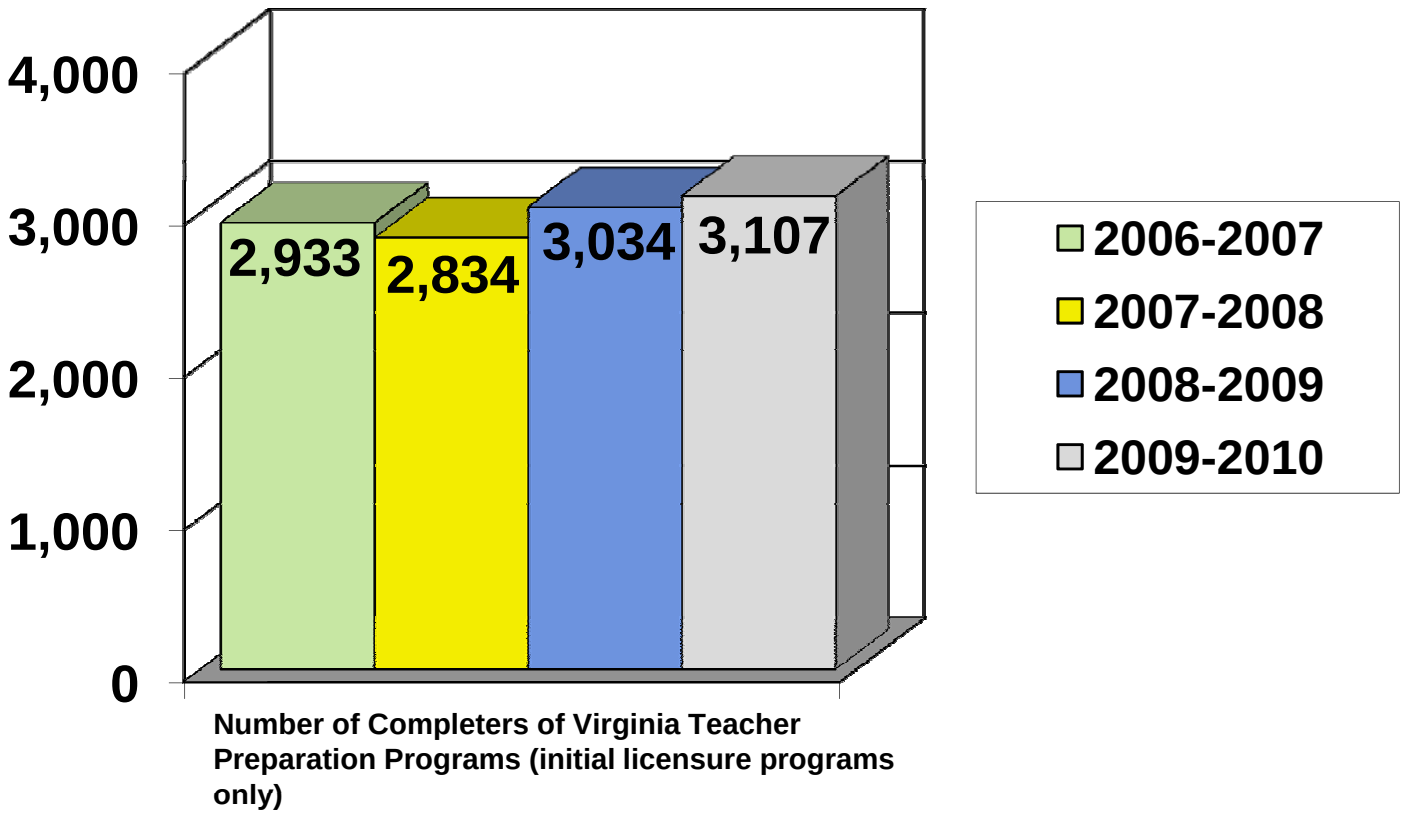
Assignment Description	Number of Sections Taught by Teachers Teaching "Out of Field"
Algebra I	**100**
Keyboarding – Middle	**74**
Physical Science Grade 8	**73**
Earth Science I	**66**
Specific Learning Disabilities	**61**
Geometry	**45**
Life Science Grade 7	**43**
English as a Second Language (Elem.)	**43**
Theatre I	**39**
World History and Geography II	**36**

Supply and Demand of Teachers

Critical Shortage Teaching Areas for Virginia 2011-2012

- Top 10 critical shortage teaching endorsement areas:
  - Special Education
  - Elementary Education preK-6
  - Middle Education Grades 6-8
  - Career and Technical Education
  - Mathematics Grades 6-12 (including Algebra I)
  - Science Grades 6-12
  - Foreign Languages preK-12
  - School Counselor preK-12
  - Health and Physical Education preK-12
  - English Grades 6-12

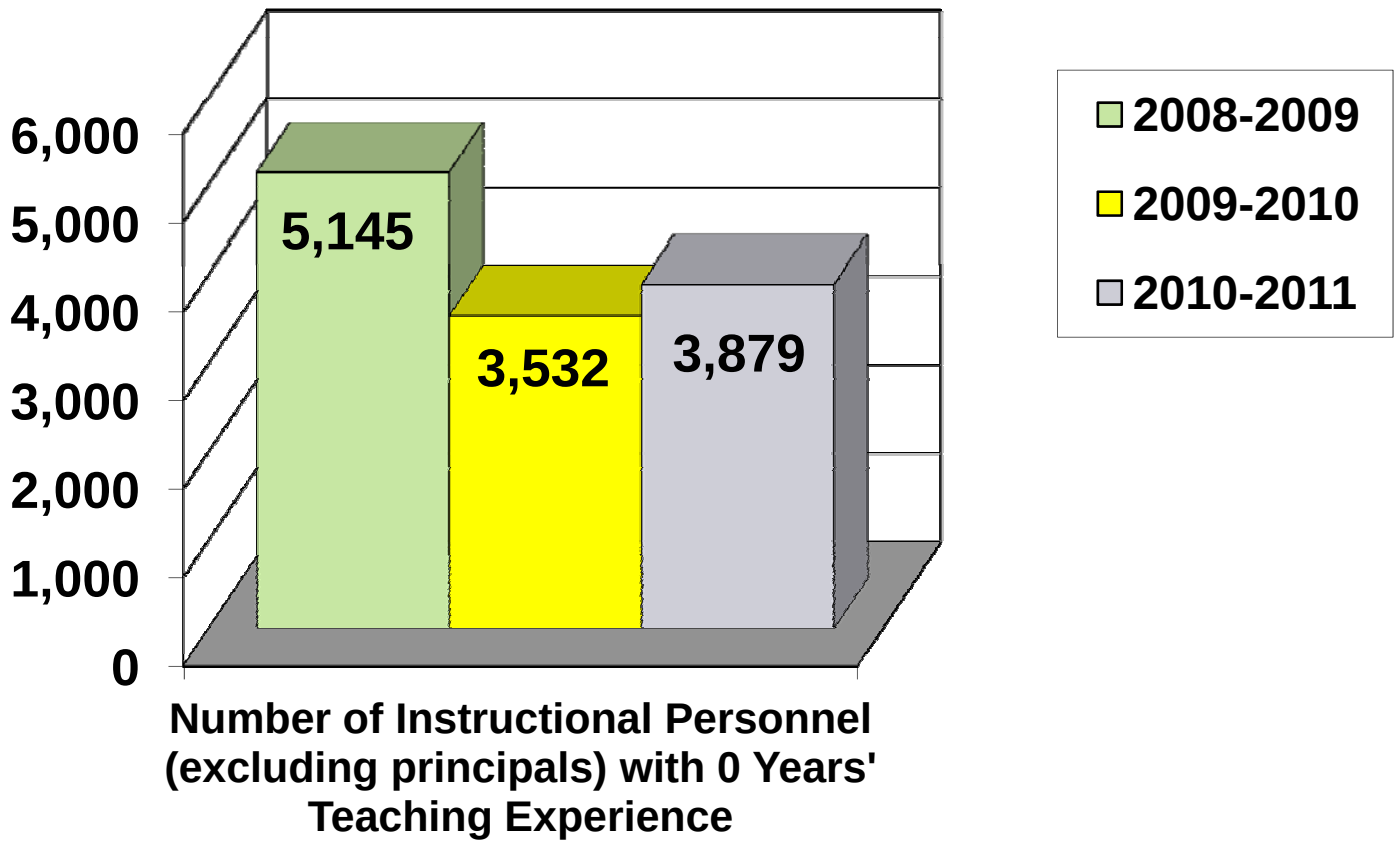
Number of Completers of Virginia Approved Teacher Preparation Programs (Initial Licensure Programs Only)



[Source: Title II Higher Education Act State Report]

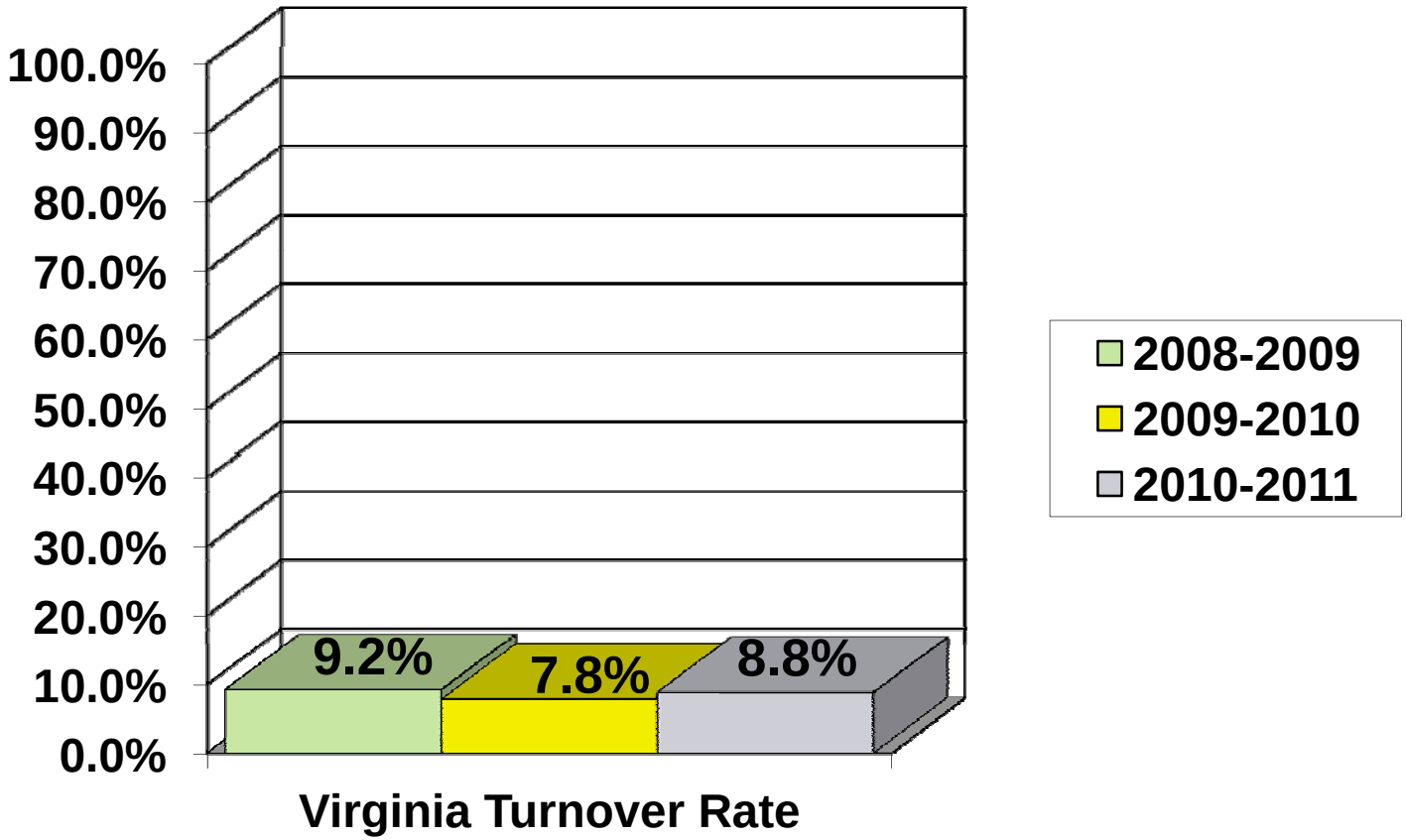
Number of New Instructional Personnel (Excluding Principals and Assistant Principals) Employed by Virginia School Divisions

New instructional personnel (excluding principals and assistant principals) are defined as having 0 years' teaching experience.



Teacher Turnover

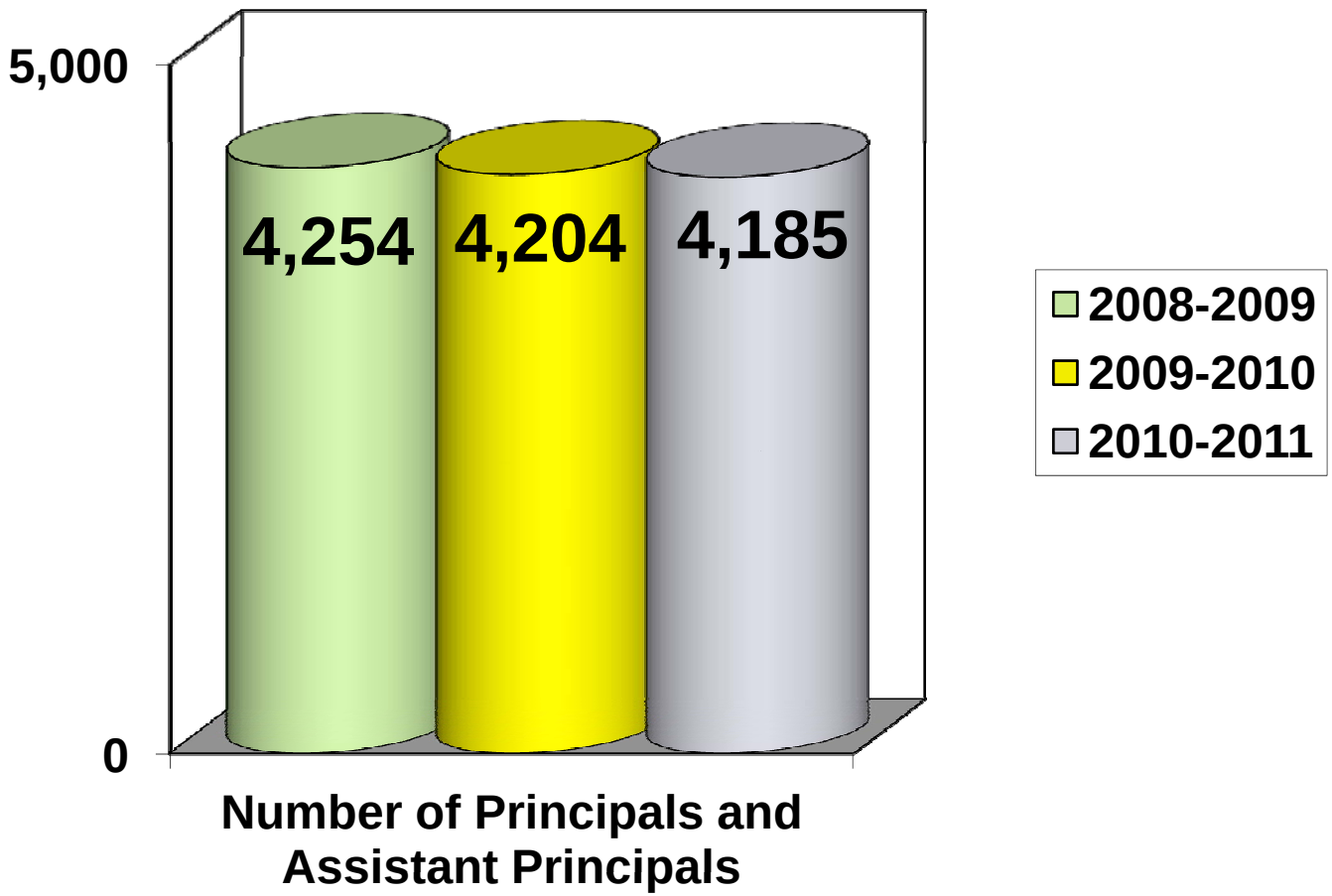
Virginia's Instructional Personnel (Excluding Principals and Assistant Principals) Turnover Rate



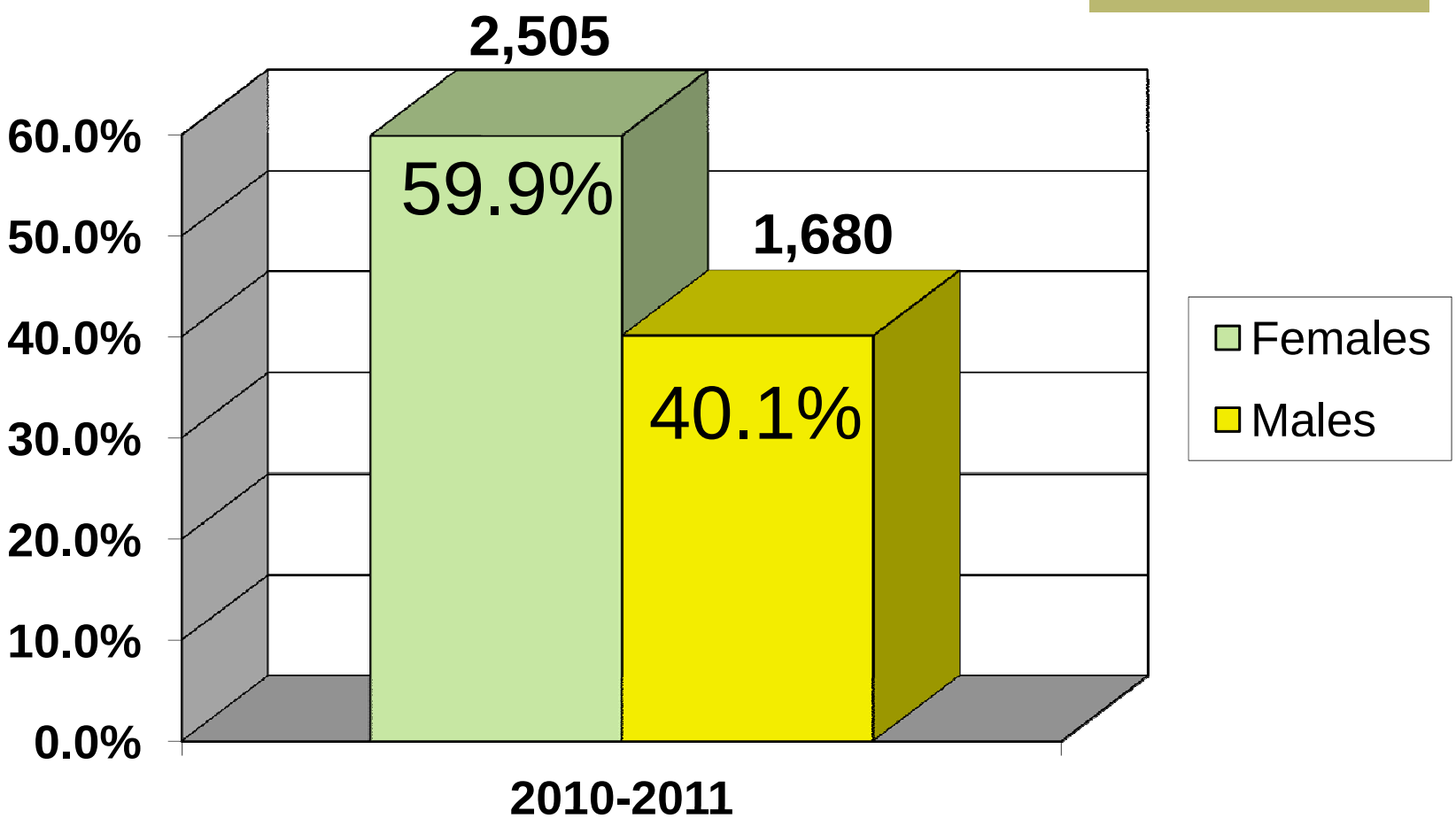
The percentages reflect the number of instructional personnel (excluding principals and assistant principals) who were employed the previous year but were not reported as employed the next school year in any Virginia school division.

Profile of Virginia Public Schools' Principals and Assistant Principals

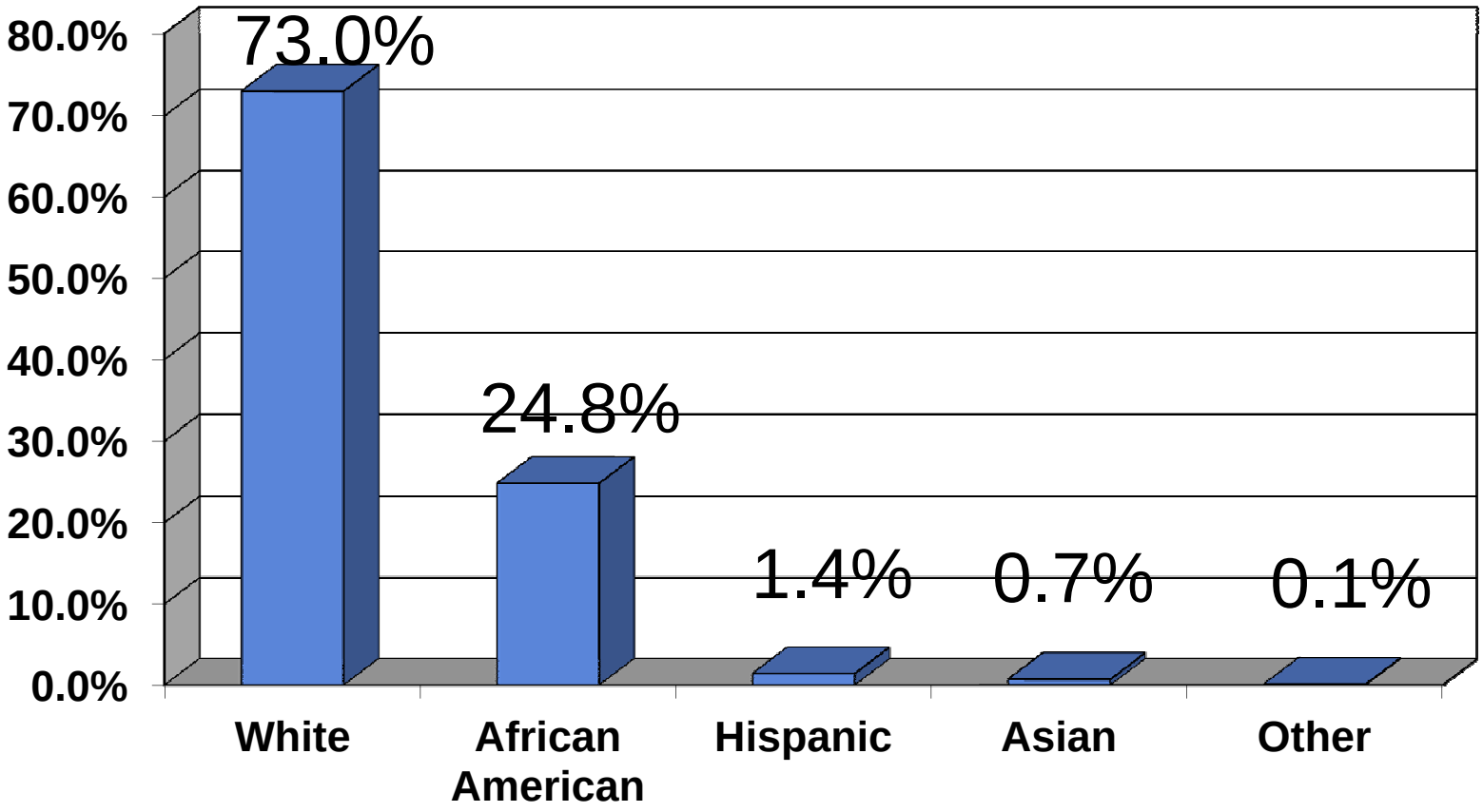
Principals and Assistant Principals Employed in Virginia Public Schools



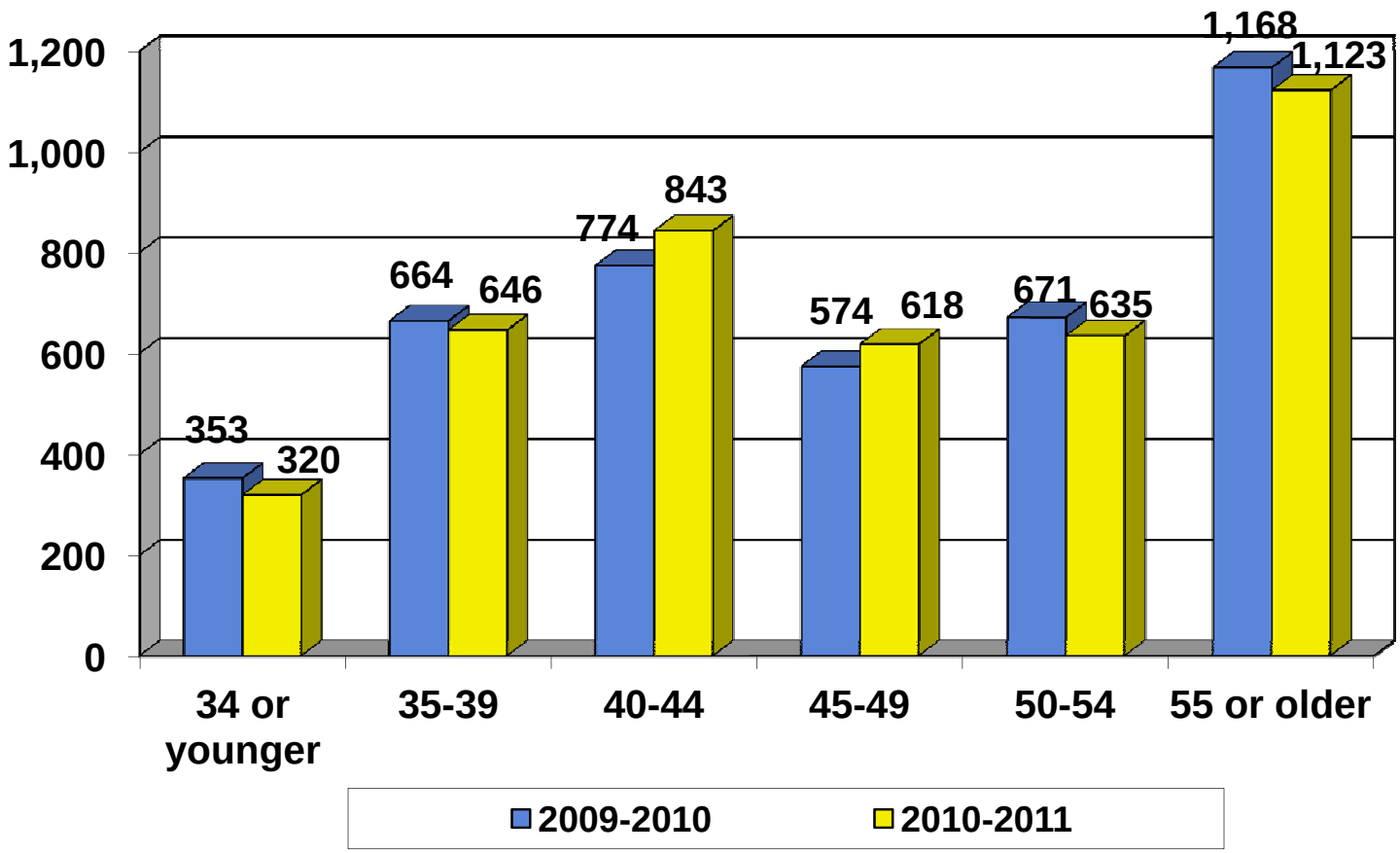
Gender: Principals and Assistant Principals in Virginia Public Schools: 2010-2011 School Year



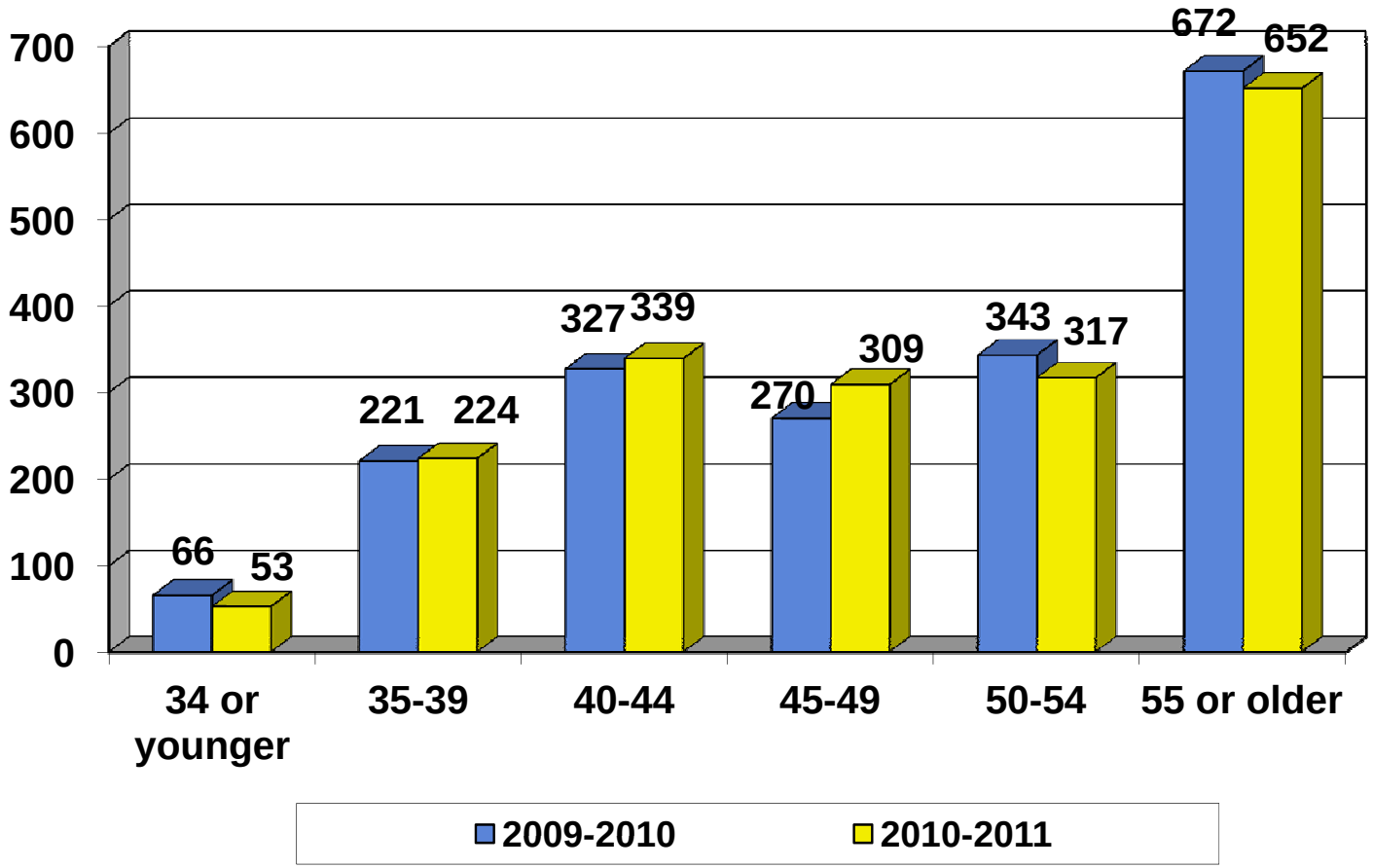
Race/Ethnicity: Virginia Public Schools' Principals and Assistant Principals: 2010-2011 School Year



Age: Virginia Public Schools' Principals and Assistant Principals



Age: Virginia Public Schools' Principals



Principal and Assistant Principal Turnover

Turnover: Principals and Assistant Principals

- Between school year 2009-10 and school year 2010-11, 448 principals and assistant principals (approximately 10.7%) left their administrative positions.

- Between school year 2009-10 and school year 2010-11, 41 principals and assistant principals transferred from one division to another division (approximately 1%).

Additional Facts: Administration and Supervision

- Number of instructional personnel employed by a school division in Virginia in school year 2010-2011 who held an "administrative" endorsement who were not assigned as an administrator: **2,348**

- A majority of Virginia principals and assistant principals **(74%)** earned their master's degrees from **Virginia** institutions of higher education.

Sources/References

- C. Emily Feistritzer (with Stephen Griffin and Alice Linnajarvi), *Profile of Teachers in the U.S. 2011*, National Center for Education Information, 2011
- Title II Higher Education Act State Report
- Instructional Personnel Reports, Virginia Department of Education

Questions:

- Mrs. Patty S. Pitts

  Assistant Superintendent for Teacher Education and Licensure

  Virginia Department of Education

  P. O. Box 2120

  Richmond, Virginia 23218-2120

  (804) 371-2522

Virginia Board of Education Agenda Item

Agenda Item: F **Date:** April 26, 2012

Title	Final Review of Financial Report on Literary Fund		
Presenter	Mr. Kent C. Dickey, Deputy Superintendent for Finance and Operations		
E-mail	Kent.Dickey@doe.virginia.gov	**Phone**	(804) 225-2025

Purpose of Presentation:
Action required by state or federal law or regulation.

Previous Review or Action:
No previous review or action.

Action Requested:
Final review: Action requested at this meeting.

Alignment with Board of Education Goals: Please indicate (X) all that apply:

	Goal 1: Expanded Opportunities to Learn
	Goal 2: Accountability of Student Learning
	Goal 3: Nurturing Young Learners
	Goal 4: Strong Literacy and Mathematics Skills
	Goal 5: Highly Qualified and Effective Teachers and Administrators
	Goal 6: Sound Policies for Student Success
X	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify:

Background Information and Statutory Authority:
Goal 7: The Literary Fund provides low-interest loans for new school construction and for additions or permanent improvements to existing schools to help provide students with a safe and secure environment in which to learn. In accordance with the provisions of the *Code of Virginia*, Chapter 10, Section 22.1-142, the Board of Education is responsible for the management of the Literary Fund. This report reflects the status of the Literary Fund, including the total principal, as well as cash, investments, and all short-/long-term loans.

> **§ 22.1-142. How Fund constituted; management.**
> There shall be set apart as a permanent and perpetual fund, to be known as the "Literary Fund," the present Literary Fund of the Commonwealth, donations to the Literary Fund, sums appropriated to the Literary Fund, all funds received by the State Treasurer and required to be deposited in the Literary Fund pursuant to Chapter 11.1 *(§ 55-210.1 et seq.)* of Title 55 and

> the proceeds of (i) all public lands donated by Congress for public school purposes, (ii) all escheated property, (iii) all waste and unappropriated lands, (iv) all property accruing to the Commonwealth by forfeiture, (v) all fines collected for offenses committed against the Commonwealth, and (vi) the annual interest on the Literary Fund. The Literary Fund shall be invested and managed by the Board of Education as prescribed by § 22.1-145.

Summary of Important Issues:
Attachment A reflects the financial position of the Literary Fund as of December 31, 2011. The information presented in this report reflects the commitments against the Literary Fund as of December 31, 2011.

Attachment B reflects the currently active projects funded through the Literary Fund as of December 31, 2011.

Attachment C represents the projects that have closed and for which full payment from the Literary Fund has been made since the last Board meeting.

There is no agenda item related to applications for Literary Fund Loans as no new applications have been submitted for review by the Department since the January 2012 Board meeting.

Impact on Fiscal and Human Resources:
As funds become available in the Literary Fund, recommendations will be made to the Board for funding priority projects and those projects at the top of the First Priority Waiting List, with the cash balance reduced as loan requests are processed.

Timetable for Further Review/Action:
The Department staff will prepare a quarterly financial report on this fund for Board approval. Information also will be presented each quarter, as part of another agenda item, regarding those projects on the two waiting lists.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends approval of the financial report (including all statements) on the status of the Literary Fund as of December 31, 2011.

STATEMENT OF THE FINANCIAL POSITION OF THE LITERARY FUND
(as of December 31, 2011)

Line Reference		December 31, 2011	September 30, 2011	Increase/(Decrease)
	PRINCIPAL BALANCE			
1.	Cash and investments maintained by State Treasurer	64,889,626	41,086,711	23,802,915
2.	Temporary loans received from local school boards (secured by promissory notes)	-	-	-
3.	Long-term loans in custody of Virginia Public School Authority (VPSA)	244,286,506	251,610,214	(7,323,708)
4.	Total Principal of Literary Fund	**309,176,131**	**292,696,925**	16,479,206
	CURRENT COMMITMENTS AGAINST LITERARY FUND REVENUE			
5.	Balance due on active projects (Attachment B)	2,692,676	2,922,869	(230,193)
6.	Debt service on VPSA equipment notes[1]	59,406,080	62,807,678	(3,401,598)
7.	Interest rate subsidy[2]	-	-	-
8.	Transfer for Teacher Retirement[3]	130,086,428	130,086,428	-
9.	Required Carry Forward Balance	60,816,650	60,816,650	-
10.	Total of Literary Fund Commitments	**253,001,834**	**256,633,625**	(3,631,791)
	FUNDS AVAILABLE FOR CURRENT COMMITMENTS AND NEW LOANS			
11.	Cash and investments maintained by State Treasurer (Line 1)	64,889,626	41,086,711	
12.	Less commitments against Literary Fund Revenues (Line 10)	(253,001,834)	(256,633,625)	
13.	**Balance Available to Fund New Projects Currently on Waiting List or (Additional Funds Needed to Meet Commitments)**	**(188,112,208)**	**(215,546,914)**	

[1]Chapter 890 requires $62,807,678 to be set aside for debt service on VPSA equipment notes in fiscal year 2012. [Fiscal year-to-date payments of $3,401,598 reflected in line 6.]

[2]Chapter 890 authorizes no funds set aside for an interest rate subsidy program in fiscal year 2012.

[3]Chapter 890 requires $130,086,428 to be transferred from the Literary Fund to pay teacher retirement in fiscal year 2012

April 2012

ACTIVE LITERARY FUND PROJECTS (as of December 31, 2011)

Application Number	School Division	School	Release Date	Funds Approved for Release	Actual Funds Disbursed	Balance Due	Percent Drawn
Literary Loans							
	No Projects						
Subsidy Grants							
11151	Nottoway County	Blackstone Primary	2004 Subsidy	54,632	(40,393)	14,239	73.94%
11150	Nottoway County	Crewe Primary	2004 Subsidy	191,790	(161,572)	30,218	84.24%
11181	Grayson County	Grayson Middle	2005 Subsidy	138,831	-	138,831	0.00%
11210	Halifax County	Halifax Middle	2006 Subsidy	1,331,227	(1,097,125)	234,102	82.41%
11220	Halifax County	South Boston Elementary	2006 Subsidy	641,739	(227,676)	414,063	35.48%
11212	Washington County	Abingdon Elementary	2007 Subsidy	201,358	(6,500)	194,858	3.23%
11213	Washington County	High Point Elementary	2007 Subsidy	154,739	-	154,739	0.00%
11214	Washington County	Valley Institute Elementary	2007 Subsidy	123,197	-	123,197	0.00%
11215	Washington County	E. B. Stanley Middle	2007 Subsidy	149,896	-	149,896	0.00%
11255	Roanoke City	William Fleming High	2008 Subsidy	1,006,140	(27,692)	978,447	2.75%
11296	Tazewell County	North Tazewell Elementary	2008 Subsidy	324,368	(323,208)	1,160	99.64%
11297	Tazewell County	Cedar Bluff Elementary	2008 Subsidy	327,724	(68,798)	258,926	20.99%
				$ 4,645,641	**$ (1,952,965)**	**$ 2,692,676**	

April 2012

LITERARY FUND PROJECT REIMBURSEMENTS COMPLETED (as of December 31, 2011)

Application Number	School Division	School	Release Date	Funds Approved for Release	Actual Funds Disbursed	Funds Returned	Balance Due	Percent Drawn

NO PROJECT REIMBURSEMENTS

April 2012

Virginia Board of Education Agenda Item

Agenda Item: G **Date:** April 26, 2012

Title	Final Review of Recommendations Concerning Literary Fund Applications Approved for Release of Funds or Placement on a Waiting List		
Presenter	Mr. Kent C. Dickey, Deputy Superintendent for Finance and Operations		
E-mail	Kent.Dickey@doe.virginia.gov	**Phone**	(804) 225-2025

Purpose of Presentation:
Action required by state or federal law or regulation.

Previous Review or Action:
No previous review or action.

Action Requested:
Final review: Action requested at this meeting.

Alignment with Board of Education Goals: Please indicate (X) all that apply:

	Goal 1: Expanded Opportunities to Learn
	Goal 2: Accountability of Student Learning
	Goal 3: Nurturing Young Learners
	Goal 4: Strong Literacy and Mathematics Skills
	Goal 5: Highly Qualified and Effective Teachers and Administrators
	Goal 6: Sound Policies for Student Success
X	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify:

Background Information and Statutory Authority:
Goal 7: School divisions that have successfully completed the application process for a low-interest loan from the Literary Fund for new construction or renovation are placed on one of two Waiting Lists. The Literary Fund regulations of the Board of Education establish two priorities for the Literary Fund Waiting Lists. These priorities are as follows:

Priority 1: Applications from localities having a composite index less than 0.6000 and indebtedness (including the application considered for release of funds) less than $20 million to the Literary Fund (Attachment A).

Priority 2: Applications from localities having a composite index of 0.6000 or above or an indebtedness (including the application considered for release of funds) of $20 million or greater to the Literary Fund (Attachment B).

Attachment C lists the projects that have been removed from the First Priority Waiting List.

Attachment D identifies the Literary Fund applications that are available for release.

Attachment E is the Board of Education's current Approved Application List. This attachment identifies the Literary Fund applications that are approved as to form but are awaiting other required information to be submitted to the Department. These projects are not included on either waiting list and are not recommended for funding at this time.

Summary of Important Issues:
To the extent funds are available, a recommendation for initial release of funds is presented for projects currently on the First Priority Waiting List or otherwise eligible for priority funding. To the extent funds are not available, new requests for the initial release of Literary Funds cannot be approved. As a result, such requests must be deferred and placed on either the First or Second Priority Waiting List in accordance with the Literary Fund regulations.

This item consists of two elements that require action by the Board of Education. These elements are:

1. One new project (Appalachia Elementary School – Wise County), totaling $1,500,000 and listed on Attachment A, is eligible for placement on the First Priority Waiting List at Priority 36.

2. Richmond County submitted a letter dated March 27, 2012, requesting that its Rappahannock High School project in the amount of $250,000 be removed from the First Priority Waiting List. Funding was acquired from other sources.

Impact on Fiscal and Human Resources:
Current Board policy provides that, upon initial release of funds, Literary Fund cash is reduced in the total amount of the approved loan to assure that cash is available as required for project completion. The disbursement of funds is based on actual invoices or other evidence of bills due and payable from the Literary Fund.

Timetable for Further Review/Action:
The staff will prepare items for the Board on this action as needed. Based on the availability of funds, initial release of funds will be made or projects will be deferred and placed on the Waiting Lists.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education approve the action described in these two elements listed under "Summary of Important Issues."

VIRGINIA BOARD OF EDUCATION - LITERARY FUND FIRST PRIORITY WAITING LIST

The following projects have been placed or are recommended for placement on the First Priority Waiting List with the actions as indicated in the last column. Projects recommended for action at this meeting are presented in italics.

Priority	Date Placed on Waiting List	School Division	School	Interest Rate	Amount	Cumulative Total	Action/Status
1	July 2007	Pulaski County	Riverlawn Elementary School	2%	7,500,000	7,500,000	Funding Deferred
2	October 2007	Manassas Park City	Cougar Upper Elementary School	3%	7,500,000	15,000,000	Funding Deferred
3	October 2007	Covington City	Jeter Watson Intermediate School	2%	7,500,000	22,500,000	Funding Deferred
4	October 2007	Covington City	Edgemont Primary School	2%	7,500,000	30,000,000	Funding Deferred
5	October 2007	Prince George County	North Elementary School	2%	7,500,000	37,500,000	Funding Deferred
6	July 2008	Petersburg City	Walnut Hill Elementary School	2%	5,818,691	43,318,691	Funding Deferred
7	July 2008	Norton City	Norton Elementary School	3%	7,500,000	50,818,691	Funding Deferred
8	July 2008	Northampton County	Northampton High School	3%	7,500,000	58,318,691	Funding Deferred
9	July 2008	Lee County	Dryden Elementary School	2%	2,300,000	60,618,691	Funding Deferred
10	July 2008	Grayson County	West Grayson Elementary School	2%	7,500,000	68,118,691	Funding Deferred
11	October 2008	Pittsylvania County	Tunstall High School	2%	7,500,000	75,618,691	Funding Deferred
12	October 2008	Pittsylvania County	Chatham High School	2%	7,500,000	83,118,691	Funding Deferred
13	October 2008	Wythe County	Rural Retreat High School	2%	7,500,000	90,618,691	Funding Deferred
14	October 2008	Wythe County	Rural Retreat Middle School	2%	2,600,000	93,218,691	Funding Deferred
15	January 2009	Warren County	Luray Avenue Middle School	3%	7,500,000	100,718,691	Funding Deferred
16	January 2009	Grayson County	Fries Elementary School	2%	7,500,000	108,218,691	Funding Deferred
17	April 2009	Giles County	Giles County Technology Center	2%	7,500,000	115,718,691	Funding Deferred
18	April 2009	Giles County	Eastern Elementary/Middle School	2%	7,500,000	123,218,691	Funding Deferred
19	April 2009	Nottoway County	Blackstone Primary School	2%	666,667	123,885,358	Funding Deferred
20	April 2009	Nottoway County	Crewe Primary School	2%	666,667	124,552,025	Funding Deferred
21	April 2009	Nottoway County	Burkeville Elementary School	2%	666,666	125,218,691	Funding Deferred
22	April 2009	Fluvanna County[1]	Fluvanna County High School	3%	2,670,000	127,888,691	Funding Deferred
23	July 2009	Virginia Beach City	Great Neck Middle School	3%	7,500,000	135,388,691	Funding Deferred
24	October 2009	Washington County[2]	Patrick Henry High School	3%	404,574	135,793,265	Funding Deferred
25	October 2009	Washington County[2]	Meadowview Elementary School	3%	468,707	136,261,972	Funding Deferred
26	October 2009	Washington County[2]	Wallace Middle School	3%	72,181	136,334,153	Funding Deferred
27	October 2009	Washington County[2]	Glade Spring Middle School	3%	510,960	136,845,113	Funding Deferred
28	October 2009	Washington County[2]	William N. Neff Center	3%	1,183,651	138,028,764	Funding Deferred
29	October 2010	Buckingham County	Dillwyn Lower Elementary School	2%	7,500,000	145,528,764	Funding Deferred
30	October 2010	Buckingham County	Dillwyn Upper Elementary School	2%	7,500,000	153,028,764	Funding Deferred

VIRGINIA BOARD OF EDUCATION - LITERARY FUND FIRST PRIORITY WAITING LIST

The following projects have been placed or are recommended for placement on the First Priority Waiting List with the actions as indicated in the last column. Projects recommended for action at this meeting are presented in italics.

Priority	Date Placed on Waiting List	School Division	School	Interest Rate	Amount	Cumulative Total	Action/Status
31	October 2011	Richmond County	Rappahannock High School	3%	7,500,000	160,528,764	Funding Deferred
32	October 2011	Caroline County	Bowling Green Elementary School	3%	3,000,000	163,528,764	Funding Deferred
33	October 2011	Smyth County	New Elementary School	2%	7,500,000	171,028,764	Funding Deferred
34	October 2011	Smyth County	Marion Primary School	2%	5,000,000	176,028,764	Funding Deferred
35	January 2012	Sussex County	Sussex Central Elementary School	3%	5,000,000	181,028,764	Funding Deferred
New projects to be added with funding deferred until funds are approved for release by separate action of the Board of Education							
36	*April 2012*	*Wise County*	*Appalachia Elementary School*	*2%*	*1,500,000*	*182,528,764*	*Funding Deferred*

[1]Literary Fund application amount reduced by the amount that was funded with the issuance of Series 2009-1 VPSA/Qualified School Construction Bonds on November 13, 2009.

[2]Literary Fund application amount reduced by the amount that was funded with the issuance of Series 2010-1 VPSA/Qualified School Construction Bonds on June 28, 2010.

April 2012

VIRGINIA BOARD OF EDUCATION - LITERARY FUND SECOND PRIORITY WAITING LIST

The following projects have been placed or are recommended for placement on the Second Priority Waiting List with the actions as indicated in the last column. Projects recommended for action at this meeting are presented in italics.

Priority	Date Placed on Waiting List	School Division	School	Interest Rate	Amount	Cumulative Total	Action/Status	Comments
1	October 2008	Pittsylvania County	Dan River High School	2%	7,500,000	7,500,000	Funding Deferred	
2	October 2008	Pittsylvania County	Gretna High School	2%	7,500,000	15,000,000	Funding Deferred	

VIRGINIA BOARD OF EDUCATION - REMOVAL FROM FIRST PRIORITY WAITING LIST

The following projects have been removed from the First Priority Waiting List with the actions as indicated in the last column.

Date Placed on Waiting List	School Division	School	Interest Rate	Amount	Cumulative Total	Action/Status
January 2009	Richmond County	Rappahannock High School	3%	250,000	250,000	Application withdrawn; funding was acquired from other sources

VIRGINIA BOARD OF EDUCATION - RELEASE OF LITERARY FUNDS

It is recommended that Literary Funds be released for the following projects on the First Priority Waiting List.

Date Placed on Waiting List	School Division	School	Interest Rate	Amount	Cumulative Total

NO PROJECTS

April 2012

APPROVED APPLICATION LIST[1]

Priority	Date Placed on Application List[2]	School Division	School	Interest Rate	Application Amount	Cumulative Total	Action/Status
1	July 2011	Isle of Wight County	Windsor Middle School	3%	7,500,000	7,500,000	Pending receipt of plans
2	July 2011	Wise County	Union High School	2%	7,500,000	15,000,000	Pending receipt of plans
3	July 2011	Wise County	Central High School	2%	7,500,000	22,500,000	Pending receipt of plans
4	July 2011	Wise County	Eastside High School	2%	7,500,000	30,000,000	Pending receipt of plans
5	July 2011	Wise County	Appalachia Elementary School	2%	1,500,000	31,500,000	Pending receipt of plans
6	October 2011	Town of West Point	West Point Middle/High School	2%	3,320,985	34,820,985	Pending receipt of plans
7	October 2011	Town of West Point	West Point Elementary School	2%	2,390,440	37,211,425	Pending receipt of plans
8	January 2012	Dickenson County	Combined Middle/High School	2%	7,500,000	44,711,425	Pending receipt of plans
9	January 2012	Dickenson County	Sandlick/Clinchco Area Elementary School	2%	7,500,000	52,211,425	Pending receipt of plans

New projects to be added to the approved application list:

NO PROJECTS

Notes:

[1] Reflects only those applications not on waiting lists.

[2] Per 8 VAC20-100-90, applications which remain on the approved application list for three years shall be removed from the list.

April 2012

Virginia Board of Education Agenda Item

Agenda Item: H **Date:** April 26, 2012

Title	First Review of a Notice of Intended Regulatory Action (NOIRA) to Promulgate Regulations Revising the *Regulations Establishing the Standards for Accrediting Public Schools in Virginia* (8 VAC 20-131) to Include Standards for the Accreditation of Public Virtual Schools Operating Under the Authority of the Local School Boards		
Presenter	Ms. Anne D. Wescott, Assistant Superintendent for Policy and Communications		
E-mail	Anne.Wescott@doe.virginia.gov	**Phone**	(804) 225-2403

Purpose of Presentation:
Action required by state or federal law or regulation.

Previous Review or Action:
No previous review or action.

Action Requested:
Action will be requested at a future meeting. Specify anticipated date below:
Date: May 24, 2012.
Action: Final review and approval.

Alignment with Board of Education Goals: Please indicate (X) all that apply:

X	Goal 1: Expanded Opportunities to Learn
X	Goal 2: Accountability of Student Learning
	Goal 3: Nurturing Young Learners
	Goal 4: Strong Literacy and Mathematics Skills
	Goal 5: Highly Qualified and Effective Teachers and Administrators
X	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify:

Background Information and Statutory Authority:
This item addresses three of the Board of Education's goals. The regulations governing full-time virtual schools would expand opportunities to learn by setting forth the expectations for a virtual school as an option for students and school divisions. In promulgating these regulations, the Board would establish the policies and standards necessary to ensure accountability of student learning in virtual schools. Finally, the regulations would provide the Board with the opportunity to develop and implement sound policies for student success in a virtual setting.

House Bill 1215 (R.P. Bell) was approved during the 2012 General Assembly Session and has been signed by the Governor. The legislation becomes effective July 1, 2012. As amended by that bill, §

22.1-253.13:3.A of the *Code of Virginia* (the Standards of Quality) will state:

> The Board of Education shall promulgate regulations establishing standards for accreditation of public virtual schools under the authority of the local school board that enroll students full time.

The intent of this legislation is to address situations where local school boards could establish a virtual public school, with all students taking coursework virtually, rather than in a traditional "brick and mortar" environment. The Board's *Regulations Establishing the Standards for Accrediting Public Schools in Virginia* (SOA) are designed to ensure that an effective educational program is established and maintained in Virginia's public schools. These regulations are applicable to all public schools in Virginia and are geared to the traditional "brick and mortar" public school. Consequently, the regulations do not specifically address differences in service delivery that exist between a "brick and mortar" public school and a virtual public school that enrolls students full-time.

SOA standards, such as those related to health and physical education, library media, staffing requirements, hours of instruction, extracurricular activities, and school facilities and safety, need to be examined for virtual schools and for appropriate service delivery in a full-time virtual environment. Currently, the Board may grant waivers of those sections of the SOA that may not be appropriate, or may be inapplicable, for a virtual school. Carroll County Public Schools has already approached the Board about waivers from certain SOA requirements for its Virginia Virtual Academy, which enrolls students on a full-time basis. Once these regulations are promulgated, school divisions would no longer be required to request waivers of those regulations that would not be applicable to virtual schools. In addition, the Board may determine that there are additional, or alternate, requirements that are needed to ensure the accountability of virtual schools.

As the options available to Virginia's public school students through virtual learning programs continue to expand, students enrolled in public schools may be able to take all coursework virtually and may not attend traditional "brick and mortar" schools at all. Therefore, the Board must establish standards governing public virtual schools that will maintain a level of student achievement commensurate with high-quality instruction delivered in traditional "brick and mortar" schools.

Summary of Important Issues:
Per 8 VAC 20-131-10 of the SOA, the accreditation standards:

1. Provide an essential foundation of educational programs of high quality in all schools for all students.
2. Encourage continuous appraisal and improvement of the school program for the purpose of raising student achievement.
3. Foster public confidence.
4. Assure recognition of Virginia's public schools by other institutions of learning.
5. Establish a means of determining the effectiveness of public schools.

The amendment of these regulations, as prescribed in House Bill 1215, will assure that the SOA requirements will address instructional service delivery for both "brick and mortar" and virtual schools, further ensuring educational quality for Virginia's public school students.

Attached is the Notice of Intended Regulatory Action (NOIRA) Background Document, which is

required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA) and Executive Order 14 (2010). This document must be approved by the Board before department staff can proceed with the requirements of the Administrative Process Act.

Impact on Fiscal and Human Resources:
There will be an administrative impact as Department of Education staff will need to develop draft regulations for public comments, prepare and file all documentation related to the Administrative Process Act, and ensure that public comments are solicited and addressed. This impact will be absorbed within existing resources.

Timetable for Further Review/Action:
The timetable for further action will be governed by the requirements of the Administrative Process Act.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education accept the Notice of Intended Regulatory Act for first review.

Virginia
Regulatory
Town Hall

townhall.virginia.gov

Notice of Intended Regulatory Action (NOIRA)
Agency Background Document

Agency name	Virginia Board of Education
Virginia Administrative Code (VAC) citation	8 VAC 20-131
Regulation title	*Regulations Establishing the Standards for Accrediting Public Schools in Virginia*
Action title	Update for Legislative Changes Made by the 2012 General Assembly - House Bill 1215.
Date this document prepared	April, 26, 2012

This information is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA), Executive Orders 14 (2010) and 58 (1999), and the *Virginia Register Form, Style, and Procedure Manual.*

Purpose

Please describe the subject matter and intent of the planned regulatory action. Also include a brief explanation of the need for and the goals of the new or amended regulation.

House Bill 1215**,** which was passed by the General Assembly during the 2012 Session and has been signed by the Governor, amends the *Code of Virginia* to require the Board of Education to promulgate regulations establishing standards for the accreditation of public virtual schools that enroll students full-time. This regulatory action addresses this legislation by amending existing regulations to address the accreditation of public virtual schools operating under the authority of the local school boards. The intent of this legislation is to address situations where a student could be enrolled in a public school and take all coursework virtually, rather than in a traditional “brick and mortar” environment.

The Board of Education’s *Regulations Establishing the Standards for Accrediting Public Schools in Virginia* (SOA) are designed to ensure that an effective educational program is established and maintained in Virginia's public schools and the regulations are applicable to all public schools in Virginia. The provisions in these regulations are geared to traditional “brick and mortar” public schools and do not specifically address public virtual schools that enroll students full-time. SOA standards, such as those related to health and physical education, library media, staffing requirements, hours of instruction, extracurricular activities, and school facilities and safety, need to be examined for virtual schools and for appropriate service delivery in a full-time virtual environment.

As the options available to Virginia's public school students through virtual learning programs continue to expand, students enrolled in public schools may be able to take all coursework virtually and may not be required to attend the traditional "brick and mortar" schools at all. Therefore, the Board must establish standards governing public virtual schools that will maintain a level of student achievement commensurate with instruction delivered in traditional "brick and mortar" schools.

Legal basis

Please identify the state and/or federal legal authority to promulgate this proposed regulation, including (1) the most relevant citations to the Code of Virginia or General Assembly chapter number(s), if applicable, and (2) promulgating entity, i.e., agency, board, or person. Your citation should include a specific provision authorizing the promulgating entity to regulate this specific subject or program, as well as a reference to the agency/board/person's overall regulatory authority.

House Bill 1215 amends § 22.1-253.13:3.A of the *Code of Virginia* to state: "The Board of Education shall promulgate regulations establishing standards for accreditation of public virtual schools under the authority of the local school board that enroll students full time."

In addition, § 22.1-16 of the *Code* authorizes the Board of Education to adopt bylaws for its own government and promulgate such regulations as may be necessary to carry out its powers and duties and the provisions of this title.

Need

Please detail the specific reasons why the agency has determined that the proposed regulatory action is essential to protect the health, safety, or welfare of citizens. In addition, delineate any potential issues that may need to be addressed as the regulation is developed.

The proposed regulatory action is essential to protect the health, safety, or welfare of citizens in that it will ensure that public virtual schools will maintain a level of student achievement commensurate with instruction delivered in traditional "brick and mortar" schools. Currently, the provisions in these regulations are geared to traditional "brick and mortar" public schools and do not specifically address public virtual school programs that enroll students full-time. Therefore, SOA standards, such as those related to health and physical education, library media, staffing requirements, hours of instruction, extracurricular activities, and school facilities and safety, need to be examined for virtual schools and for appropriate service delivery in a full-time virtual environment.

Substance

Please detail any changes that will be proposed. Be sure to define all acronyms. For new regulations, include a summary of the proposed regulatory action. Where provisions of an existing regulation are being amended, explain how the existing regulation will be changed.

Section 22.1-253.13:3 of the *Code of Virginia* requires the Virginia Board of Education to promulgate regulations establishing standards for the accreditation of public schools. The Board's *Regulations Establishing the Standards for Accrediting Public Schools in Virginia* (SOA) are designed to ensure that an effective educational program is established and maintained in Virginia's public schools. The Board will review these regulations for potential amendments in order to examine differences in service delivery that exist between a "brick and mortar" public school and a virtual public school that enrolls students full-

time. Questions regarding these differences have been raised where the current regulations reference such areas as health and physical education, library media, hours of instruction, extracurricular activities, staffing requirements, and school facilities and safety, but there may be other areas of the regulations that require amendment. The proposed changes will ensure that public virtual schools that will maintain a level of student achievement commensurate with that delivered in traditional "brick and mortar" schools.

Alternatives

Please describe all viable alternatives to the proposed regulatory action that have been or will be considered to meet the essential purpose of the action. Also, please describe the process by which the agency has considered or will consider other alternatives for achieving the need in the most cost-effective manner.

Because House Bill 1215 requires the promulgation of regulations "establishing standards for accreditation of public virtual schools under the authority of the local school board that enroll students full time," no other alternative has been considered.

Public participation

Please indicate whether the agency is seeking comments on the intended regulatory action, including ideas to assist the agency in the development of the proposal and the costs and benefits of the alternatives stated in this notice or other alternatives. Also, indicate whether a public hearing is to be held to receive comments on this notice.

Please also indicate pursuant to your Public Participation Guidelines whether a panel will be appointed to assist in the development of the proposed regulation. Please state one of the following: 1) a panel will be appointed and the agency's contact if you're interested in serving on the panel is _____; 2) a panel will not be used; or 3) public comment is invited as to whether to use a panel to assist in the development of this regulatory proposal.

The agency is seeking comments on this regulatory action including, but not limited to 1) ideas to be considered in the development of this proposal; 2) the costs and benefits of the alternatives stated in this background document or other alternatives; and 3) potential impact of the regulation. The agency is also seeking information on impacts on small businesses as defined in § 2.2-4007.01 of the *Code of Virginia*. Information may include: 1) projected reporting, recordkeeping and other administrative costs; 2) the probable effect of the regulation on affected small businesses; and 3) the description of less intrusive or costly alternatives for achieving the purpose of the regulation. A regulatory advisory panel will not be used.

Anyone wishing to submit comments may do so via the Regulatory Town Hall Web site (**http://www.townhall.virginia.gov**), or by mail, fax, or e-mail to Michelle Vucci; P.O. Box 2120; Richmond, Va. 23218-2120; (p) 804-225-2092; (f) 804-530-4502; or SOACOMMENTS@doe.virginia.gov. Written comments must include the name and address of the commenter. In order to be considered, comments must be received by midnight on the last day of the public comment period.

A public hearing will be held following the publication of the proposed stage of this regulatory action and notice of the hearing will be posted on the Virginia Regulatory Town Hall Web site (**http://www.townhall.virginia.gov**) and on the Commonwealth Calendar Web site (**http://www.virginia.gov/cmsportal3/cgi-bin/calendar.cgi**). Both oral and written comments may be submitted at that time.

Family impact

Assess the potential impact of the proposed regulatory action on the institution of the family and family stability including to what extent the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one's spouse, and one's children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.

The proposed amendments will address instructional service delivery for both "brick and mortar" and virtual schools, further ensuring educational quality for Virginia's public school students.

Standard regulatory process: Guide for state agencies

Stage 1

Notice of Intended Regulatory Action (NOIRA)

Submit NOIRA (Form TH-1) and sync RIS project (if available) for review on Town Hall.

Executive branch review
DPB - 14 day deadline;
If no objection by Cabinet Secretary or Governor within 14 days of DPB review, agency is authorized to submit NOIRA to Registrar

Within 14 days of being authorized, must submit NOIRA to *The Virginia Register of Regulations* via the Town Hall

Ten days before publication in the *Register*:
Automatic email is notification is also sent to registered Town Hall users.

NOIRA is published in the *Register.*
Thirty day public comment period begins & Town Hall comment forum opens.

Comment period/forum closes.
Consider public comment, draft proposed regulation, & submit it within 180 days for executive branch review.

Stage 2

Proposed regulation

Submit regulatory package (Form TH-2 and sync RIS project) for review on Town Hall.

Executive branch review
(In order of review):
-OAG – no deadline;
-DPB (including economic impact analysis (EIA) - 45 day deadline;
-Cabinet Secretary - 14 day deadline;
-Governor – no deadline

Within 14 days of Governor's approval, submit proposed stage to the *Register* via the Town Hall (and paper copies to the Registrar)

Ten days before publication in the *Register*:
Automatic email notification is also sent to registered Town Hall users

Proposed stage is published in the *Register.*

Sixty day public comment period begins and Town Hall public comment forum opens.

Comment period/forum closes.
Consider public comment.
Adopt final regulation no sooner than 15 days after comment period closes & submit for executive branch review no later than 180 days after close of comment period.

Stage 3

Final regulation

Submit regulatory package (Form TH-3 and sync RIS project) for review on Town Hall.

Executive branch review
(in order of review):
--OAG review only necessary if significant changes made since proposed stage – no deadline;
-DPB – 14 day deadline;
-Cabinet Secretary – 14 day deadline;
-Governor – no deadline

Within 14 days of Governor's approval, submit final regulation to the *Register* via the Town Hall (and paper copies to Registrar).

Ten days before publication in the *Register*:
Automatic email notification is also sent to registered town Hall users.

Final stage is published in *Register.*

Thirty day final adoption period begins and Town Hall public comment forum opens.

Final adoption period and public comment closes.

Final regulation becomes effective.
OR it is suspended,
OR, if changes with substantial impact have been made between the proposed and final stages and 25+ and/or Governor petition the agency, an additional public comment period must be held

Produced by the Virginia Department of Planning and Budget's Economic and Regulatory Analysis Division (ERAD) 7/11.
See **townhall.virginia.gov** for more information on rulemaking in Virginia.

Virginia Board of Education Agenda Item

Agenda Item: I **Date:** April 26, 2012

Title	Final Review of a Request from Carroll County Public Schools for Approval of an Alternative Accreditation Plan for Carroll County Public School's Virginia Virtual Academy (VAVA)		
Presenter	Ms. Anne D. Wescott, Assistant Superintendent for Policy and Communications Dr. James G. Smith, Superintendent, Carroll County Public Schools		
E-mail	Anne.Wescott@doe.virginia.gov	**Phone**	(804) 225-2403

Purpose of Presentation:
Action required by state or federal law or regulation.

Previous Review or Action:
Previous review and action. Specify date and action taken below:
First review on November 17, 2011
Presentation to the Accountability Committee on March 21, 2012

Action Requested:
Final review: Action requested at this meeting.

Alignment with Board of Education Goals: Please indicate (X) all that apply:

X	Goal 1: Expanded Opportunities to Learn
X	Goal 2: Accountability of Student Learning
	Goal 3: Nurturing Young Learners
	Goal 4: Strong Literacy and Mathematics Skills
	Goal 5: Highly Qualified and Effective Teachers and Administrators
	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify:

Background Information and Statutory Authority:
This item addresses two of the Board of Education's goals. The request would expand the opportunities for Carroll County public school students to learn by establishing a full-time virtual school, while holding the school and the school division accountability for student learning.

Carroll County public schools serve approximately 400 students in grades K-8 through its Virginia Virtual Academy (VAVA). The students are currently enrolled in brick and mortar schools in the division, and the instruction is delivered to the students in their homes, through a contract that Carroll County has with a multidivision online provider that has been approved by the Superintendent of Public Instruction, pursuant to §§ 22.1-212.23 through 22.1-212.27 of the *Code of Virginia*.

The Carroll County school board proposes to create a separate school for students enrolled in VAVA. The school, like all other public schools in Virginia, must comply with the *Regulations Establishing Standards for Accrediting Public Schools in Virginia* (Standards of Accreditation) unless it is granted an alternative accreditation plan and waivers from the Board of Education, or it is exempt from specified provisions of the regulations by the *Code of Virginia*.

The Standards of Accreditation say, in 8 VAC 20-131-350:

> **8 VAC 20-131-350. Waivers.**
>
> Waivers of some of the requirements of these regulations may be granted by the Board of Education based on submission of a request from the division superintendent and chairman of the local school board. The request shall include documentation of the need for the waiver. In no event shall waivers be granted to the requirements of Part III (8VAC20-131-30 et seq.) of these regulations except that the Board of Education may provide for the waiver of certain graduation requirements in 8VAC20-131-50 (i) upon the board's initiative or (ii) at the request of a local school board on a case-by-case basis. The board shall develop guidelines for implementing these requirements.

The Standards of Quality, in § 22.1-253.13:2 of the *Code of Virginia,* says: "When determining the assignment of instructional and other licensed personnel in subsections C through J, a local school board shall not be required to include full-time students of approved virtual school programs."

Summary of Major Elements: Carroll County public xchools requests waivers in the following areas:

- 8 VAC 20-131-150 – Standard instructional day of 5 ½ hours for grades 1-12 and three hours for kindergarten
- 8 VAC 20-131-90 – 140 hours of instruction in English, mathematics, science, and history/social science in the middle grades
- 8 VAC 20-131-190 – Library media, materials and equipment
- 8 VAC 20-131-200 – Extracurricular activities and recess
- 8 VAC 20-131-240 – Staffing requirements
- 8 VAC 20-131-260 – School facilities and safety

Standard Instructional Day of 5 ½ Hours for Grades 1-12 and Three Hours for Kindergarten

> **8 VAC 20-131-150. Standard school year and school day.**
>
> A. The standard school year shall be 180 instructional days. The standard school day for students in grades 1 through 12 shall average at least 5-1/2 instructional hours, excluding breaks for meals and recess, and a minimum of three hours for kindergarten.
>
> B. All students in grades 1 through 12 shall maintain a full day schedule of classes (5-1/2 hours), unless a waiver is granted in accordance with policies defined by the local school board.

This provision of the Standards of Accreditation is based on § 22.1-98 of the *Code of Virginia* that requires: "The length of every school's term in every school division shall be at least 180 teaching days

or 990 teaching hours in any school year… unless there are severe weather conditions or other emergencies. The Carroll County waiver request states that the students enrolled in VAVA would meet the requirement for the 180 instructional days, as the instructional program would not be affected by school closures caused by severe weather conditions.

Carroll County public schools requests a waiver of the requirement for a 5 ½ hour day for students in grades 1-12, and three hours a day for students in kindergarten. Instead of the 5 ½ hour or three hour seat time requirement, the seat time for students enrolled in VAVA would be based on their mastery of the curriculum.

140 Hours of Instruction in English, Mathematics, Science, and History/Social Science in the Middle Grades

8 VAC 20-131-90. Instructional program in middle schools.

…D. To provide students a sufficient opportunity to learn, each student shall be provided 140 clock hours per year of instruction in each of the four disciplines of English, mathematics, science, and history/social science. Sixth grade students may receive an alternative schedule of instruction provided each student receives at least 560 total clock hours of instruction in the four academic disciplines ….

Carroll County requests a waiver of the requirement of 140 hours of instructional time in each of the four core academic disciplines of English, mathematics, science, and history/social science. Instead the seat time for students enrolled in VAVA would be based on their mastery of the curriculum.

Library Media, Materials and Equipment

8 VAC 20-131-190. Library media, materials and equipment.

A. Each school shall maintain an organized library media center as the resource center of the school and provide a unified program of media services and activities for students and teachers before, during, and after school. The library media center shall contain hard copy, electronic technological resources, materials, and equipment that are sufficient to meet research, inquiry, and reading requirements of the instructional program and general student interest ….

Carroll County public schools requests a waiver from the provision that the school have a library media center to serve as a resource to students in the school. Instead, it will provide a variety of online and hard copy materials and resources for the students.

Extracurricular Activities and Recess

8 VAC 20-131-200. Extracurricular and other school activities; recess.

A. School sponsored extracurricular activities shall be under the direct supervision of the staff and shall contribute to the educational objectives of the school. Extracurricular activities must be organized to avoid interrupting the instructional program. Extracurricular activities shall not be permitted to interfere with the student's required instructional activities.

Extracurricular activities and eligibility requirements shall be established and approved by the superintendent and the school board ….

C. Each elementary school shall provide students with a daily recess during the regular school year as determined appropriate by the school.

Carroll County requests a waiver from the requirement for daily recess in the elementary grades, and from the provision of traditional extracurricular activities. Instead, all students will be required to participate in 30 minutes of physical fitness activities, and will be able to participate in clubs and outings that are planned and supervised by the VAVA teachers.

Staffing Requirements

8 VAC 20-131-240. Administrative and support staff; staffing requirements.

…D. The counseling program for elementary, middle, and secondary schools shall provide a minimum of 60% of the time for each member of the guidance staff devoted to counseling of students ….

E. The middle school classroom teacher's standard load shall be based on teaching no more than 5/6 of the instructional day with no more than 150 student periods per day or 25 class periods per week ….

G. Middle or secondary school teachers shall teach no more than 750 student periods per week; however, physical education and music teachers may teach 1,000 student periods per week.

H. Notwithstanding the provisions of subsections E, F, and G, each full-time middle and secondary classroom teacher shall be provided one planning period per day or the equivalent, unencumbered of any teaching or supervisory duties ….

J. Student services personnel as defined in the Standards of Quality shall be available as necessary to promote academic achievement and to provide support services to the school.

Carroll County requests a waiver of the requirement that 60 percent of the school counselor's time must be spent counseling students. It also requests a waiver of the requirements related to the teacher's standard load, which permits a planning period of one-sixth of the instructional day for teachers. It also requests a waiver of the staffing requirements for student services personnel. Carroll County has found that due to the nature of virtual education services, these requirements are not feasible. It should be noted that student services will be available for students enrolled in VAVA; only the staffing requirements for student services would be waived.

School Facilities and Safety

8 VAC 20-131-260. School facilities and safety.

A. Each school shall be maintained in a manner ensuring compliance with the Virginia Statewide Building Code (13VAC5-63). In addition, the school administration shall:

1. Maintain a physical plant that is accessible, barrier free, safe, and clean;

2. Provide for the proper outdoor display of flags of the United States and of the Commonwealth of Virginia;

3. Provide suitable space for classrooms, administrative staff, pupil personnel services, library and media services, and for the needs and safety of physical education;

4. Provide adequate, safe, and properly-equipped laboratories to meet the needs of instruction in the sciences, technology, fine arts, and career and technical programs; and

5. Provide facilities for the adequate and safe administration and storage of student medications.

B. Each school shall maintain records of regular safety, health, and fire inspections that have been conducted and certified by local health and fire departments. The frequency of such inspections shall be determined by the local school board in consultation with the local health and fire departments. In addition, the school administration shall:

1. Equip all exit doors with panic hardware as required by the Virginia Statewide Building Code (13VAC5-63); and

2. Conduct fire drills at least once a week during the first month of school and at least once each month for the remainder of the school term. Evacuation routes for students shall be posted in each room. Additionally, at least one simulated lock-down and crisis emergency evacuation activity should be conducted early in the school year.

C. Each school shall have contingency plans for emergencies that include staff certified in cardiopulmonary resuscitation (CPR), the Heimlich maneuver, and emergency first aid. In addition, the school administration shall ensure that the school has:

1. Written procedures to follow in emergencies such as fire, injury, illness, allergic reactions, and violent or threatening behavior. The plan shall be outlined in the student handbook and discussed with staff and students during the first week of each school year;

2. Space for the proper care of students who become ill;

3. A written procedure, in accordance with guidelines established by the local school board, for responding to violent, disruptive or illegal activities by students on school property or during a school sponsored activity; and

4. Written procedures to follow for the safe evacuation of persons with special physical, medical, or language needs who may need assistance to exit a facility.

Carroll County requests a waiver of the provisions of the Standards of Accreditation related to school facilities and safety, as these requirements would not apply to a virtual school. Carroll County does have a student handbook that addresses topics such as the student code of conduct, immunization

requirements, guidelines for appropriate behavior, Internet safety, guidelines dealing with cyberbullying, and parent involvement.

Principal

Instead of a principal, Carroll County requests that the person in the leadership position be designated as "Head of School" in accordance with the provisions of § 22.1-212.26 of the *Code*, which says, in part: "The administrator of a virtual school program shall hold an advanced degree from a regionally accredited institution of higher education with educational and work experience in administering educational programs." The Head of School would assume all of the duties and responsibilities of the principal, as outlined in 8 VAC 20-131-210 of the Standards of Accreditation. This request is consistent with § 22.1-212.26 and would not appear to require a waiver of 8 VAC 20-131-210.

Timeline for Granting a Waiver Request

Waiver requests are usually made prior to the beginning of the school year in which the waiver would apply. However, the Standards of Accreditation do not specifically require that the waiver must be granted prior to the beginning of the school year. Therefore, it appears that the Board of Education would have the discretion to grant waivers to Carroll County for the 2011-2012 school year. This would require the waiver of all of the above regulations for school year 2011-2012. In addition, there are two standards that would need to be waived for 2011-2012 only. These are:

Instruction in Health and Physical Education in the Elementary and Middle Grades

8 VAC 20-131-80. Instructional program in elementary schools.

A. The elementary school shall provide each student a program of instruction that corresponds to the Standards of Learning for English, mathematics, science, and history/social science. In addition, each school shall provide instruction in art, music, and physical education and health and shall require students to participate in a program of physical fitness during the regular school year in accordance with guidelines established by the Board of Education….

8 VAC 20-131-90. Instructional program in middle schools.

A. The middle school shall provide each student a program of instruction which corresponds to the Standards of Learning for English, mathematics, science, and history/social science. In addition, each school shall provide instruction in art, music, foreign language, physical education and health, and career and technical exploration and shall require students to participate in a program of physical fitness during the regular school year in accordance with guidelines established by the Board of Education….

Carroll County plans to require students enrolled in VAVA to participate in 30 minutes of physical fitness activities every day, as logged and submitted by the student's learning coach (typically the student's parent), but does not provide a program of physical education and health through the virtual school. However, it plans to do so beginning in the 2012-2013 school year.

Instruction in Career and Technical Exploration in the Middle Grades

8 VAC 20-131-90. Instructional program in middle schools.

…B. The middle school shall provide a minimum of eight courses to students in the eighth grade. English, mathematics, science, and history/social science shall be required. Four elective courses shall be available: level one of a foreign language, one in health and physical education, one in fine arts, and one in career and technical exploration.

Carroll County does not currently offer an elective course in career and technical exploration to its middle school students enrolled in VAVA, but plans to do so beginning in the 2012-2013 school year.

A copy of the revised waiver request is attached, along with strike-out version that shows the changes that were made to the original waiver request. Also attached are the 2010-2011 test results of students enrolled in VAVA and students enrolled in a traditional instructional program.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education approve an alternative accreditation plan with the following waiver requests, beginning in school year 2011-2012 and continuing until such time as the regulations governing the standards for the accreditation of public virtual schools, pursuant to HB 1215 (2012), become effective:

- 8 VAC 20-131-150 – Standard instructional day of 5 ½ hours for grades 1-12 and three hours for kindergarten
- 8 VAC 20-131-90 – 140 hours of instruction in English, mathematics, science, and history/social science in the middle grades
- 8 VAC 20-131-190 – Library media, materials and equipment
- 8 VAC 20-131-200 – Extracurricular activities and recess
- 8 VAC 20-131-240 – Staffing requirements
- 8 VAC 20-131-260 – School facilities and safety

The Superintendent of Public Instruction also recommends that the Board of Education approve an alternative accreditation plan with the following waiver requests on a one-time only basis, for school year 2011-2012:

- 8 VAC 20-131-80 and 8 VAC 20-131-90 – Instruction in health and physical education in the elementary and middle grades
- 8 VAC 20-131-90 – Instruction in career and technical exploration in the middle grades

Approving the waiver requests for 2011-2012 will allow the separate reporting of the Standards of Learning tests administered in 2011-12 that will generate state accreditation ratings and federal adequate yearly progress (AYP) ratings for 2012-2013. This action will serve to ensure that the virtual school is held accountable to the same accreditation requirements as all other public schools.

Impact on Resources:
The impact on resources is not expected to be significant.

Timetable for Further Review/Action:
Following the April 26, 2012, meeting, Department of Education staff will notify the School Board and the Superintendent of Carroll County Public Schools of the decision of the Board of Education.

Carroll County Public Schools

605-9 Pine Street
Hillsville, Virginia 24343

Telephone: (276) 728-3191
(276) 236-8145
Fax: (276) 728-3195

Office of the Superintendent

April 16, 2012

Dr. Anne D. Wescott, Assistant Superintendent
Division of Policy and Communications
Department of Education
P. O. Box 2120
Richmond, VA 23218-2120

Dear Dr. Wescott:

Please find enclosed the revised waiver packet, including the original cover sheet and revised supporting documentation for requesting Approval of an Alternative Accreditation Plan for Carroll County Public School's Virginia Virtual Academy (VAVA) and for requesting waivers of certain accrediting standards under the *Regulations Establishing Standards for Accrediting Public Schools in Virginia* (8 VAC 20-131-05 et seq.). The original wavier packet has been revised, eliminating the request for waivers of Physical Education (PE), physical fitness, health, career/technical exploration, and the 140-clock hours per year in each of the core areas and the alternate requirement of 560 hours in the total core. These requirements will be met for our virtual students.

For your convenience, two versions are included: 1) a red-font, strike-out version that indicates additions in red and deletions in strike-out format, and 2) a print-ready copy of the revised request, with all additions and deletions finalized.

Respectfully, we are requesting that our application for the approval of an Alternative Accreditation Plan for Carroll County Public School's Virginia Virtual Academy (VAVA) and the designated waivers become retroactively effective for the 2011-12 school year. This action will serve to ensure that our virtual school is held accountable to the same accreditation requirements as all other public schools.

Thank you for the assistance you have provided during the development of this application packet.

Sincerely,

James G. Smith
Division Superintendent

Brian E. Spencer
Chairman of the School Board
Carroll County Public Schools Division

COMMONWEALTH OF VIRGINIA
BOARD OF EDUCATION
P.O. Box 2120
RICHMOND, VIRGINIA 23218-2120

COPY

REQUEST FOR WAIVER OF CERTAIN ACCREDITING STANDARDS AND/OR APPROVAL OF AN INNOVATIVE OR EXPERIMENTAL PROGRAM

The *Regulations Establishing Standards for Accrediting Public Schools in Virginia* (8 VAC 20-131-05 et seq.) set the minimum standards public schools must meet to be accredited by the Board of Education. Accreditation of public schools is required by the Standards of Quality (§§ 22.1-253.13:1 et seq.). The annual accrediting cycle for public schools is July 1 through June 30.

This cover sheet, with the supporting documentation, must be submitted to the Department of Education for review and recommendation to the Board at least 90 days prior to the beginning of an accrediting cycle or the proposed implementation of the program or activity that precipitates the request for the waiver. The types of waivers available and the corresponding section of the standards are indicated below. Please attach additional sheets or information deemed appropriate. (The Board will consider this request in its monthly meeting and the superintendent or his designee **is required** to **appear** before the Board **in person** or **respond electronically** to explain a waiver request.)

SCHOOL DIVISION: Carroll County Public Schools Division (018)

TITLE OF PROGRAM/ACTIVITY: Establishment of Virginia Virtual Academy of Carroll County Public Schools as a School

TYPE OF APPROVAL REQUESTED:

- [x] Approval of an Alternative to the Standard School Year and School Day (8 VAC 20-131-150)
- [ ] Approval of an Alternative Accreditation Plan (8 VAC 20-131-280.D)
- [ ] Approval of an Experimental Program (8 VAC 20-131-290.D)
- [ ] Approval of an Innovative Program (8 VAC 20-131-290.D)
- [x] Approval of a Waiver of Other Provision(s) of the Standards (8 VAC 20-131-350)

SCHOOL(S) PARTICIPATING IN THE PROPOSED PROGRAM/ACTIVITY: Virginia Virtual Academy (VAVA): A Program of Carroll County Public Schools Division

8/9/2011
Date Approved by the Local School Board

Franklin M Pitts
Signature – Chairman of the School Board

8/29/2011
Submission Date

Signature – Division Superintendent

COMPLETED

SCHOOL DIVISION: Carroll County Public Schools Division (018)

TITLE OF PROGRAM/ACTIVITY: Establishment of Virginia Virtual Academy of Carroll County Public Schools as a School

1. DESCRIBE THE WAIVER REQUESTED, INCLUDING A DESCRIPTION OF THE APPLICABLE PROGRAM, THE GRADES SERVED, DEMOGRAPHIC INFORMATION DESCRIBING THE STUDENTS WHO WILL BE PARTICIPATING, AND OTHER RELEVANT INFORMATION.

The School Board of the Carroll County Public Schools Division is interested in the administrative designation of our Virginia Virtual Academy (VAVA) Program as a separate school, under the auspices of the Carroll County Public Schools Division, and is therefore requesting two types of waivers: Approval of an Alternative to the Standard (School Year and) School Day (8 VAC 20-131-150) and Approval of a Waiver of Other Provisions of the Standards (8 VAC 20-131-350). Specific provisions of the Standards of Accreditation for which we are seeking waivers and a rationale for each are outlined in Section 2 below. Provisions of the Standards for which we are seeking waivers deal primarily with elements that are not consistent with virtual, online education such as length of the instructional day, staffing patterns, and facility requirements.

Waivers of provisions ensuring student achievement expectations, core program of instruction, and expectations for school accountability are not being requested. Establishing our Virginia Virtual Academy Program as a separate school ensures that this academy and the vendor providing online instructional services will be held to the same high level of expectations and accountability as a traditional brick and mortar school. As an online, virtual school, VAVA will be expected to meet all of the Standards outlined in the *Regulations Establishing Standards for Accrediting Public Schools in Virginia* and the *Standards of Quality,* other than the ones for which we are requesting waivers.

The Virginia Virtual Academy (VAVA): A Program of Carroll County Public Schools Division serves approximately 400 students in grades kindergarten through grade eight from both within and outside the geographical boundaries of the school division. The student population represents a diverse range of students, including various ethnicities, economic levels, and special needs. This program offers a full-time program of grade level coursework through an online environment. It was approved as a multidivision online provider by the Virginia Board of Education in June 2011.

Currently, these 400 students are randomly distributed among the Carroll County brick and mortar schools based on a pro rated percentage of school membership. Test results for the VAVA students are embedded within each brick and mortar school and are not reported separately. Therefore, the SOL results and all accountability ratings of each brick and mortar school are skewed based upon VAVA students' results.

The program is designed as a public school alternative for students who were previously home schooled, attended private school, or who seek an alternative to the traditional brick and mortar learning environment but who want to receive a public school education in Virginia. Students are enrolled as full-time students in Carroll County Public Schools Division and pursue a rigorous curriculum aligned to the Virginia Standards of Learning. Instruction is delivered through an online, virtual environment. All of the VAVA students participate in the Virginia Assessment Program appropriate to their grade level.

2. IF YOU ARE SEEKING A WAIVER OF A PROVISION OF THE *STANDARDS OF ACCREDITATION* OR ANOTHER BOARD OF EDUCATION REGULATION, CITE THE SPECIFIC REGULATION TO BE WAIVED, AND EXPLAIN THE RATIONALE FOR SEEKING A WAIVER FROM THE REGULATION.

A. Waiver of Requirement of Timeline in Submitting Waivers for 2011-12 School Year.
We request that the waivers submitted in this application be retroactive to July 1, 2011 and be approved for the 2011-12 school year, along with the reclassification of the Virginia Virtual Academy of Carroll County Public Schools as a separate school entity. Since this is a virtual, online mode of instructional delivery, VAVA as a school entity of its own would not be hindered by structural or facility-based requirements that have to be met. Therefore, we are requesting a waiver of the timeline requiring submission of the application 90 days prior to the July 1, 2011 beginning of the accountability year 2011-12. This would ensure that accountability requirements and Standards of Accreditation are met for the Virginia Virtual Academy Program of Carroll County for 2011-12 and would ensure that the other 10 Carroll County Public Schools receive appropriate 2012-13 accountability and accreditation ratings based on the 2011-12 performance of their brick and mortar students, rather than on performance of virtual students to whom they do not provide direct or indirect services.

B. Waiver of Alternative to the Standard (School Year) and School Day (8 VAC 20-131-150).
We are not requesting a waiver to the standard school year of 180 instructional days. The Virginia Virtual Academy of Carroll County will operate on the traditional 180 instructional day calendar. However, we are requesting a waiver of the required 5.5 instructional hours per day for students in grades 1 through 12 and 3 instructional hours per day for kindergarten students due to the one-on-one instructional delivery and high time-on-task characteristic of virtual learning. Students who are receiving instruction in a virtual, online setting are able to progress through the daily lessons more quickly than the brick and mortar setting. They are not affected by time devoted to class change, disruptions to the learning environment due to non-instructional tasks or management of student behavior, and attendance and procedural routines included in the traditional brick and mortar classroom.

In addition, students in a virtual learning setting are not affected by school closures due to inclement weather. Carroll County Public Schools Division may miss, on the average, fifteen to twenty days of school due to bad weather. However, virtual students continue with their instruction during those days. Therefore, student progress of virtual students is based on mastery of content rather than daily seat time. Rather than an emphasis given to daily 5.5 instructional hours of seat time, emphasis will be given to monitoring coverage of the curriculum, percent mastery of the curriculum covered, results of ongoing assessments and benchmark testing consistent with brick and mortar requirements, and successful performance on the Virginia SOL Assessments. Students are still required to meet the total number of contact hours, as required in the brick and mortar setting.

The emphasis on mastery learning based on the Virginia Standards of Learning, results of formative assessments and benchmark testing, equivalent number of total contact hours required, and on-going monitoring of student progress rather than a focus on the 5.5 hours of daily seat time is expected to result in increased student achievement of the virtual students.

C. Waiver of Other Provision(s) of the Standards (8 VAC 20-131-350).
We are requesting waivers of certain provisions of the Standards based on the nature of virtual, online education in contrast with the traditional brick and mortar mode of schooling and instruction. These provisions of specific standards for which we are requesting waivers are identified below, along with a rationale for each.

C.1. Waiver of 8 VAC 20-131-190. Library Media, Materials, & Equipment.
We are requesting a waiver of the provision related to section A, "Maintaining an organized library media center," based on being non-applicable for online, virtual learning programs. VAVA students are provided online and hard-copy access to a variety of materials and resources that support the instructional program. In addition, they are provided access to online research and reference documents through the internet. All students and their parents also have access to their public libraries.

C.2. Waiver of 8 VAC 20-131-200. Extracurricular and Other School Activities, Recess.
We are requesting a waiver for the traditional provision related to daily recess for elementary schools and traditional provisions for extracurricular activities, based on the nature of online schooling. Due to a flexible schedule, students are able and encouraged to participate in daily physical activities. Parents log in hours of physical fitness completed by their students on a weekly basis. This can be sports, physical fitness, activities around the house, or other physically-based activities. VAVA students have clubs and bi-monthly outings that are available for all to attend and are organized, planned, and supervised by VAVA teachers, staff, and parents.

C. 3. Waiver of 8 VAC 20-131-240. Administrative and Support Staff & Staffing Requirements.
Currently, 100% of VAVA teachers are highly qualified, licensed by the Virginia Board of Education, and endorsed in the content area they will teach. All teachers meet the requirements set forth in the Code of Virginia with respect to background, fingerprint, and conviction checks. Therefore, a waiver of this provision is not requested.

However, we are requesting a waiver of the provisions related to other staffing requirements outlined in this Standard, including teacher-to-student ratio, number of student periods per day and per week, the 60% counseling requirement, the planning period requirement, and student services staffing requirements. Due to the nature of online, virtual education services, these requirements designed for traditional brick and mortal buildings, are not feasible and applicable to an online, virtual environment.

C. 4. Waiver of 8 VAC 20-131-260. School Facilities and Safety.
We are requesting a waiver of the facility-based provisions in this Standard due to being non-applicable to virtual, online education. The provisions for which we are requesting a waiver in this Standard are: maintenance of a school in compliance

with Virginia Statewide Building Code (13-VAC 5-63) and maintenance of inspections.

VAVA does meet Section C of the Standard. The Virginia Virtual Academy of Carroll County does have a student handbook, *Virginia Virtual Academy Parent/Student School Handbook*, outlining VAVA policies and procedures that include, but are not limited to, guidelines for appropriate behavior, student code of conduct, immunization requirements, internet safety, guidelines for dealing with cyber bullying, and parent involvement.

Request for "Head of School" to Assume Responsibilities of Role of Principal as outlined in 8 VAC 20-131-210. Role of the Principal
As allowed by recent Virginia legislation, the Virginia Virtual Academy of Carroll County has a "Head of School" rather than a principal designated as providing instructional leadership and school management. Pursuant to §22.1-212.26B of the *Code of Virginia*, "The administrator of a virtual school program shall hold an advanced degree from a regionally-accredited institution of higher education with educational and work experience in administering educational programs." However, in order to ensure appropriate accountability, it is requested that the "Head of School" assume all responsibilities and duties of a principal as outlined in 8 VAC 20-131-210. In this way, the Standard is met.

3. EXPLAIN HOW AND WHY APPROVAL OF THIS REQUEST WOULD BENEFIT STUDENTS.

Approval of this request for the establishment of VAVA as a school and the request for the waivers outlined above will place the appropriate level of responsibility for meeting the accountability measures and standards for a public school, as outlined in *Establishing Standards for Accrediting Public Schools in Virginia* and the *Standards of Quality,* on the vendor providing virtual, online instructional services. This will ensure that the focus of the program is on providing a rigorous curriculum aligned to the Virginia Standards of Learning (SOL); a program of instruction designed to ensure a high level of academic performance for all students; full participation in the Virginia Assessment Program; effective supervision and management of the virtual, online program; highly qualified personnel; ongoing monitoring of student progress; and effective parent and community communication. The inclusion of a biennial plan consistent with the division comprehensive plan will ensure strategic planning and continuous improvement.

Virtual, online students would be assured of receiving a well-balanced curriculum that is aligned to the Virginia SOL, instruction based on high expectations and designed to meet their individual needs, and assurance that they are receiving quality education consistent with Virginia Standards of Accreditation and Standards of Quality.

Results of the Spring 2011 SOL Assessments, as shown on the attachment, indicate that traditional brick and mortar students in Carroll County Public Schools Division are out-performing students in the Virginia Virtual Academy in the areas of middle school math and history/social sciences. Results for VAVA students in reading and science are consistent with Carroll County brick and mortar schools. Currently, since VAVA is not a separate school entity, VAVA student results from the Virginia Assessment Program are embedded within each brick and mortar Carroll County school, rather than assigned to the Virginia Virtual Academy Program.

If VAVA were set up as a separate school under the auspices of Carroll County Public Schools, VAVA student performance on the Virginia Assessment Program assessments would become a clear measure of the success of the online, virtual approach to education for the students involved in the program and would be used as one measure of determining areas for improvement. As one parent of two children in the VAVA Program stated, "It is not only a performance level indicator for my children; it is also a validation of the curriculum and the instruction they are receiving."

4. IF THE PROPOSED PROGRAM IS EXPERIMENTAL OR INNOVATIVE, EXPLAIN HOW THIS IS SO AND PROVIDE A PROGRAM DESCRIPTION, INCLUDING:
   1) THE PURPOSE AND OBJECTIVES OF THE PROGRAM;
   2) DESCRIPTION AND DURATION OF THE PROGRAM;
   3) ANTICIPATED OUTCOMES;
   4) NUMBER OF STUDENTS AFFECTED;
   5) EVALUATION PROCEDURES; AND
   6) MECHANISMS FOR MEASURING GOALS, OBJECTIVES, AND STUDENT ACADEMIC ACHIEVEMENT THAT WILL BE EXPECTED AS A RESULT OF THE IMPLEMENTATION OF THE PROGRAM/ACTIVITY.

Not Applicable

5. DOES THE EXPERIMENTAL OR INNOVATIVE PROGRAM REQUIRE THE PARTICIPATING SCHOOLS TO OPEN

PRIOR TO LABOR DAY?

☐ YES ☐ NO

IF YES, EXPLAIN WHY THE SCHOOLS ARE REQUIRED TO OPEN PRIOR TO LABOR DAY.

N/A

6. IF THE PROGRAM IS EXPERIMENTAL, INCLUDE INFORMATION THAT EXPLAINS WHY THERE IS REASON TO EXPECT THAT THE PROGRAM WILL BE SUCCESSFUL.

   N/A

7. DESCRIBE THE ANTICIPATED OUTCOMES OF THE WAIVER.

   The requested waivers will support the nature of virtual, online learning by adapting the Standards to reflect a better fit between the virtual, online environment and the Standards for Accrediting Public Schools in Virginia. The Standards were developed originally for a traditional brick and mortar model of education. The waivers requested are only the ones necessary to reflect the nature of virtual, online teaching and learning, while still maintaining a rigorous curriculum, high expectations for students, accountability, and a quality educational system.

   Establishing our Virginia Virtual Academy Program as a separate school with the requested waivers ensures that this academy and the vendor providing online instructional services will be held to the same high level of expectations and accountability as a traditional brick and mortar school. As an online, virtual school, VAVA will be expected to meet all of the Standards outlined in the *Regulations Establishing Standards for Accrediting Public Schools in Virginia* and the *Standards of Quality,* other than the ones for which we are requesting waivers. VAVA student results from the Virginia Assessment Program will no longer be required to be embedded within each brick and mortar Carroll County school, but will be reported as a separate school under the name of Carroll County Virginia Virtual Academy.

8. DESCRIBE THE PROCESS THAT WILL BE USED TO EVALUATE THE EFFECTIVENESS OF THE WAIVER.

   The effectiveness of the waivers will be based on the Carroll County Virginia Virtual Academy meeting all accountability standards outlined in the *Regulations Establishing Standards for Accrediting Public Schools in Virginia* and the *Standards of Quality.*

Questions should be directed to the Division of Policy and Communications at (804) 225-2092, or by e-mail to policydata@doe.virginia.gov. This application and supporting documentation must be sent to:

Division of Policy and Communications
Department of Education
P. O. Box 2120
Richmond, VA 23218-2120

Carroll County Public Schools Division
Spring 2011 Non-Writing *Regular SOL Test Results
Comparison of CCPS Traditional ~ Virtual Academy and Impact

DIVISION LEVEL

Test/Grade	Virtual Academy (VAVA)			CCPS Brick & Mortar (*Does not include VAAP, VGLA, VSEP)			Combined (Virtual & CCPS)			
	# Tested	# Pass	% Pass	# Tested	# Pass	% Pass	# Tested	# Pass	% Pass	Impact on CCPS
Reading 3	33	25	76%	291	244	84%	324	269	83%	-1
Reading 4	39	33	85%	301	250	83%	340	283	83%	0
Reading 5	34	25	74%	292	256	88%	326	281	86%	-2
Reading 6	48	41	85%	306	269	88%	354	310	88%	0
Reading 7	36	29	81%	291	257	88%	327	286	87%	-1
Reading 8	42	37	88%	215	183	85%	257	220	86%	+1
Math 3	33	23	70%	295	264	89%	328	287	88%	-1
Math 4	38	30	79%	301	247	82%	339	277	82%	0
Math 5	35	20	57%	292	234	80%	327	254	78%	-2
Math 6	47	30	64%	293	244	83%	340	274	81%	-2
Math 7	34	12	35%	197	134	68%	231	146	63%	-5
Math 8	25	13	52%	268	215	80%	293	228	78%	-2
Science 3	33	23	70%	291	260	89%	324	283	87%	-2
Science 5	34	20	59%	295	242	82%	329	262	80%	-2
Science 8	42	37	88%	190	170	89%	232	207	89%	0
History 3 History/Social Science	33	14	42%	291	230	79%	324	244	75%	-4
History 4 VA Studies	39	24	62%	301	253	84%	340	277	81%	-3
History 5 US History I	35	11	31%	289	201	70%	324	212	64%	-6
History 6 US History II	47	32	68%	184	169	92%	231	201	87%	-5
History 7 Civics/Economics	40	25	63%	175	154	88%	215	179	83%	-5
Algebra I	30	20	67%	231	216	94%	261	236	90%	-4
Algebra II	1	1	100%	95	84	88%	96	85	89%	+1
Geometry	1	1	100%	239	200	84%	240	201	84%	0
Earth Science	10	7	70%	144	116	81%	154	123	80%	-1
World History I	40	25	63%	123	93	76%	163	118	72%	-4
World History II	10	4	40%	227	137	60%	237	141	59%	-1

**Results do not include alternative and alternate testing such as VAAP and VGLA and do not include transfer adjustments.*

SCHOOL DIVISION: Carroll County Public Schools Division (018)

TITLE OF PROGRAM/ACTIVITY: Establishment of Virginia Virtual Academy of Carroll County Public Schools as a School

1. DESCRIBE THE WAIVER REQUESTED, INCLUDING A DESCRIPTION OF THE APPLICABLE PROGRAM, THE GRADES SERVED, DEMOGRAPHIC INFORMATION DESCRIBING THE STUDENTS WHO WILL BE PARTICIPATING, AND OTHER RELEVANT INFORMATION.

   The School Board of the Carroll County Public Schools Division is interested in the administrative designation of our Virginia Virtual Academy (VAVA) Program as a separate school, under the auspices of the Carroll County Public Schools Division, and is therefore requesting two types of waivers: Approval of an Alternative to the Standard (School Year and) School Day (8 VAC 20-131-150) and Approval of a Waiver of Other Provisions of the Standards (8 VAC 20-131-350). Specific provisions of the Standards of Accreditation for which we are seeking waivers and a rationale for each are outlined in Section 2 below. Provisions of the Standards for which we are seeking waivers deal primarily with elements that are not consistent with virtual, online education such as length of the instructional day, staffing patterns, and facility requirements.

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   Currently, these 400 students are randomly distributed among the Carroll County brick and mortar schools based on a pro rated percentage of school membership. Test results for the VAVA students are embedded within each brick and mortar school and are not reported separately. Therefore, the SOL results and all accountability ratings of each brick and mortar school are skewed based upon VAVA students' results.

   The program is designed as a public school alternative for students who were previously home schooled, attended private school, or who seek an alternative to the traditional brick and mortar learning environment but who want to receive a public school education in Virginia. Students are enrolled as full-time students in Carroll County Public Schools Division and pursue a rigorous curriculum aligned to the Virginia Standards of Learning. Instruction is delivered through an online, virtual environment. All of the VAVA students participate in the Virginia Assessment Program appropriate to their grade level.

2. IF YOU ARE SEEKING A WAIVER OF A PROVISION OF THE *STANDARDS OF ACCREDITATION* OR ANOTHER BOARD OF EDUCATION REGULATION, CITE THE SPECIFIC REGULATION TO BE WAIVED, AND EXPLAIN THE RATIONALE FOR SEEKING A WAIVER FROM THE REGULATION.

   A. Waiver of Requirement of Timeline in Submitting Waivers for 2011-12 School Year.
   We request that the waivers submitted in this application be retroactive to July 1, 2011 and be approved for the 2011-12 school year, along with the reclassification of the Virginia Virtual Academy of Carroll County Public Schools as a separate school entity. Since this is a virtual, online mode of instructional delivery, VAVA as a school entity of its own would not be hindered by structural or facility-based requirements that have to be met. Therefore, we are requesting a waiver of the timeline requiring submission of the application 90 days prior to the July 1, 2011 beginning of the accountability year 2011-12. This would ensure that accountability requirements and Standards of Accreditation are met for the Virginia Virtual Academy Program of Carroll County for 2011-12 and would ensure that the other 10 Carroll County Public Schools receive appropriate 2012-13 accountability and accreditation ratings based on the 2011-12 performance of their brick and mortar students, rather than on performance of virtual students to whom they do not provide direct or indirect services.

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In addition, students in a virtual learning setting are not affected by school closures due to inclement weather. Carroll County Public Schools Division may miss, on the average, fifteen to twenty days of school due to bad weather. However, virtual students continue with their instruction during those days. Therefore, student progress of virtual students is based on mastery of content rather than daily seat time. Rather than an emphasis given to daily 5.5 instructional hours of seat time, emphasis will be given to monitoring coverage of the curriculum, percent mastery of the curriculum covered, results of ongoing assessments and benchmark testing consistent with brick and mortar requirements, and successful performance on the Virginia SOL Assessments. Students are still required to meet the total number of contact hours, as required in the brick and mortar setting.

The emphasis on mastery learning based on the Virginia Standards of Learning, results of formative assessments and benchmark testing, equivalent number of total contact hours required, and on-going monitoring of student progress rather than a focus on the 5.5 hours of daily seat time is expected to result in increased student achievement of the virtual students.

C. Waiver of Other Provision(s) of the Standards (8 VAC 20-131-350).
We are requesting waivers of certain provisions of the Standards based on the nature of virtual, online education in contrast with the traditional brick and mortar mode of schooling and instruction. These provisions of specific standards for which we are requesting waivers are identified below, along with a rationale for each.

~~C.1. Waiver of 8 VAC 20-131-80. Instructional Program – Elementary Schools.~~
~~Physical Education, Physical Fitness, and Health~~
~~We are requesting a waiver of health/physical education and physical fitness based on the nature of virtual, online delivery mode of instruction and the emphasis on the four core areas of English, mathematics, history, and science. However, VAVA parents do log in hours of physical fitness activities completed by their students on a weekly basis. This 30-minute per day activity can be sports, physical fitness, activities around the house, or other physically-based activities. There is not a separate physical education or health course offered at this time. We are aware that the Code of Virginia requires that physical education and health be incorporated into the elementary program of instruction for students (§22.1-200, 22.1-207, 22.1-253.13:1 C & D13.) However, based on the nature of virtual, online education and the 30-minute per day requirement of physical fitness activities, logged and submitted by the Learning Coach, we are requesting that these requirements be considered met and that traditional instruction in PE and in health, as offered in the brick and mortal schools, be waived.~~

~~C.2. Waiver of 8 VAC 20-131-90. Instructional Program – Middle Schools.~~
~~Physical Education, Physical Fitness, and Career/Technical Exploration~~
~~We are requesting a waiver of certain provisions related to physical education, physical fitness, and career and technical exploration based on the nature of virtual, online delivery mode of instruction. For physical fitness, VAVA parents do log in hours of physical fitness activities completed by their students on a weekly basis. This 30-minute per day activity can be sports, physical fitness, activities around the house, or other physically-based activities. There is not a separate physical education or health course offered at this time. . We are aware that the Code of Virginia requires that physical education and health be incorporated into the program of instruction for middle school students (22.1-207 and 22.1-253.13:1 C.) However, based on the nature of virtual, online education and the 30-minute per day requirement of physical fitness activities, logged and submitted by the Learning Coach, we are requesting that these requirements be considered met and that traditional instruction in PE and in health, as offered in the brick and mortal schools, be waived.~~

~~An Academic & Career Plan will be developed for each VAVA student in grade seven, to be completed by the fall of their eighth grade year. However, a career and technical exploration course in not provided by the virtual program at this time. The possibility of a course designed to meet this need is being discussed with the vendor providing the online program offerings.~~

~~Other Elective Areas~~

~~We are not requesting a waiver for art, music and foreign language. Art, music, and foreign languages (Spanish, German, French, and Latin) are available as electives to any student, free of charge.~~

~~We are requesting a waiver of the provision requiring 140 clock hours per year in each of the core areas and alternate 6th grade requirement of 560 hours in the total core due to the nature of virtual, online delivery mode of instruction. Students who are receiving instruction in a virtual, online setting are able to progress through the curriculum more quickly than the brick and mortar setting due to the one-on-one instructional delivery, lack of interruptions, and increased focus and time-on-task. Instead, emphasis will be given to monitoring coverage of the curriculum, percent mastery of the curriculum covered, results of ongoing assessments and benchmark testing consistent with brick and mortar requirements, and successful performance on the Virginia SOL Assessments.~~

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We are requesting a waiver of the provision related to section A, "Maintaining an organized library media center," based on being non-applicable for online, virtual learning programs. VAVA students are provided online and hard-copy access to a variety of materials and resources that support the instructional program. In addition, they are provided access to online research and reference documents through the internet. All students and their parents also have access to their public libraries.

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Currently, 100% of VAVA teachers are highly qualified, licensed by the Virginia Board of Education, and endorsed in the content area they will teach. All teachers meet the requirements set forth in the Code of Virginia with respect to background, fingerprint, and conviction checks. Therefore, a waiver of this provision is not requested.

However, we are requesting a waiver of the provisions related to other staffing requirements outlined in this Standard, including teacher-to-student ratio, number of student periods per day and per week, the 60% counseling requirement, the planning period requirement, and student services staffing requirements. Due to the nature of online, virtual education services, these requirements designed for traditional brick and mortal buildings, are not feasible and applicable to an online, virtual environment.

C.~~6~~ 4. Waiver of 8 VAC 20-131-260. School Facilities and Safety.
We are requesting a waiver of the facility-based provisions in this Standard due to being non-applicable to virtual, online education. The provisions for which we are requesting a waiver in this Standard are: maintenance of a school in compliance with Virginia Statewide Building Code (13-VAC 5-63) and maintenance of inspections.

VAVA does meet Section C of the Standard. The Virginia Virtual Academy of Carroll County does have a student handbook, *Virginia Virtual Academy Parent/Student School Handbook*, outlining VAVA policies and procedures that include, but are not limited to, guidelines for appropriate behavior, student code of conduct, immunization requirements, internet safety, guidelines for dealing with cyber bullying, and parent involvement.

Request for "Head of School" to Assume Responsibilities of Role of Principal as outlined in 8 VAC 20-131-210. Role of the Principal
As allowed by recent Virginia legislation, the Virginia Virtual Academy of Carroll County has a "Head of School" rather than a principal designated as providing instructional leadership and school management. Pursuant to §22.1-212.26B of the *Code of Virginia*, "The administrator of a virtual school program shall hold an advanced degree from a regionally-accredited institution of higher education with educational and work experience in administering educational programs." However, in order to ensure appropriate accountability, it is requested that the "Head of School" assume all responsibilities and duties of a principal as outlined in 8 VAC 20-131-210. In this way, the Standard is met.

3. EXPLAIN HOW AND WHY APPROVAL OF THIS REQUEST WOULD BENEFIT STUDENTS.

Approval of this request for the establishment of VAVA as a school and the request for the waivers outlined above will place the appropriate level of responsibility for meeting the accountability measures and standards for a public school, as outlined in *Establishing Standards for Accrediting Public Schools in Virginia* and the *Standards of Quality,* on the vendor providing virtual, online instructional services. This will ensure that the focus of the program is on providing a rigorous curriculum aligned to the Virginia Standards of Learning (SOL); a program of instruction designed to ensure a high level of academic performance for all students; full participation in the Virginia Assessment Program; effective supervision and management of the virtual, online program; highly qualified personnel; ongoing monitoring of student progress; and effective parent and community communication. The inclusion of a biennial plan consistent with the division comprehensive plan will ensure strategic planning and continuous improvement.

Virtual, online students would be assured of receiving a well-balanced curriculum that is aligned to the Virginia SOL, instruction based on high expectations and designed to meet their individual needs, and assurance that they are receiving quality education consistent with Virginia Standards of Accreditation and Standards of Quality.

Results of the Spring 2011 SOL Assessments, as shown on the attachment, indicate that traditional brick and mortar students in Carroll County Public Schools Division are out-performing students in the Virginia Virtual Academy in the areas of middle school math and history/social sciences. Results for VAVA students in reading and science are consistent with Carroll County brick and mortar schools. Currently, since VAVA is not a separate school entity, VAVA student results from the Virginia Assessment Program are embedded within each brick and mortar Carroll County school, rather than assigned to the Virginia Virtual Academy Program.

If VAVA were set up as a separate school under the auspices of Carroll County Public Schools, VAVA student performance on the Virginia Assessment Program assessments would become a clear measure of the success of the online, virtual approach to education for the students involved in the program and would be used as one measure of determining areas for improvement. As one parent of two children in the VAVA Program stated, "It is not only a performance level indicator for my children; it is also a validation of the curriculum and the instruction they are receiving."

4. IF THE PROPOSED PROGRAM IS EXPERIMENTAL OR INNOVATIVE, EXPLAIN HOW THIS IS SO AND PROVIDE A PROGRAM DESCRIPTION, INCLUDING:
   1) THE PURPOSE AND OBJECTIVES OF THE PROGRAM;
   2) DESCRIPTION AND DURATION OF THE PROGRAM;
   3) ANTICIPATED OUTCOMES;
   4) NUMBER OF STUDENTS AFFECTED;
   5) EVALUATION PROCEDURES; AND
   6) MECHANISMS FOR MEASURING GOALS, OBJECTIVES, AND STUDENT ACADEMIC ACHIEVEMENT THAT WILL BE EXPECTED AS A RESULT OF THE IMPLEMENTATION OF THE PROGRAM/ACTIVITY.

   Not Applicable

5. DOES THE EXPERIMENTAL OR INNOVATIVE PROGRAM REQUIRE THE PARTICIPATING SCHOOLS TO OPEN PRIOR TO LABOR DAY?

   ☐ YES ☐ NO

   IF YES, EXPLAIN WHY THE SCHOOLS ARE REQUIRED TO OPEN PRIOR TO LABOR DAY.

   N/A

6. IF THE PROGRAM IS EXPERIMENTAL, INCLUDE INFORMATION THAT EXPLAINS WHY THERE IS REASON TO EXPECT THAT THE PROGRAM WILL BE SUCCESSFUL.

   N/A

7. DESCRIBE THE ANTICIPATED OUTCOMES OF THE WAIVER.

   The requested waivers will support the nature of virtual, online learning by adapting the Standards to reflect a better fit between the virtual, online environment and the Standards for Accrediting Public Schools in Virginia. The Standards were developed originally for a traditional brick and mortar model of education. The waivers requested are only the ones necessary

to reflect the nature of virtual, online teaching and learning, while still maintaining a rigorous curriculum, high expectations for students, accountability, and a quality educational system.

Establishing our Virginia Virtual Academy Program as a separate school with the requested waivers ensures that this academy and the vendor providing online instructional services will be held to the same high level of expectations and accountability as a traditional brick and mortar school. As an online, virtual school, VAVA will be expected to meet all of the Standards outlined in the *Regulations Establishing Standards for Accrediting Public Schools in Virginia* and the *Standards of Quality,* other than the ones for which we are requesting waivers. VAVA student results from the Virginia Assessment Program will no longer be required to be embedded within each brick and mortar Carroll County school, but will be reported as a separate school under the name of Carroll County Virginia Virtual Academy.

8. DESCRIBE THE PROCESS THAT WILL BE USED TO EVALUATE THE EFFECTIVENESS OF THE WAIVER.

The effectiveness of the waivers will be based on the Carroll County Virginia Virtual Academy meeting all accountability standards outlined in the *Regulations Establishing Standards for Accrediting Public Schools in Virginia* and the *Standards of Quality.*

Questions should be directed to the Division of Policy and Communications at (804) 225-2092, or by e-mail to policydata@doe.virginia.gov. This application and supporting documentation must be sent to:

Division of Policy and Communications
Department of Education
P. O. Box 2120
Richmond, VA 23218-2120

Virginia Board of Education Agenda Item

Agenda Item: J **Date:** April 26, 2012

Title	Final Review of the Consensus Report from the Board of Education Charter School Committee on the Proposed Fairfax Leadership Academy Charter School Application		
Presenters	Mrs. Diane Jay, Associate Director, Office of Program Administration and Accountability on behalf of Mr. Rob Krupicka, Charter School Committee Chair		
E-mail	Diane.Jay@doe.virginia.gov	**Phone**	(804) 225-2905

Purpose of Presentation:
Action required by state or federal law or regulation.

Previous Review or Action:
Previous review and action. Specify date and action taken below:
Date: March 22, 2012
Action: First Review

Action Requested:
Final review: Action requested at this meeting.
April 26, 2012

Alignment with Board of Education Goals: Please indicate (X) all that apply:

X	Goal 1: Expanded Opportunities to Learn
	Goal 2: Accountability of Student Learning
	Goal 3: Nurturing Young Learners
	Goal 4: Strong Literacy and Mathematics Skills
	Goal 5: Highly Qualified and Effective Teachers and Administrators
X	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify:

Background Information and Statutory Authority:
Goal 1: In 2011, the Board of Education approved procedures for receiving and reviewing charter school applications and criteria used in reviewing applications.

Goal 6: The Board of Education has adopted expanded choices for student success. Charter schools are one avenue for parents and for children seeking new education options in the public education system.

As a result of legislation approved by the 2010 General Assembly, the *Code of Virginia*, Section 22.1-212.9, requires that all charter school applications be submitted to the Board prior to being submitted to the local school board. Applications must adhere to the format prescribed by the Board and address the

application elements stated in the *Code of Virginia*, Section 22.1-212.8. The Board is required to render a decision on whether the application meets its approval criteria. A decision by the Board that an application meets its approval criteria does not guarantee that the local school board will approve a request for a charter school. The process required by charter school applicants can be found at: http://www.doe.virginia.gov/instruction/charter_schools/application/application_process.pdf.

Summary of Important Issues:
To meet the intent of the legislation, the Board of Education has appointed a charter school committee to examine charter school applications submitted to the Board and ensure they are consistent with existing state law. The Board of Education Charter School Committee met on February 22, 2012, to discuss the charter school application submitted by the Fairfax Leadership Academy in Fairfax County and to meet with the applicant. A copy of the application can be found at: http://www.doe.virginia.gov/boe/committees_standing/meetings/charter_schools_meeting_materials.shtml#feb222012. Minutes in Attachment A reflect the Charter School Committee's discussion regarding the criteria developed by the Board. Attachment B contains the Charter School Committee's consensus report and the complete checklist used by the committee to evaluate the Fairfax Leadership Academy charter school application. The table below displays the committee's recommendation as to whether the components of the application meet the Board's approval criteria.

Required Application Components		Met the Criterion
II.	Mission Statement	Yes
III.	Goals and Educational Objectives	Yes
IV.	Evidence of Support	Yes
V.	Statement of Need	Yes
VI.	Educational Program	Yes
VII.	Enrollment Process	Yes
VIII.	Economic Soundness	Yes
IX.	Displacement	Yes
X.	Management and Operation	Yes
XI.	Employment Terms and Conditions	Yes
XII.	Liability and Insurance	Yes
XIII.	Transportation	Yes
XIV.	Residential Charter School	N/A
XV.	Disclosures	Yes

On March 22, 2012, the Board of Education accepted for first review the Charter School Committee's recommendation that the application for Fairfax Leadership Academy in Fairfax County meets all applicable Board of Education charter school application criteria.

Impact on Fiscal and Human Resources:
There is a minimum impact on resources. The agency's existing resources can absorb costs at this time.

Timetable for Further Review/Action:
Following the action by the Board, the applicant will be formally notified by the Department of Education of the Board's decision within five business days. Concurrent with its notification to the applicant, the Fairfax County School Board will also receive a formal notification of the Board's action.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education approve the Charter School Committee’s recommendation that the application for Fairfax Leadership Academy in Fairfax County meets all applicable Board of Education charter school application criteria.

Attachment A

Meeting Minutes
Virginia Board of Education
Charter School Committee

Richmond, Virginia

February 22, 2012

Mr. Rob Krupicka called the meeting to order at 1 p.m. Committee members attending were: Mrs. Betsy Beamer, Mr. Walter Cross, Mrs. Linda Hyslop, Mr. Rob Krupicka, Mr. Dave Cline, and Dr. Rick Richardson. Also present were Superintendent of Public Instruction Dr. Patricia Wright, and Board members, Mr. Chris Braunlich and Dr. Billy Cannaday.

After opening remarks, Mr. Krupicka described the steps of the review process and reviewed the committee's task of examining the Fairfax Leadership Academy public charter school application as stipulated in the *Code of Virginia*. The purpose of the meeting was for the committee to discuss the application, meet with the applicant, and decide if the application met the Board's approval criteria.

Before the examination of the application, Mr. Krupicka introduced the applicant, Mr. Eric Welch, who in turn recognized the following members of the Fairfax Leadership Academy team: Shawn DeRose, Anthony Terrell, Catherine Buffaloe, Sharyn Franck, Kurt Mills, Vince O'Neill, and Julie Strategos. Also attending from the Fairfax County Public Schools (FCPS) were Dr. Richard Moniuszko, Jim Johnson, Phyllis Pajado, Debra Reeder, and Paula Jett.

Mr. Krupicka made note of the supplemental materials that Mr. Welch presented and the letter that Dr. Moniuszko, Deputy Superintendent, sent to the Board of Education informing them that the charter school has been working with FCPS staff to determine various elements of the charter school.

Mr. Krupicka confirmed that the applicant information (Part A) was complete; an executive summary provided an overview of the proposed charter school; and the assurances (Part C) were signed.

The applicant then provided an overview of the main points of the application's components grouped into three areas: Education, Logistical, and Business. After the applicant addressed each area, the committee had the opportunity to ask questions. Committee members were asked to reach a consensus as to whether the application addressed each of the following required application components:

Required Application Components		Met the Criterion
II.	Mission Statement	Yes
III.	Goals and Educational Objectives	Yes
IV.	Evidence of Support	Yes
V.	Statement of Need	Yes
VI.	Educational Program	Yes
VII.	Enrollment Process	Yes
VIII.	Economic Soundness	Yes
IX.	Displacement	Yes
X.	Management and Operation	Yes
XI.	Employment Terms and Conditions	Yes
XII.	Liability and Insurance	Yes
XIII.	Transportation	Yes
XIV.	Residential Charter School	N/A
XV.	Disclosures	Yes

While consensus was reached that each of the criteria had been met, there were comments on Section IV: Evidence of Support, and Section VIII: Economic Soundness. Regarding Evidence of Support, the applicant was encouraged to seek additional parent and student input among the targeted population that would demonstrate in a more significant way that a need exists for the school. Regarding Economic Soundness, it was noted that the financial plan was adequate, but the applicant should work closely with FCPS to secure fixed figures on costs.

Dr. Wright commended the applicant on the proposal and also recognized the support of the FCPS.

Mr. Krupicka explained that the committee's consensus report will be prepared and provided to the applicant within ten business days. The report will be presented to the Board for first review at the March 22, 2012, meeting. The Board will review, comment, and make a determination as to whether the Fairfax Leadership Academy charter school application meets the approval criteria and take final action at the April 26 meeting.

The meeting was adjourned by Mr. Krupicka at 3 p.m.

Attachment B

Virginia Board of Education
Charter School Committee

Consensus Report for the Application Submitted by
Fairfax Leadership Academy Charter School
Fairfax County, Virginia
February 22, 2012

The *Code of Virginia*, Section 22.1-212.9, requires that all public charter school applications be submitted to the Board prior to being submitted to the local school board. Applications must adhere to the format prescribed by the Board and address the application elements stated in the *Code of Virginia*, Section 22.1-212.8. The Board is required to render a decision on whether the application meets its approval criteria. A decision by the Board that an application meets its approval criteria does not guarantee that the local school board will approve a request for a charter.

To meet the intent of the legislation, the Board of Education established a Charter School Committee. The committee met at the Virginia Department of Education on February 22, 2012, to discuss the charter school application submitted by the Fairfax Leadership Academy in Fairfax County and to meet with the applicant.

It was confirmed by the committee that the applicant information was complete; an executive summary provided an overview of the proposed charter school; and the assurances were signed. The applicant provided an overview of the main points of the application's components grouped into three areas: Education, Logistical, and Business. After the applicant addressed each area, the committee had the opportunity to ask questions. After the three areas were addressed, committee members reached a consensus as to whether the application addressed each of the required components. The consensus was based on the criteria checklist. The components are outlined below and in the criteria checklist appended to the consensus report.

Required Application Components		Met the Criterion
II.	Mission Statement	Yes
III.	Goals and Educational Objectives	Yes
IV.	Evidence of Support	Yes
V.	Statement of Need	Yes
VI.	Educational Program	Yes
VII.	Enrollment Process	Yes
VIII.	Economic Soundness	Yes
IX.	Displacement	Yes
X.	Management and Operation	Yes
XI.	Employment Terms and Conditions	Yes
XII.	Liability and Insurance	Yes
XIII.	Transportation	Yes
XIV.	Residential Charter School	N/A
XV.	Disclosures	Yes

While consensus was reached that each of the criterion had been met, there were comments on Section IV: Evidence of Support and Section VIII: Economic Soundness. Regarding Evidence of Support, the applicant was encouraged to seek additional parent and student input among the targeted population that would demonstrate in a more significant way that a need exists for the school. Regarding Economic Soundness, it was noted that the financial plan was adequate, but the applicant should work closely with Fairfax County Public Schools to secure fixed figures on costs.

The consensus report will be presented to the Board of Education for first review at the March 22, 2012, meeting. The Board will review, comment, and make an initial determination as to whether the Fairfax Leadership Academy application meets the approval criteria and will take final action at its meeting on April 26, 2012.

Charter School Committee

Criteria Checklist
for
Fairfax Leadership Academy

February 22, 2012

Virginia Board of Education
P.O. Box 2120
Richmond, Virginia 23218-2120

Fairfax Leadership Academy Criteria Checklist

Required Application Components	Does the Response Meet the Board's Approval Criterion?
Cover Page Requested information has been provided and the authorized official has signed and dated the cover page.	☒Yes ☐ No
Applicant Information Applicant information has been provided.	☒Yes ☐ No
I. Executive Summary: The executive summary provides an overview of the proposed charter school and includes the need for the public charter school and its goals and objectives.	☒Yes ☐ No
II. Mission Statement: The mission statement of the public charter school is consistent with the principles of the Standards of Quality (SOQ). The following components are addressed:	☒Yes ☐ No
1. A description of the public charter school's mission and how it is consistent with the principles of the Virginia SOQ. (Section 22.1-253.13:1, *Code of Virginia*)	
2. A description of any specialized area of academic concentration.	
3. Information about the public charter school's anticipated student population consistent with Section 22.1-212.6, of the *Code of Virginia*.	
III. Goals and Educational Objectives: The goals and educational objectives to be achieved by the public charter school are stated, and meet or exceed the Standards of Learning. The following components are addressed:	☒Yes ☐ No
1. A description of the performance-based goals.	
2. A description of the related measurable educational objectives to be achieved by the public charter school. (Section 22.1-253.13:1.B, *Code of Virginia*)	
IV. Evidence of Support: Evidence that an adequate number of parents, teachers, pupils, or any combination thereof, supports the formation of a public charter school is provided. The following components are addressed:	☒Yes ☐ No
1. Information and materials indicating how parents, the community, and other stakeholders were involved in supporting the application for the public charter school.	
2. Tangible evidence of support for the public charter school from parents, teachers, students, and residents, or any combination thereof, including, but not limited to, information regarding the number of persons and organizations involved in the process and petitions related to the establishment of the charter school.	
3. A description of how parental involvement will be used to support the educational needs of the students, the school's mission and philosophy, and its educational focus.	
V. Statement of Need: A statement describing the need for a public charter school in a school division or relevant school divisions in the case of a regional public charter school, or in a geographic area within a school division or relevant school divisions, is provided. The following components are addressed:	☒Yes ☐ No
1. An explanation of why the public charter school is being formed. (Is the school being formed at the request of parents or community organizations? How was the need determined? What data were examined as part of the needs assessment? Briefly describe the need and include a summary of the quantitative data.)	

Required Application Components	Does the Response Meet the Board's Approval Criterion?
2. An explanation of why a public charter school is the appropriate vehicle to address the identified need.	
VI. Educational Program: A description of the public charter school's educational program is provided. The following components are addressed:	☒ Yes ☐ No
1. A synopsis of the public charter school's educational program.	
2. A description of the pupil performance standards and curriculum, which must meet or exceed any applicable Virginia SOQ. (Sections 22.1-253.13:1 through 22.1-253.13:9, *Code of Virginia*)	
3. A description of how the Virginia SOL and the corresponding SOL Curriculum Framework will be used as the foundation for curricula to be implemented for each grade or course in the public charter school. Include within the description how the goals and objectives of the curricula will meet or exceed the Virginia Standards of Learning (SOL), address student performance standards, relate to state and federal assessment standards, and include measurable student outcomes. (See http://www.doe.virginia.gov/testing/index.shtml on the Department's Web site for more information about the SOL.)	
4. A description of any assessments to be used to measure pupil progress towards achievement of the school's pupil performance standards, in addition to the SOL assessments prescribed by Section 22.1-253.13:3, in the *Code of Virginia.*	
5. A description of the public charter school assessment plan to obtain student performance data, which includes how the data will be used to monitor and improve achievement and how program effectiveness, will be measured over a specified period of time. Also, provide benchmark data on how student achievement will be measured and how these data will be established and documented in the first year of operation and how the data will be measured over each year of the term of the charter as approved by the local school board. The benchmark data should address targets for student improvement to be met in each year.	
6. The timeline for achievement of pupil performance standards, in accordance with the Virginia SOL.	
7. An explanation of the procedures for corrective actions needed in the event that pupil performance at the public charter school falls below the standards outlined in the Virginia Board of Education's *Regulations Establishing Standards for Accrediting Public Schools in Virginia*, (8 VAC 20-131-310).	
8. Information regarding the minimum and maximum enrollment per grade as well as class size and structure for each grade served by the public charter school.	
9. Information regarding the proposed calendar and daily schedule, including any plans to open prior to Labor Day and how and when a waiver to open early will be submitted by the local school board to the Virginia Board of Education. (Section 22.1-79.1, *Code of Virginia*)	
10. A description of plans for identifying and serving: a) students with disabilities; b) English Language Learners (ELLs); c) academically at-risk students; and d) gifted and talented students. Such plans must indicate the extent of the involvement of the local school board in providing such services and must comply with state and federal laws and regulations.	
11. A description of the learning environment and scientifically research-based instructional strategies to be used at the public charter school to ensure student achievement.	

Required Application Components	Does the Response Meet the Board's Approval Criterion?
If applicable, the following components are addressed by the proposed public charter school:	☒ Not Applicable
12. If the public charter school plans to utilize virtual learning in its educational program, identify the virtual learning source, describe how virtual learning will be used, and estimate how many students may participate.	
13. A general description of any alternative accreditation plans, in accordance with the Virginia Board of Education's *Regulations Establishing Standards for Accrediting Public Schools in Virginia* (8 VAC 20-131-280), that the public charter school would request the local school board to submit to the Virginia Board of Education for approval.	
14. A general description of any alternative accreditation plan for serving students with disabilities, in accordance with the Virginia Board of Education's *Regulations Governing Special Education Programs For Children With Disabilities in Virginia* (8 VAC 20-80-40) that the public charter school would request the local school board to submit to the Virginia Board of Education for approval.	
VII. Enrollment Process: A description of the lottery process consistent with all federal and state laws and regulations and constitutional provisions prohibiting discrimination that are applicable to public schools and with any court-ordered desegregation plan in effect for the school division or, in the case of a regional public charter school, in effect for any of the relevant school divisions is provided. (Section 22.1-212.6, *Code of Virginia*). The following components are addressed:	☒ Yes ☐ No
1. A description of the lottery process to be used to determine the public charter school enrollment.	
2. A description of the lottery process for the establishment of a waiting list for such students for whom space is unavailable.	
3. A description of a tailored admission policy that meets the specific mission or focus of the public charter school, if applicable.	
4. A timeline for when the lottery process will begin for the first academic year of enrollment and when parents will be notified of the outcome of the lottery process.	
5. A description of any enrollment-related policies and procedures that address special situations, such as the enrollment of siblings and children of faculty and founders and the enrollment of nonresident students, if applicable.	
6. An explanation of how the applicant will ensure that, consistent with the public charter school's mission and purpose, community outreach has been undertaken so that special populations are aware of the formation of the public charter school and that enrollment is open to all students residing in the school division where the public charter school is located or in school divisions participating in a regional charter school.	
7. A description of how the transfer of students to and from the public charter school will be accomplished.	
8. A description of how students seeking enrollment after the school year begins will be accommodated.	
VIII. Economic Soundness: Evidence that the plan for the public charter school is economically sound for both the public charter school and the school division is provided. The following components are addressed:	☒ Yes ☐ No
1. A description of the public charter school's financial plan, including financial controls and audit requirements in accordance with generally accepted accounting principles.	

Required Application Components	Does the Response Meet the Board's Approval Criterion?
2. A start-up and three-year budgets with clearly stated assumptions and information regarding projected revenues and expenditures.	
3. A start-up and three-year cash flow projections with clearly stated assumptions and indications of short- and long-term sources of revenue.	
4. A description of anticipated fundraising contributions, if applicable.	
5. A description of the funding agreement that the public charter school intends to have with the local education agency, including information regarding anticipated local, state, and federal per-pupil-amounts to be received and any information pertaining to the maintenance of facilities.	
IX. Displacement: A description of the plan for the displacement of pupils, teachers, and other employees who will not attend or be employed in the public charter school, in instances of the conversion of an existing public school to a public charter school, and for the placement of public charter school pupils, teachers, and employees upon termination or revocation of the charter is provided. The following components are addressed:	☒ Yes ☐ No
1. Identification of a member of the school's leadership team who will serve as a single point of contact for all activities that may need to take place in order for the school to close, including, but not limited to, the transfer of students to another school, the management of student records, and the settlement of financial obligations.	
2. A notification process to parents/guardians of students attending the school and teachers and administrators of the closure date.	
3. A notification process to parents/guardians of students attending the public charter school of alternative public school placements within a set time period from the date that the closure is announced.	
4. Provisions for ensuring that student records are provided to the parent/guardian or another school identified by the parent or guardian within a set time period. If the student transfers to another school division, provisions for the transfer of the student's record to the school division to which the student transfers shall be made upon the request of that school division. (Section 22.1-289, *Code of Virginia*).	
5. Notification to the local school board of a list of all students in the school and the names of the schools to which these students will transfer.	
6. A placement plan for school employees that details the level of assistance to be provided within a set period of time from the date of closure. For teachers and administrators, the level of assistance should address finding employment within the school division where the public charter school is located or other public school divisions.	
7. A close-out plan related to financial obligations and audits, the termination of contracts and leases, and the sale and disposition of assets within a set period of time from the date of closure. The plan shall include the disposition of the schools' records and financial accounts upon closure.	

Required Application Components	Does the Response Meet the Board's Approval Criterion?
X. Management and Operation: A description of the management and operation of the public charter school, including the nature and extent of parental, professional educator, and community involvement in the management and operation of the public charter school is provided. (Section 22.1-212.7, *Code of Virginia*) The following components are addressed:	☒Yes ☐ No
1. A description of the functions, roles, and duties of the management committee as defined in Section 22.1-212.6 of the *Code of Virginia* in the operation and oversight of the public charter school and its proposed constitution and bylaws.	
2. An explanation of how support services will be provided. These services include, but are not limited to: 1) food services; 2) school health services; 3) custodial services; 4) extracurricular activities; and 5) security services.	
3. An explanation of any partnerships or contractual relationships (education management organization, food services, school health services, custodial services, security services, etc.) central to the school's operations or mission, including information regarding the relationship of all contractors to the governing board of the public charter school, and information regarding how contractors and the employees of the contractors having direct contact with students will comply with the provisions of Section 22.1-296.1, of the *Code of Virginia*.	
4. A detailed start-up plan, identifying tasks, timelines, and responsible individuals.	
5. A proposed organization chart.	
6. Plans for recruiting school leadership and staff.	
XI. Employment Terms and Conditions: An explanation of the relationship that will exist between the proposed public charter school and its employees, including evidence that the terms and conditions of employment have been addressed with affected employees is provided. (Sections 22.1-212.13, 22.1-296.1 and 22.1-296.2, *Code of Virginia*) The following components are addressed:	☒Yes ☐ No
1. A plan that addresses the qualifications of teachers and administrators at the public charter school, including compliance with state law and regulation regarding Virginia Board of Education licensing endorsements.	
2. A plan to provide high-quality professional development programs (Section 22.1-253.13:5, *Code of Virginia*).	
3. Provisions for the evaluation of staff at regular intervals and in accordance with state law and regulation.	
4. Provisions for a human resource policy for the public charter school that is consistent with state and federal law.	
5. Notification to all school employees of the terms and conditions of employment	
6. A staffing chart for the school's first year and a staffing plan for the term of the contract.	
XII. Liability and Insurance: A description of the agreement between the parties regarding their respective legal liability and applicable insurance coverage is provided. (Section 22.1-212.16, *Code of Virginia*) The following components are addressed:	☒Yes ☐ No
1. The types of insurance for the public charter school, its property, its employees, the charter school management committee, and the board and the levels of coverage sought. Types of insurance include, but are not limited to: a) general liability; b) health; and c) property.	

Required Application Components	Does the Response Meet the Board's Approval Criterion?
2. A justification for each type of insurance coverage sought.	
3. A description of any plans of the public charter school to provide indemnity for the local school division.	
XIII. Transportation: A description of how the public charter school plans to meet the transportation needs of its pupils is provided. The following components are addressed:	☒ Yes ☐ No
1. A description of how the transportation of students will be provided: a) by the local school division; b) by the public charter school; c) by the parent(s); or d) through a combination of these options.	
2. If transportation services will be provided by the public charter school, explain whether the school will contract for transportation with the local education agency or with another entity or have its own means of transportation and indicate whether transportation will be provided to all students attending the school.	
3. A description of transportation services for students with disabilities in compliance with Section 22.1-221of the *Code of Virginia* and the Board's *Regulations Governing Special Education Programs For Children With Disabilities in Virginia*.	
XIV. Residential Charter Schools: If the application is for a residential charter school for at risk students, the following components must be addressed:	☐ Yes ☐ No ☒ Not Applicable
1. A description of the residential program to include: a) the educational program; b) a facilities description to include grounds, dormitories, and staffing; c) a program for parental education and involvement; d) a description of after-care initiatives; e) the funding the residential facility and other services provided; f) any counseling and other social services to be provided and their coordination with current state and local initiatives; and g) a description of enrichment activities available to students.	
2. A description of how the facility will be maintained including, but not limited to: a) janitorial and regular maintenance services and b) security services to ensure the safety of students and staff.	
XV. Disclosures: Disclose ownership or financial interest in the public charter school by the charter applicant and the governing body, administrators, and other personnel of the proposed public charter school, and require that the applicant and the governing body, administrators, and other personnel of the public charter school shall have a continuing duty to disclose such interest during the term of any charter. The following components must be addressed:	☒ Yes ☐ No
1. A description of how the applicant and members of the management committee will disclose any ownership or financial interest.	
2. Information regarding the frequency by which such disclosures will be made (Section 22.2-3114, *Code of Virginia*).	
3. A description of ownership or financial interest of the applicant and/or members of the management committee in the proposed charter school. This includes any relationships that parties may have with vendors performing services at the school.	
Assurances The certification statement has been signed.	☒ Yes ☐ No

Virginia Board of Education Agenda Item

Agenda Item: K. **Date:** April 26, 2012

Title	Final Review of a Proposal from Virginia Beach Public Schools to Establish a Governor's STEM Academy for Engineering, Marketing, and Information Technology Studies		
Presenter	R. Lisette Diehl, Technology Academy Coordinator, Landstown High School and Technology Academy, Virginia Beach City Public Schools Lolita B. Hall, Director, Office of Career and Technical Education Services		
E-mail	ldiehl@vbschools.com lb.hall@doe.virginia.gov	**Phone**	(757) 648-5505 (804) 225-2051

Purpose of Presentation:
Other initiative or requirement. Specify below:
Final review and acceptance of the Proposal to Establish a Governor's STEM Academy for Engineering, Marketing, and Information Technology Studies at Landstown High School and Technology Academy, Virginia Beach City Public Schools

Previous Review or Action:
Previous review and action. Specify date and action taken below:
First review: March 22, 2012
Item was accepted for first review

Action Requested:
Final review: Action requested at this meeting.
Date: April 26, 2012

Alignment with Board of Education Goals: Please indicate (X) all that apply:

X	Goal 1: Expanded Opportunities to Learn
	Goal 2: Accountability of Student Learning
	Goal 3: Nurturing Young Learners
	Goal 4: Strong Literacy and Mathematics Skills
	Goal 5: Highly Qualified and Effective Teachers and Administrators
	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify: Governor's STEM Academy

Background Information and Statutory Authority:
Goal 1: The Governor's STEM Academy is designed to expand opportunities for the general student population to acquire STEM literacy and other critical skills, knowledge, and credentials that will prepare them for high-demand, high-wage and high-skill careers.

Partnerships establishing academies must include at least one public school division, business and

industry, and postsecondary education. On November 29, 2007, the Board of Education approved the criteria to establish a Governor's STEM Academy. Subsequently, on March 19, 2008, the Board approved the standards for the Governor's Career and Technical Education Exemplary Standards Awards Program, which all Career and Technical Academies must implement.

As required by the Board of Education, the State Council of Higher Education for Virginia (SCHEV) has reviewed the attached proposal and recommends that the Board approve the proposal. Staff members of the Virginia Department of Education (DOE) have also reviewed the proposal in the context of the Board's criteria. An executive summary of the proposal is in Attachment A. Attachments B and C are the reports from the reviews by SCHEV and the DOE. Attachment D is the complete proposal.

Currently, there are ten Governor's STEM Academies in Virginia. They are located in Arlington County, Chesterfield County, Halifax County, Hampton City, Loudoun County, Richmond City, Russell County, Stafford County, Suffolk City, and Carroll County.

Summary of Important Issues:
The proposed Governor's STEM Academy for Engineering, Marketing, and Information Technology Studies is conceptualized from a planning partnership that consists of Landstown High School and Technology Academy; Virginia Commonwealth University School of Engineering; Norfolk State University College of Science, Engineering and Technology; Tidewater Community College Division of Information Technology & Business; Old Dominion University STEM Marketing Education Program; ECPI University; Bryant & Stratton College; ITT Technical Institute; Johnson & Wales University; Armed Forces Communications & Electronics Association Hampton Roads Chapter; Ten80 Education, Inc.; Newfangled Solutions, LLC; Whitebox Learning; Virginia FIRST; STIHL Inc.; InMotion Hosting; Virginia Beach Schools Federal Credit Union; City of Virginia Beach Parks and Recreation; Junior Achievement of Greater Hampton Roads; Goodwill Industries; Norfolk Admirals Hockey; Beach Windows & Siding; Total Sportswear Solution, LLC; Food Lion; Chick-fil-a; Rite Aid; Cinema Café; College House/Oarsmen; and Jake's Smokehouse BBQ.

The proposed academy targets three pathways in three career clusters. The first pathway, Engineering and Technology is in the Science, Technology, Engineering, and Mathematics (STEM) Cluster. Students enrolled in the pathway will be actively involved with high-tech devices, engineering graphics, mathematical concepts, and scientific principles through engineering-design experiences. Students enrolled in this pathway will be introduced to the career choices in the engineering and technology areas and prepare for postsecondary education in one of the engineering and technology fields.

The second pathway, Professional Sales is in the Marketing Career Cluster. This pathway involves the transfer of goods and services in the economy, both to businesses and to individual consumers. Learners are prepared for careers in planning, managing and performing marketing services.

The third pathway, Web and Digital Communications is in the Information Technology Cluster. This pathway involves creating, designing and producing interactive multimedia products and services, including development of digitally-generated or computer-enhanced media used in business, training, entertainment, communications and marketing. Organizations of all types and sizes use digital media (the World Wide Web, CD-ROM, DVD) to communicate with existing and potential customers, to track transactions, and to collaborate with colleagues.

Impact on Fiscal and Human Resources:
Funding must be provided at the local level.

Timetable for Further Review/Action:
The proposed beginning date for the Governor's STEM Academy for Engineering, Marketing, and Information Technology Studies at Landstown High School and Technology Academy, Virginia Beach City Public Schools, is fall of 2012.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education approve the proposal to establish a Governor's STEM Academy for Engineering, Marketing, and Information Technology Studies at Landstown High School and Technology Academy, Virginia Beach City Public Schools.

Governor's STEM Academy for

Engineering, Marketing, and Information Technology Studies

Executive Summary

April 26, 2012

Partnership Members:	Landstown High School and Technology Academy; Virginia Commonwealth University School of Engineering; Norfolk State University College of Science, Engineering and Technology; Tidewater Community College Division of Information Technology & Business; Old Dominion University STEM Marketing Education Program; ECPI University; Bryant & Stratton College; ITT Technical Institute; Johnson & Wales University; Armed Forces Communications & Electronics Association Hampton Roads Chapter; Ten80 Education, Inc.; Newfangled Solutions, LLC; Whitebox Learning; Virginia FIRST; STIHL Inc.; InMotion Hosting; Virginia Beach Schools Federal Credit Union; City of Virginia Beach Parks and Recreation; Junior Achievement of Greater Hampton Roads; Goodwill Industries; Norfolk Admirals Hockey; Beach Windows & Siding; Total Sportswear Solution, LLC; Food Lion; Chick-fil-A; Rite Aid; Cinema Café; and College House/Oarsmen; Jake's Smokehouse BBQ.
Lead Entity:	Landstown High School and Technology Academy
Fiscal Agent:	Virginia Beach City Public Schools
Contact Person:	Mrs. R. Lisette Diehl Technology Academy Coordinator 757-648-5505 ldiehl@vbschools.com
Academy Location:	The Governor's STEM Academy for Engineering, Marketing, and Information Technology Studies Landstown High School and Technology Academy 2001 Concert Drive Virginia Beach, Virginia 23456
Number Students:	The Governor's STEM Academy will have the capacity to enroll 180 students, grades 9-12. During the initial school year (2012-2013) applications will be accepted for 40 students. Future plans to expand all three pathways are in development.
Career Pathways:	Engineering and Technology Professional Sales Web and Digital Communications
Academy Goals and Description:	The overall goals of the Governor's STEM Academy are to provide students with the 21st-century, STEM-enriched technological skills and knowledge necessary to succeed in postsecondary education and in the world of work through authentic, rigorous, project-based work while building partnerships with parents, community, and business leaders to meet these goals.

Specific Governor's STEM Academy objectives include:

- Provide students with guidance in designing their sequential four-year high school program and postsecondary plan to ensure they make informed decisions;
- Equip students with the knowledge and skills necessary to succeed in a STEM-related field of technology in a highly competitive 21st-century world;
- Develop critical-thinking, problem-solving, and decision-making skills required for the state-of-the-art 21st-century workplace;
- Prepare students for postsecondary education and/or the skills for a successful school-to-work transition;
- Establish partnerships with educational institutions, the business community, and the technology industry to establish internship and mentorship opportunities, as well as programs for expanded learning to extend, enrich, and refine student learning and link the resources of community, business, and industry to education;
- Deliver a series of sequential courses for students with multiple entry and exit points depending on their individual goals, abilities, and interests in order to ensure excellence and equity;
- Offer students opportunities to attend classes which reflect industry standards and allow them to earn industry certifications; and
- Encourage students to participate in competitions to enhance their skills and acknowledge their accomplishments.

Highlights of the Program:

As a result of participating in the Governor's STEM Academy in the pathways of Engineering and Technology, Professional Sales, and Web and Digital Communications, students will:

- Gain a deeper understanding of the skills and knowledge incorporated in their fields of study;
- Benefit from specialized, project-based courses which develop critical-thinking, problem-solving, and decision-making skills, preparing them for the 21st-century world;
- Acquire greater communication and collaborative skills;
- Develop workplace readiness skills;
- Receive opportunities to earn industry certifications preparing them to be more competitive in the work force and when applying to advanced training schools or postsecondary institutions;
- Obtain meaningful, real-life, hands-on experiences in their career pathway; and
- Profit from opportunities for internships, mentorships, and cooperative education, providing the student with an advantage when entering postsecondary education and/or the workplace.

Attachment B

The State Council of Higher Education for Virginia

Review of Governor STEM Academy Proposal

Name of Lead Entity on Proposal: Landstown High School and Technology Academy

Date of Review: March 14, 2012

The State Council of Higher Education for Virginia recommends approval of the Governor's STEM Academy for Engineering, Marketing, and Information Technology Studies as a Governor's STEM Academy.

Peter Blake
Director
State Council for Higher Education

3/15/12
Date

Virginia Department of Education
Governor's STEM Academy
Proposal Review Checklist

Final Review

Title of Proposal: Governor's STEM Academy for Engineering, Marketing, and Information Technology Studies

Lead Entity for Proposal: Mrs. R. Lisette Diehl, Technology Academy Coordinator

Date of Review: April 10, 2012

Virginia Department of Education
Governor's STEM Academy
Proposal Review Checklist

I. Partnership Capacity

Partnerships desiring to implement a Governor's STEM Academy shall provide the Department of Education with evidence of the following:

Criteria	Documentation			Comments
	Full	Partial	None	
A. An active, ongoing planning committee, including a list of members and signed certifications from each that they are willing and able to serve in that capacity. At a minimum, members must represent K-12 education (superintendent or designee), higher education, and business and industry. All partners must be represented on the committee.	X			
B. An advisory committee, including a list of members and signed certifications from each that they are willing and able to serve in that capacity.	X			
C. A written memorandum of agreement among school divisions, local businesses, postsecondary institutions, and any other partners that outlines ways in which community resources will contribute to the Governor's STEM Academy to broaden the scope of students' educational experiences.	X			

Criteria	Documentation			Comments
	Full	Partial	None	
D. A statement of assurances that the Governor's STEM Academy Planning Committee has reviewed provisions of *Administrative Procedures Guide for the Establishment of Governor's STEM Academies* and agrees to follow the guidelines set forth in the document (see appendix).	X			
E. A statement of assurances that, if applicable, an ongoing Governing Board will be established to reflect current Board of Education regulations relative to jointly operated schools and programs (see appendix).	X			
Comments:				

II. Need/Rationale for the Academy

Partnerships desiring to implement a Governor's STEM Academy shall provide the Department of Education with evidence of the following:

Criteria	Documentation			Comments
	Full	Partial	None	
A. Demonstration of the need/rationale for the Academy. This statement should be concise and state the major reasons to have a Governor's STEM Academy, including need at the state, local and/or regional levels.	X			
B. A description of the enhanced or additional offerings in science, technology, engineering, and/or mathematics (STEM) that will meet the need described above.	X			
C. A fiscal agent that is a public entity, including a certification that the entity is willing and able to serve in that capacity.	X			

Criteria	Documentation			Comments
	Full	Partial	None	
Comments:				

III. Program Description

Each Governor's STEM Academy planning committee shall develop cooperatively with local school divisions, business, community, and higher education partners and have available for review and dissemination, a program description that includes:

A. A statement of program goals addressing the following criteria:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Rigorous academic content in career and technical instruction;	X			
2. An emphasis on STEM career pathways;	X			
3. Individualized high school plans to ensure course selections that are aligned with students' transition and career goals after high school;	X			
4. Evidence that graduates will complete a college and work readiness curriculum, minimally at the level specified for Commonwealth Scholars Course of Study (State Scholars Core) with the possibility of pre-approved substitution of equivalent courses where there may be more relevant course selections for a particular career pathway;	X			
5. Evidence that graduates will qualify for the Technical and/or the Advanced Technical Diplomas; and	X			Application focuses on standard diploma and advanced studies diploma; however, the application will satisfy the requirements for the technical and/or advanced technical diplomas.
6. Incorporation of Virginia's Workplace Readiness Skills.	X			
Comments:				

B. A statement of program objectives and performance measures to:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Improve academic achievement of Academy students;	X			
2. Increase completion of dual enrollment courses;	X			
3. Provide workplace readiness experiences for students through strong partnerships with businesses;	X			
4. Increase high school graduation rates;	X			
5. Reduce dropout rates;	X			
6. Increase enrollment and retention in postsecondary education;	X			
7. Increase the proportion of students completing a college and workplace ready curriculum in high school;	X			
8. Reduce the proportion of students requiring remediation in college;	X			
9. Increase the number of industry certifications awarded to high school students; and	X			
10. Increase the number of graduates employed in high-wage, high-demand and high-skill careers.	X			
Comments:				

C. A brief description of the proposed program, including:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Site location;	X			
2. Number of students to be served;	X			
3. Grade levels;	X			
4. General curriculum design;	X			
5. List of courses to be delivered;	X			
6. Description of how/where the courses will be delivered. Courses may be delivered on a high school, technical center or community college campus, online, or in other innovative ways; and	X			
7. Designation of full-day or part-day, academic-year program.	X			
Comments:				

D. Evidence of participation in the Governor's Exemplary Standards Award Program for Career and Technical Education

	Documentation			Comments
	Full	Partial	None	
	X			.
Comments:				

E. Program and course descriptions

E.1. At least two well-articulated career pathways must be included that meet the following criteria:

Criteria	Documentation			Comments
	Full	Partial	None	
Pathway #1				
a. Must include opportunities to earn industry credentials, postsecondary certificates, diplomas or associate degrees while in high school and pursue additional industry credentials and academic degrees at the associate, bachelor's and graduate levels. These pathways may be in the same or different career clusters.		X		
b. Must be in a field identified by a statewide authority or organization, such as the Virginia Economic Development Partnership or the Virginia Research and Technology Advisory Commission, as a strategic growth area for Virginia. Examples include biosciences, information technology, automotive technology and motor sports, as well as modeling and simulation and nanotechnology **or**	X			

Criteria	Documentation			Comments
	Full	Partial	None	
c. Must address regional and local work force demand in a high-wage, high-skill field as identified by employers and work force officials.	X			
d. At least one pathway must be in a STEM-related field. This career pathway should drive the innovative capacity of the region and/or state.	X			
Comments:				

Criteria	Documentation			Comments
	Full	Partial	None	
Pathway #2				
a. Each career pathway must include opportunities to earn industry credentials, postsecondary certificates, diplomas or associate degrees while in high school and pursue additional industry credentials and academic degrees at the associate, bachelor's and graduate levels. These pathways may be in the same or different career clusters.	X			
b. Must be in a field identified by a statewide authority or organization, such as the Virginia Economic Development Partnership or the Virginia Research and Technology Advisory Commission, as a strategic growth area for Virginia. Examples include biosciences, information technology, automotive technology and motor sports, as well as modeling and simulation and nanotechnology, or	X			

Criteria	Documentation			Comments
	Full	Partial	None	
c. Must address regional and local work force demand in a high-wage, high-skill field as identified by employers and work force officials.	X			
d. Of the two pathways described, at least one must be in a STEM-related field. This career pathway should drive the innovative capacity of the region and/or the state.	X			
e. Additional career pathways may address one of the areas described above, or an area identified by the partnership as an area of interest, growth, or expansion for students in the service area of the Academy.	X			
Comments:				

E.2 List of all requirements for successful program completion.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

E.3 Academy graduates must achieve one or more of the following benchmarks:

Criteria	Documentation			Comments
	Full	Partial	None	
a. Earn one or more industry certifications or state occupational licenses, and/or demonstrate competencies on an assessment instrument 6recognized by postsecondary institutions such as CLEP examinations, collaboratively designed or mutually approved end-of-course tests, college placement tests, or student portfolios reviewed by a team of college and high school faculty; **or**	X			
b. Earn at least 9 transferable college credits as defined in the Early College Scholars program (includes dual enrollment, AP and other options); **or**	X			
c. Earn an Associate Degree.				
Comments:				

E.4 Significant work-based experience must be included representing additional instruction or training beyond the classroom such as:

Criteria	Documentation			Comments
	Full	Partial	None	
a. Cooperative Education; or	X			
b. Internships; or	X			
c. Job Shadowing; or	X			
d. Mentorships; or	X			
e. Project-based learning; or	X			
f. Service learning; or	X			
g. A combination of the above.				
Comments:				

F. Length of program and daily schedule: Governor's STEM Academies are defined by program content, not by the location or delivery system of courses. Evidence of the following must be submitted:

Criteria	Documentation			Comments
	Full	Partial	None	
Designation of full-day or part-day, academic-year program.	X			
Comments:				

G. Assurance from the fiscal agent that operating funds and facilities are available to support the Governor's STEM Academy and are adequate to meet the needs of the program

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

H. Materials and equipment to be provided to accomplish program goals and objectives.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

I. Evidence of an internal evaluation process to effect program improvement, including:

Criteria	Documentation			Comments
	Full	Partial	None	
1. A review of the Academy's policies, procedures, and outcomes;	X			
2. A review of the program design and instructional delivery;	X			
3. Consideration of feedback from students, staff, parents, the community, and partnership members; and	X			
4. Annual collection and reporting of data to the Department of Education related to student achievement, goal achievement, and other indicators.	X			
Comments:				

IV. Administrative Procedures

Each Governor's STEM Academy must develop and maintain procedures developed cooperatively with participating partners. There should be evidence of procedures in the four areas that follow.

A. Partnerships - The role of business and industry, public school divisions, and postsecondary institutions in the partnership. The role of workforce and economic development entities should also be included if they are among the partners.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

B. Student recruitment, selection criteria, and admissions.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

C. Code of student conduct and attendance.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

D. Transportation provided by the school division or consortium that is in compliance with all applicable federal and state regulations.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

E. Staff recruitment, selection, and assignment - The Governor's STEM Academy shall hire staff members who meet the Virginia teacher licensure requirements and/or postsecondary faculty qualifications. Where applicable, they must have industry-specific education with training and experience, including industry certification.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

F. Staff development - The program will provide appropriate staff training in addition to staff planning time.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

G. Staff evaluation – Staff will be evaluated according to the human resources policies of the agency or institution employing Academy personnel.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

H. Parent, student and community involvement

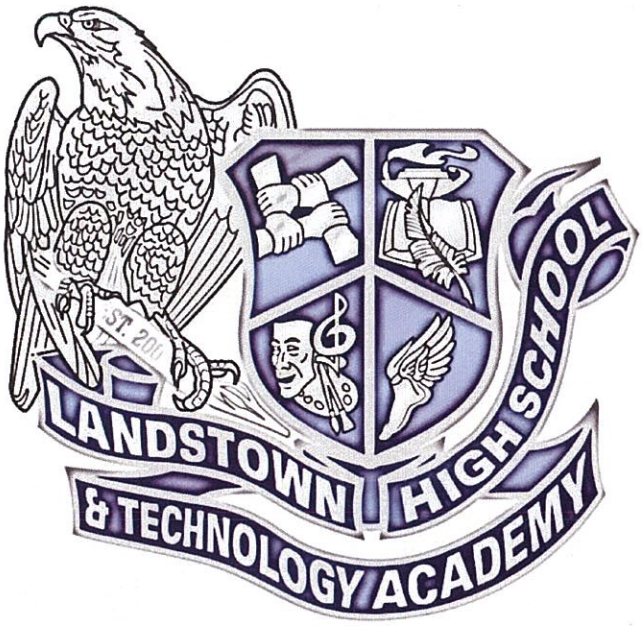
Criteria	Documentation			Comments
	Full	Partial	None	
1. Preparation for entering the Academies should begin by eighth grade.	X			
2. Students, parents, teachers, and counselors should work collaboratively to: a. Complete career interest inventories;	X			
b. Prepare academic and career plans outlining an intended course of study in high school;	X			
c. Review multiple postsecondary pathways and the steps required to pursue them;	X			
d. Participate in career assessments to identify areas students should strengthen to qualify for their selected pathways; and	X			
e. Discuss available diplomas, seals, and other recognitions including admission to specialized programs such as Governor's Academies.	X			

I. Documentation of insurance, budget, and other fiscal information

	Documentation			Comments
	Full	**Partial**	**None**	
Insurance	X			
Budget (from appendix)	X			
Budget Narrative	X			
Other				
Comments:				

Landstown High School and Technology Academy

Virginia Beach City Public Schools



Proposal to Establish a Governor's STEM Academy for Engineering, Marketing, and Information Technology Studies

Submitted for Final Review

April 26, 2012

Governor's STEM Academy for

Engineering, Marketing, and Information Technology Studies

Virginia Board of Education Proposal

Table of Contents

Introduction 1

Rationale/Need 1

Expansion Program to Establish Governor's STEM Academy 4

Current Program Overview 5

Program Goals and Objectives 9

Compass to 2015 10

Programs of Study 18

Business and Information Technology 21

Web and Digital Communications Pathway 22

Web and Digital Communications Pathway Course Descriptions 23

Business and Information Technology Cluster Chart 31

Engineering and Technology 32

Engineering and Technology Pathway 33

Engineering and Technology Pathway Course Descriptions 33

Science, Technology, Engineering & Mathematics Engineering and Technology Cluster Chart 41

Marketing and Entrepreneurship 42

Professional Sales Pathway 42

Professional Sales Pathway Course Descriptions 43

Marketing and Entrepreneurship Cluster Chart 48

Technology Academy Honors English 48

Certifications 49

Performance Measures/Data 52

Academy Five-Year Plan 54

Administrative Procedures 55

Partnerships 55

Student Recruitment/Selection/Admission 58

Code of Student Conduct and Attendance 59

Transportation 59

Staff Recruitment/Selection/Assignment 59

Staff Development 60

Staff Evaluation 60

Parent/Student/Community Involvement 60

Budget Narrative 62

Appendices 64

Appendix A: Planning Committee Members 65

Appendix B: Advisory Committee Members 87

Appendix C: Plans of Study for the Governor's STEM Academy for Engineering, Marketing, and Information Technology Studies 117

Appendix D: Student Application 127

Appendix E: Dual Enrollment Articulation Agreement 139

Appendix F: Memorandums of Agreements 153

Appendix G: Insurance Certificate 210

Appendix H: Statement of Assurance from Fiscal Agent 212

Appendix I: Budget 214

Appendix J: References 216

Introduction

Landstown High School currently houses the Virginia Beach City Public Schools' (VBCPS) Technology Academy. The Technology Academy at Landstown High School began operation, in conjunction with the opening of the new comprehensive high school, in the fall of 2001 as a school-within-a-school concept. For the past 10 years, the Technology Academy has provided an innovative learning environment designed for students to acquire skills needed in higher education, in the workplace, and in emerging technology fields. The program's focus has been to prepare students for advancement to institutions of higher education, advanced technology training, or entry-level jobs.

Due to the variety of interests of a diverse population within the school, as well as the varied employment opportunities available to the students, the program consists of three major areas of focus: Engineering and Technology, Marketing and Entrepreneurship, and Business and Information Technology. Within these expanded programs of study, referred to as strands, students are provided with choices to address their interests, abilities, and skills required for future employment. Students may pursue one, two, or three of these strands based on their needs/interests. In conjunction with each strand, students are enrolled in an honors-level English curriculum that infuses technical writing and technology. The courses offered within each of the strand areas are approved Career and Technical Education (CTE) courses and lead to various industry certifications and CTE completer status.

Approximately 400 students attend the Technology Academy each year. The graduating class is typically between 90 and 100 students per year. Traditionally this group of graduates is awarded well over one million dollars in scholarship monies to invest in furthering their education.

Rationale/Need

Since the inception of the existing program in 2001, the Technology Academy has evolved to meet the growing needs of students as mandated by industry and higher education. We intend to continue expansion of our program to address the demands of the 21st-century

student and the world that awaits them through the Governor's STEM Academy. The original rationale for the Technology Academy program in 2001 was based on the emphasis that the existing and future work force must be prepared to meet the challenges posed by technology (e.g., maximizing efficient use of technology and increasing global awareness). The same reasoning is apparent today with a greater emphasis on specialization and STEM-related fields. Although the statistics today vary greatly from those of a decade ago, the demand still exists. Names may have changed, but certainly not the compelling nature of the need.

According to the K–12 STEM Ed Report Card published by the Alliance for Science & Technology Research in America, the Commonwealth of Virginia will need to fill 404,000 STEM-related jobs by 2018. Virginia is one of four states that will lead the nation in the share of total jobs in the area of information technology and marketing career clusters as reported in the most recent Georgetown University Career Clusters forecast for 2008–2018 by the Center for Education and the Workforce. The introduction of specialized fields such as nanotechnology, advanced manufacturing, biotechnology, chemical engineering, geospatial technology, just to name a few, has broadened the scope of areas to address. With continuously evolving technical innovations and the global expansion of its many applications, students today need carefully designed programs of study that allow them to focus their intellectual development in particular fields.

Our Hampton Roads region currently identifies six major technology industry clusters, namely aerospace, bioscience, coastal energy, modeling and simulation, robotics and unmanned systems, and sensors. Technology developments will require that students not only be prepared to face current demands, but be able to quickly adapt to new ones. Critical thinking and problem-solving are necessary skills, as is flexibility. In previous years, it was thought that basic exposure to these fields in the high school setting would suffice. The past decade has shown that more is needed. In the April 2007 STEM Workforce Challenge report, prepared for the U.S. Department of Labor by Jobs for the Future, it was noted that "... our nation needs to increase the supply and quality of 'knowledge workers' whose specialized skills enable them to work productively within the STEM industries and occupations. It will not be

sufficient to target baccalaureate and advanced degree holders in STEM fields." Our challenge at the secondary level is to provide students with not only the current industry-related skills, but to equip them to adjust to the advancing requisites of today's world. According to Deloitte and the Manufacturing Institute's recent report on talent in the manufacturing industry, "Over the past five years, most manufacturers have redesigned and streamlined their production lines while implementing more process automation. In short, as the industry has changed, the nature of work that it requires is changing as well."

As an existing technology-based academy program, the challenge is designing not only classes, but sequences of studies, that will meet the future needs of our students in specific career pathways. They must have the problem-solving and communication skills necessary for the demands of the workplace now and in the immediate future. It is imperative that they have opportunities to participate in hands-on, project-based learning. Part of their assessment process must offer them the prospect of earning industry certification credentials. Students should be able to partake of on-the-job training and mentoring to provide them with real-life experiences. The curriculum that is delivered in the classroom must emphasize and address these emerging needs.

The classroom environment must also model the future workplace. Rigor and relevance are no longer words to define where instruction should go, but rather where it must be. More importantly, these terms do not just apply to those who are identified as academically-high achievers, but for all students. The teachers who provide this instruction must be qualified not only in content delivery, but in its application. Additionally, the staff must be knowledgeable on how to advise their students about career pathways and higher education offerings. The author of the article, "Advancing the STEM Workforce through STEM-centric Career Development," states, "Only through integration of academic and career and technical education are students best served." The current Technology Academy program offered at Landstown High School merges the best of both worlds, affording our students multiple opportunities to obtain the technical skills and knowledge base that will be required for the 21st-century learner/worker while pursuing his or her studies at the high school level. It is our

desire to expand and enhance our existing program with the implementation of a Governor's STEM Academy for Engineering, Marketing, and Information Technology studies creating plans of study for students to merge higher level mathematics and science courses with their chosen career pathway. Attaining this goal will enable us to recruit additional students pursuing specialized, advance-level studies while garnering further support of institutions of higher learning and business and industry.

Expansion Program to Establish Governor's STEM Academy

To reflect the diversity of our student population and our current program, a cluster from each area of concentration has been selected with a corresponding career pathway for our proposal. Our Governor's STEM Academy will be for Engineering, Marketing, and Information Technology. The skills and knowledge students will acquire will give them a competitive edge when pursuing advanced training and postsecondary education. The Engineering and Technology pathway will lead students to acquire industry certifications in areas that meet the high STEM demands of a local work force that supports the large military and industrial presence in our region. Students pursuing the information technology pathway of Web and digital communications will also benefit. The marketing pathway of professional sales will help prepare our students for projected state needs as well as the local needs in the tourism market. Additionally, the three pathways will incorporate the essential workplace readiness skills. Through project-based learning and work-related experiences, students will garner skills in research, communication, project management, collaboration, and leadership. Students in the Governor's STEM Academy may also participate in the co-curricular organizations of DECA, FBLA, and TSA and the wealth of established competitions and cooperative education opportunities. All of these real-life experiences and applications will further prepare students for their future. Enhanced co-curricular activities and units of study will be designed and utilized to maximize instruction and reinforce learning and applications of skills.

Current Program Overview

The Landstown High School Technology Academy is one of seven divisionwide specialized academic programs in the Virginia Beach Public City Schools. It is located within the comprehensive high school building of Landstown High School at 2001 Concert Drive in Virginia Beach, Virginia. It features a cutting-edge curriculum especially designed for students who demonstrate a profound interest in and talent for technology. Landstown High School is the only high school in the division to offer students an opportunity to focus their learning on the integration of business and information technology, engineering and technology, and marketing and entrepreneurship—critical areas of the emerging workplace. The primary emphasis of the Technology Academy is to provide students within our division the opportunity to enhance their core curriculum high school experience with specific coursework and skills in the areas of engineering and technology (STEM), marketing and entrepreneurship, and business and information technology. Guided by our division's Strategic Plan for Student Success, "Compass to 2015," the Technology Academy strives to provide students with a stellar educational background to prepare them for the 21st-century work force, advanced training, and higher education. As a result of these efforts, Landstown High School and Technology Academy was ranked as one of the top six percent of all high schools in the country by The Washington Post in 2010 and has been recently identified as a Microsoft IT Academy. During the 2009–2010 school year, the Engineering and Technology, Business and Information Technology, and Marketing and Entrepreneurship departments participated in the Governor's Exemplary Standard review. All three programs were awarded the status of "achieving," only points away from the highest level of "exemplary" status.

Landstown High School's general population is comprised of nearly 2,400 students. The Governor's STEM Academy will offer courses to approximately 400 students ranging from grades 9 to 12. Each grade level will consist of about 100 students. Currently 63 students are pursuing careers in Marketing and Entrepreneurship, 73 students in Information Technology, and 249 in Engineering and Technology. As a result of a thoughtful recruiting process, the program is well represented by students of all backgrounds, ethnicity, and both genders. Prior

to acceptance into the program, students select one or more concentrated career pathways from within the engineering and technology, marketing and entrepreneurship, and/or Business and Information Technology programs of study. The innovative learning environment of the Technology Academy provides students the added advantage of combining academic and technical training that will prepare them for a variety of post-graduation choices, such as higher education, advanced technical training, or the job market. The Academy utilizes Web-based and online learning, and our classrooms are equipped with advanced-level computers, software, and equipment. There is flexibility within the program for students to broaden their exposure to multiple career clusters. All Academy classes are **CTE-approved courses**. Several of the courses, such as Advanced Placement (AP) Computer Science, Physics of Technology, and Honors Academy English, carry core subject credits for mathematics, science, and English. **Verified credit** can be earned in any course where the student has successfully passed an industry certification examination. The program is preparing to expand its offerings in the social sciences discipline through AP Government classes. **Dual enrollment** courses were established with the inception of the Technology Academy for the English sequences in conjunction with Tidewater Community College. Additional specialty courses and industry certifications are accessible through the Advanced Technology Center. Landstown High School and Technology Academy currently offer a variety of 22 industry certifications at our site. Each of the program sequences are four-year programs complemented with accompanying **industry certifications** leading to specific career pathways. Overlapping within departmental offerings allows students to maximize their studies and skills while allowing for flexibility in options after graduation. The Technology Academy core courses offered within the approved program are exclusive to the Academy and are not available at any other high school setting within the division. Upon completion of two full-credit CTE courses, **CTE completer status** is attained. Students who successfully complete four or more of the approved Technology Academy courses are awarded the **Academy seal** upon graduation. Students satisfying all of the mathematics requirements for the Advanced Studies diploma (with a B average) in addition to earning an industry certification, acquiring a professional license in a CTE field from the Commonwealth of Virginia, or passing an examination approved by the Board of Education

from the Commonwealth that confers college-level credit in the area of technology or computer science will be awarded the **Seal of Advanced Mathematics and Technology**. Those students who complete a prescribed sequence of courses in a CTE concentration and meet all of the additional requirements will receive the **Career and Technical Education Seal**. The majority of students in the program are seeking Advanced Studies diplomas. While attending the program, students may earn credit towards an Associate's Degree in Technical Studies from Tidewater Community College. Students may participate in the state **Early College Scholars Program** by earning 15 or more college credits with successful completion of advanced placement courses and/or dual enrollment. Additionally, as many as 12 college credit hours can be earned for successful completion of two years of dual enrollment English from Tidewater Community College.

Students attending the Technology Academy select a minimum of one Academy course to pursue each year on campus. Based on availability, students may take as many Academy classes each year as their schedule will permit. Academy classes are elective classes with complementing core classes including a four-year sequence of honors-level English classes. The program is divided into three programs of study: Engineering and Technology, Business and Information Technology, and Marketing and Entrepreneurship. Each of these programs of study offers detailed sequences of courses to complete for industry certification and to prepare the student for specific STEM career pathways. They are aligned so that students may earn specific industry certifications, Career and Technical Education completer status, and meet the requirements for a specific diploma.

Landstown High School and Technology Academy is well into its second year as a National Demonstration School for the internationally acclaimed AVID (Advancement Via Individual Determination) Program. We are one of only two such sites on the East Coast. All courses taught on our campus infuse WICR (writing, inquiry, collaboration, and reading) strategies. The Academy program is strongly focused on project-based learning. In keeping with our division strategic plan for student success, "Compass to 2015", teachers engage students in meaningful, authentic, and rigorous work through the use of innovative

instructional practices and supportive technologies that will motivate the students to be self-directed and inquisitive learners. Performance-based assessments are utilized to measure students' success in meeting 21st-century skills. Augmented curricula are integrated into classroom instruction to address 21st-century skills, as well. Indicators such as follow-up data from employers and colleges are collected to assess graduates' college and workplace readiness.

Students enrolled in any Engineering and Technology, Marketing and Entrepreneurship, or Business and Information Technology class are eligible to participate in the corresponding student organization. **Engineering and Technology students are affiliated with the Technology Student Association (TSA)**. TSA is a national student organization devoted to teaching technology education to young people promoting personal growth, leadership, and opportunities in technology, innovation, design, and engineering. Its mission is to inspire students to prepare for careers in a technology-driven world. Members apply and integrate science, technology, engineering, and mathematics concepts through class activities, concept events, and related programs. The teachers promote technology literacy, leadership, and problem solving to the students.

Marketing and Entrepreneurship students are associated with the Distributive Education Clubs of America (DECA), an international association of marketing students preparing emerging leaders and entrepreneurs in marketing, finance, hospitality, and management. The mission of DECA is to enhance the co-curricular education of students with interests in marketing, management, and entrepreneurship. DECA helps students develop skills and competence for marketing careers, build self-esteem, experience leadership, and participate in community service activities. DECA's objective is to support the development of marketing and management skills in career areas such as hospitality, finance, sales and service, business administration, and entrepreneurship. Programs and activities are tailored to the specific career interests of students and include technical skills, basic scholastic and communication skills, human relations and employability skills, with a strong emphasis on economics and free enterprise.

The corresponding student organization for Business and Information Technology students is the Future Business Leaders of America (FBLA). Future Business Leaders of America-Phi Beta Lambda is an educational association of student members preparing for careers as entrepreneurs in the business world. FBLA-PBL provides innovative leadership development programs and activities to blend business and education together.

All students enrolled in the Academy program and meeting the eligibility requirements may participate in the National Technical Honor Society. This organization is devoted to creating and fostering relationships among industry, business, and educational communities. Active students may compete for scholarships and additional career opportunities. Using Pipeline NC, members have access to an innovative Web-based system that allows students to collaborate with businesses and educators.

Select students within the Engineering strand participate in the Opportunity Inc. STEM 101 program. Upon completion, these students receive three hours college credit from Norfolk State University. The course focus is innovative technology related to science and mathematics and workplace readiness skills.

Program Goals and Objectives

The overall goals of the Landstown Technology Academy and proposed Governor's STEM Academy are to provide students with the 21st-century technological skills and knowledge necessary to succeed in postsecondary education and in the world of work. Specific Academy objectives include the following:

- Provide students with guidance in designing their sequential, four-year high school program and postsecondary plan to ensure they make informed decisions.
- Provide students with the knowledge and skills necessary to succeed in a STEM-related field of technology in a highly competitive 21st-century world.
- Develop critical-thinking, problem-solving, and decision-making skills required for the 21st-century workplace.

- Prepare students for postsecondary education and/or the skills for a successful school-to-work transition.
- Build partnerships with educational institutions, the business community, and the technology industry to establish internship and mentorship opportunities, as well as programs for expanded learning to extend, enrich, and refine student learning and link the resources of community, business, and industry to education.
- Provide a series of sequential courses for students with multiple entry and exit points depending on their individual goals, abilities, and interests in order to ensure excellence and equity.
- Provide students with opportunities to attend classes that reflect industry standards and allow them to earn industry certifications.
- Encourage students to participate in competitions to enhance their skills and acknowledge their accomplishments.

Compass to 2015

In addition to goals established for the Technology Academy, our division developed a strategic plan for student success, "Compass to 2015." This plan specifically addresses goals for preparing our students for the 21st-century. The objectives provide key strategies and measures for meaningful, authentic, rigorous work, and balanced assessment. It also strives to close achievement gaps, build partnerships with parents, community, and business leaders, and develop staff to meet these goals.

The expected student outcomes outlined in "Compass to 2015" complement those of the existing Technology Academy program and proposed Governor's STEM Academy for Engineering, Marketing, and Information Technology. The Academy performs continuous self-evaluations to assess performance and goal attainment for the strategic plan goals.

COMPASS TO 2015 VBCPS Division Plan for Student Success

VBCPS Outcomes for Student Success

Our primary focus is on teaching and assessing those skills our students need to thrive as 21st-century learners, workers and citizens. All VBCPS students will be:

- Academically proficient
- Effective communicators and collaborators
- Globally aware, independent, responsible learners and citizens
- Critical and creative thinkers, innovators and problem solvers

Strategic Goal

Recognizing that the long range goal of the VBCPS is the successful preparation and graduation of every student, the near term goal is that by 2015, 95 percent or more of VBCPS students will graduate having mastered the skills that they need to succeed as 21st century learners, workers and citizens.

Strategic Objective 1	Strategic Objective 2	Strategic Objective 3
All teachers will engage every student in meaningful, authentic and rigorous work through the use of innovative instructional practices and supportive technologies that will motivate students to be self-directed and inquisitive learners.	VBCPS will develop and implement a balanced assessment system that accurately reflects student demonstration and mastery of VBCPS outcomes for student success.	Each school will improve achievement for all students while closing achievement gaps for identified student groups, with particular focus on African American males.
• Identify the 21st-century skills for VBCPS. • Integrate 21st-century skills into K-12 curriculum and instruction. • Define, develop, and promote effective teaching practices that maximize rigor and meaningful engagement for all students. • Integrate supportive technologies into the instructional program delivery.	• Develop and/or adopt varied assessments, including performance-based assessments, to create a balanced assessment system that measures VBCPS outcomes for student success. • Provide training for teachers and administrators on developing, using, scoring, and interpreting varied types of assessments to create a balanced assessment system. • Monitor and evaluate VBCPS assessments to ensure quality and fidelity. • Develop a process to monitor and report student performance on VBCPS divisionwide assessments.	• Design and implement a transition process to ensure that students are prepared for the next school level. • Develop and implement the K-12 Literacy Initiative, with an emphasis on monitoring K-2 reading achievement. • Develop and implement a Response to Intervention (RtI) model. • Review and revise the school improvement process so it aligns with the strategic plan. • Continue to monitor and engage in efforts directed at closing the achievement gap with specific focus on the African American male identified from the 2007 Program of Work.

Strategic Objective 4	Strategic Objective 5
VBCPS will create opportunities for parents, community and business leaders to fulfill their essential roles as actively engaged partners in supporting student achievement and outcomes for student success.	VBCPS will be accountable for developing essential leader, teacher and staff competencies and optimizing all resources to achieve the school division's strategic goal and outcomes for student success.
• Promote mentorship programs throughout the school division. • Work to bridge the "digital divide" by increasing student access to technology and Internet among the division's families. • Strengthen collaboration with city agencies, civic groups, community and faith-based organizations that have similar educational missions. • Promote enhanced understanding and support of the Compass to 2015 Strategic Plan and the division's identified 21st-century skills through various communication strategies. • Develop avenues for parental and community outreach that are designed to support the outcomes for student success, with particular emphasis on underserved families.	• Develop a divisionwide master framework for professional development and training that optimizes resources and addresses the essential competencies needed by teachers, administrators, professional/supervisory and classified staff. • Provide opportunities for school leaders and teachers to observe successful practices that maximize high levels of student engagement in challenging work. • Develop and provide equitable access to quality learning tools and technologies. • Revise and align evaluation instruments. • Develop a model for teacher, administrator, and staff training/professional development and capacity building to include strategies for the integration of 21st-century skills. • Ensure the development, use, and support of Professional Learning Communities focused on improving academic achievement for all students by enhancing teachers' and administrators' expertise.

Compass to 2015

Landstown High School Technology Academy

Self-Assessment

Strategic Objective 1

All teachers will engage every student in meaningful, authentic, and rigorous work through the use of innovative instructional practices and supportive technologies that strive to motivate students to be self-directed and inquisitive learners.

Business and Information Technology

- The Business and Information Technology Department uses state-of-the-art software with hands-on instruction.
- AVID strategies are incorporated in all Business and Information Technology classes.
- The Oracle Academy and Web Development classes use online classrooms so students can access curriculum and practice environments from any computer with an Internet connection (home, school, portable media players and smart phones).
- With the exception of keyboarding, all Business and Information Technology courses offer industry certification exams to qualified students.
- Students are provided with self-test software to individualize preparation for certification exams.
- The Virtual Enterprise (VE) method of instruction is used in our management course to provide students with an opportunity to write business plans, and open and operate a simulated, virtual business that will interact with other VE firms throughout the world.
- Teachers incorporate the Virginia Workplace Readiness (WRS) skills into daily lessons to prepare students for the certification exam.
- Microsoft IT Academy online, self-directed curriculum, Certiport and Adobe self-test software are utilized to prepare students for industry certification.

Marketing and Entrepreneurship

- Global Marketing and Commerce students create an Export Plan.
- Advanced Fashion Marketing and Fashion Marketing students produce a Fashion show.
- Students conduct market research for local businesses.
- Advanced Fashion Marketing students complete a buying project that encompasses marketing research, buying, pricing, and selling.
- Internet Marketing students prepare an electronic portfolio.
- Marketing students learn about financial literacy on "Financial Fridays."
- Advanced Entrepreneurship students prepare business plans for both a franchise business and an independent business.
- SER Marketing students plan events such as the LHS Leadership Conference and the Powder Puff football game.
- All marketing students use computer software, i.e., PowerPoint, Publisher, Excel, Word, and Dreamweaver.
- Internet Marketing and Web Development classes work with local businesses to complete a project in Web site design.
- Students gain real-world experience in customer service, visual merchandising, selling, and buying via projects through the school-based enterprise, Eagle's Landing.

Engineering and Technology

- The curriculum is aligned with the National Standards for Technology.
- All courses use the Virginia Department of Education Competency List.
- Each course is aligned through the Correlation of CTE competencies to the Standards of Learning.
- Each teacher utilizes a classroom SharePoint and teacher Web sites for instructional purposes.
- Introduction to Engineering classes utilize online software to experience modeling and simulation.

- Engineering and Design students experience CNC manufacturing by constructing a CNC mill.
- Engineering and Design students design and construct solar panels to study photovoltaic energy.
- Select students participate in the FIRST FTC competition.
- Through engineering and programming, students define a stated problem, then research and design a solution. Once the machine is built, programming is applied to the machine and troubleshooting can begin, continuing until the desired outcome is achieved.

Strategic Objective 2

VBCPS will develop and implement a balanced assessment system that accurately reflects student demonstration and mastery of VBCPS outcomes for student success.

Business and Information Technology

- The Business and Information Technology Department regularly uses authentic assessments and production-based problems to evaluate student mastery.
- SAM software is used in the CIS classes to demonstrate mastery of competency through interactive responses to questions and student-produced projects.
- Twelve different certifications are offered through courses in the Business and Information Technology Department.
- Students engage in local, regional, state, and national competitions, demonstrating mastery of competencies in Business and Information Technology.

Marketing and Entrepreneurship

- Our curriculum is competency-based and divided into career clusters.
- We provide students with the opportunity to receive industry certifications in customer service, sales, and WRS.
- Students participate in DECA competitive events at the district, state, national, and international levels.

Engineering and Technology

- Teachers provide SchoolNet access for parents to access information on student progress.
- Students have the opportunity to obtain verified credit by taking the NOCTI, AutoCAD and Adobe certifications and Virginia Workplace Readiness Skills Assessment for all career clusters.
- In CAD classes, students are presented with the concepts and commands needed to master the unit. Many students focus on the basic examples from the text, but some students take it further, designing their own solutions that show deep understanding of commands, theories, and drafting principles.

Strategic Objective 3

Each school will improve performance for all students while closing achievement gaps for identified student groups, with particular focus on African American males.

Business and Information Technology

- The Business and Information Technology Department offers an open lab every Tuesday and Thursday for all business students. This is a time for students to receive extra help or just have access to a computer.
- Each teacher has developed Response-to-Student-Needs (RTSN) plans for students not reaching their full potential.
- We encourage all students to participate in our nationally-recognized award-winning co-curricular organization, the Future Business Leaders of America.

Marketing and Entrepreneurship

- We provide the annual leadership conference for all LHS student leaders.
- We hold detention for incomplete assignments until completed.
- Each teacher has developed Response-to-Student-Needs (RTSN) plans for students not reaching their full potential.
- We enforce study time/assignment completion during supervised study blocks.

Engineering and Technology

- We provide Advancement Via Individual Determination (AVID) Mentorships.

- Each teacher has developed Response-to-Student-Needs (RTSN) plans for students not reaching their full potential.
- We provide tracking of Industry Certification data.
- The engineering department offers after-school tech clubs as well as tutoring and extra lab time after school. We stay tuned in to students with particular needs (difficulties at home, in another class, and/or with his/ her peers… .) and develop a good rapport, listen and include proper documentation.

Strategic Objective 4

VBCPS will create opportunities for parents, community, and business leaders to fulfill their essential roles as actively engaged partners in supporting student achievement and outcomes for student success.

Business and Information Technology

- Parents and partners participate in all Academy Night programs, Eagle Expo and Fresh Start, our ninth grade orientation program.
- Local business, community and educational leaders serve as guest speakers.
- Field trips to local colleges and businesses are hosted by partners for the students.
- "Eagle Talk" Series provides monthly guest speakers for Technology Academy students.
- Teachers utilize group e-mails for each class to keep parents informed of class activities.
- Teachers encourage parents and students to use Parent Portal to monitor student progress.
- Teachers promote parental involvement in our co-curricular organization, the Future Business Leaders of America.
- Co-op students work part-time at local businesses to earn high school credit.
- Virtual Enterprise classes partner with local businesses.
- Web Development and Administration classes complete a Web-design project for local businesses.

Marketing and Entrepreneurship

- Students work part-time at many local businesses for high school credit.
- Business leaders serve as project mentors.
- Parental involvement is fostered in DECA activities.
- A parent survey is conducted to assess the program.
- Outside points are assigned to promote volunteerism in the school and community.
- Parent meetings are held prior to field study trips and conferences.

Engineering and Technology

- Parents and partners serve as TSA competition judges.
- Classroom partners are recruited to support mentorship opportunities for students.
- Various partners support the STEM 101 initiative.
- Mentorships with FIRST FTC competition are provided by partners.
- "Eagle Talk" Speaker Series participants are recruited from various businesses and industries related to the engineering pathways.
- We have great participation from parents and local businesses for student school-to-work programs. This offers the student real-life experiences and provides real-world examples of class topics.

Strategic Objective 5

VBCPS will be accountable for developing essential leader, teacher and staff competencies and for optimizing all resources to achieve the school division's strategic goal and outcomes for student success.

Business and Information Technology

- We provide Office 2007 and 2010, School Net, and Certiport Test Prep training to the LHS staff.
- We participate in AVID training, complete Exemplary Standards review, and serve on state curriculum writing teams.
- We participate in Professional Learning Communities and Learning Walks as well as curriculum committees to ensure that our curriculum is always current.

Marketing and Entrepreneurship

- We are Virginia Association of Marketing Educators (VAME) members and participate in the VA DECA State Leadership Conference.
- Teachers attend conferences conducting workshops and serving in leadership roles.
- We complete Exemplary Standards review.
- All teachers are certified in alignment with the industry certifications granted by the department.
- We participate in Professional Learning Communities, conduct peer observations, and practice team teaching.

Engineering and Technology

- TSA, VBCPS STEM Robotics Competition, and the Great Computer Challenge provide leadership and collaborative skills for students.
- The FIRST FTC Competition teaches professionalism to students.
- Teachers participate in curriculum roundtable meetings and Professional Learning Communities.
- We complete Exemplary Standards review, present at regional and state professional conferences, and attend the VTEEA and MODSIM Conference annually.
- Select teachers serve on the Sustainability Committee.

Programs of Study

Students explore the applications of technology through advanced technology coursework and project-based learning. Academy coursework extends beyond the technology-oriented courses offered in regular comprehensive high schools. The Governor's STEM Academy curriculum is organized into three programs of study: Business and Information Technology, Engineering and Technology, and Marketing and Entrepreneurship. Students are required to complete four full electives within a strand sequence to complete their Academy requirements. Each strand sequence prepares the student for particular career pathways (see strand sequence chart). The majority of these pathways are in STEM-related fields for which there is a current identified or predicted need as listed in the proposal need/rationale.

Virginia's Workplace Readiness Skills are deeply embedded and integrated in all courses in conjunction with business partnerships. The following courses will serve as the Governor's STEM Academy curriculum with additional courses added as the Academy grows. Additional related technology courses are offered at the Advanced Technology Center to complement the program.

Titles of exclusive academy courses, listed by program of study, are as follows:

Business and Information Technology

- Computer Information Systems/MCAS
- Advanced Computer Information Systems/Advanced MCAS
- Information Technology Fundamentals
- Database Management and Administration—Oracle
- Advanced Database Management and Administration—PL/SQL
- Web-based Development and Administration
- Business Management/Virtual Enterprise
- AP Computer Science—JAVA

Engineering and Technology

- Bioengineering
- Technical Drawing and Design
- Architectural Drawing
- Engineering Drawing and Design
- Introduction to Engineering Design
- Engineering Design and Development
- Digital Visualization
- Electricity/Electronics I
- Electricity/Electronics II
- Technical Information Technology Support (Senior Design)
- Robotics
- Geospatial Technology

- Digital Visualization
- Materials and Processes Technology
- Physics of Technology

Marketing and Entrepreneurship

- Entrepreneurship Education
- Advanced Entrepreneurship
- Fashion Marketing
- Advanced Fashion Marketing
- Global Marketing and Commerce
- Advanced Global Marketing and Commerce
- Internet Marketing
- Sports, Entertainment, and Recreation Marketing
- Sports, Entertainment, and Recreation Marketing—CO-OP
- Advanced Sports, Entertainment, and Recreation Marketing
- Advanced Sports, Entertainment, and Recreation Marketing—CO-OP
- Travel and Tourism
- Travel and Tourism—CO-OP
- Advanced Travel and Tourism
- Advanced Travel and Tourism—CO-OP

Corresponding Course Offered at the Advanced Technology Center

Business and Information Technology

- Software and Game Development (AT6641)
- Advanced Software and Game Development (AT6642)
- A+ Computer Repair (AT8685)
- Computer Network Administrator I (AT6655)
- Computer Network Administrator II (AT6656)
- CISCO Networking Academy I (AT6657)
- CISCO Networking Academy II (AT6658)

- Digital Design I (AT8570)
- Digital Design II (AT8571)
- Internet Web Professional (AT6630)
- Advanced Internet Web Professional (AT6631)
- Telecommunications I (AT8680)
- Telecommunications II (AT8681)

Engineering and Technology

- Architectural Design (AT8531)
- Computer Aided Drafting and Design I (AT8530)
- Computer Aided Drafting and Design II (AT8531)
- Engineering Technology I (AT8436)
- Engineering Technology II (AT8437)
- Modeling and Simulation (AT8462)
- Marine Engineering and Design (AT8532)

Marketing and Entrepreneurship

- Marketing Management (ME8223)
- Marketing Management CO-OP (ME8222)
- Advanced Marketing Management (ME8243)
- Advanced Marketing Management CO-OP (ME8242)
- Hotel Operations (ME8161)
- Hotel Operations CO-OP (ME8160)
- Hotel Management (ME8165)
- Hotel Management CO-OP (ME8164)

Business and Information Technology

Business and Information Technology focuses on three career clusters. The primary cluster is Information Technology, and the others are Business Management & Administration and Finance. Courses are aligned beginning in the freshman year to direct learning toward a particular career pathway. Students have multiple opportunities to participate in cooperative

education through business partnerships, as well as earn the associated industry certifications related to their studies. A culminating nine-week collaborative project is incorporated into the Web-Development and Administration and Internet Marketing courses. The local participating business partners include Beach Window and Siding, various restaurants, and the Virginia Beach Schools Federal Credit Union. Additionally, Business and Information Technology students collaborate with engineering students to compete in the Great Computer Challenge annually.

Another boost to Business and Information Technology is the inclusion of the Microsoft IT Academy. It provides students with access to the latest Microsoft software and Microsoft course materials, E-Learning, and Microsoft Certification exams. In today's competitive job market, having skills on the latest technology can give students an edge when they apply for their first job. Whether they are planning for a career in technology, science, or business, the Microsoft IT Academy Program gives students hands-on experience with the latest Microsoft technology to help them succeed.

The program also provides internationally-recognized certification and gives Landstown High School and Technology Academy an opportunity to become a test center to provide on-site Microsoft Certification exams.

Another benefit is individualized online training for LHS students who, because of scheduling, may be unable to enroll in our courses. Microsoft IT Academy is also open to the LHS faculty for professional and personal development, as well as the LHS community.

Web and Digital Communications Pathway

For the purposes of this proposal, the career pathway identified within the Information Technology cluster is Web and Digital Communications. As a growing field nationally and locally, it is imperative that students receive specific training and skills in Web Design and Computer Information skills and programming languages. Courses taught in this sequence within the Governor's STEM Academy will include Information Technology Fundamentals, Design, Multimedia, and Web Technologies, Database Design and Management (Oracle) and Advanced Database Design and Management with PL/SQL(Oracle). Computer Information

Systems, Advanced Computer Information Systems, and Web-based Development and Administration will be the recommended corresponding supplementary electives. Students will be strongly encouraged to take higher level mathematics courses including AP Computer Science. A host of additional electives will be offered both on our campus and through the Advanced Technology Center to complement these courses. Students will be able to participate in the DECA student co-curricular organization, obtain industry certifications, and benefit from cooperative education experiences.

Web and Digital Communications Pathway Course Descriptions

Information Technology Fundamentals (ITF)

Information Technology Fundamentals (ITF) introduces the essential skills needed for student success in today's workplace. While ITF is a survey course to help students gain exposure to emerging technologies, it provides an opportunity for students to refine their interests for future studies. The goal of the ITF course is to provide a strong base of knowledge for students related to information basics, Internet fundamentals, network systems, computer maintenance/upgrading/trouble-shooting, computer applications, graphics, Web page design and interactive media.

Throughout the course, students will be eligible to participate in the Internet and Computing Core Certification (IC^3) exam. The Global Standard 3 is an internationally recognized standard for digital literacy and reflects the most relevant skills for school and business today. Students passing the certification exam will be eligible for a verified elective credit and possible exemption from the final exam.

Design Multimedia and Web Technologies

This business course is designed for secondary school students to develop proficiency in using desktop publishing software such as Microsoft Advanced Word and Publisher to create a variety of printed and electronic publications. Students incorporate journalistic principles in design and layout of publications, multimedia presentations, and Web pages. Students develop an electronic portfolio to showcase their design skills. Students also learn the importance of

workplace readiness skills, an overview of all aspects of industry, and computer basics and Internet safety. In addition, students will design, produce, and edit a PSA commercial to work with Landstown's Eagle AM TV.

Students who are Business Completers will also have the opportunity to sit for Virginia's Workplace Readiness Skills certification which can be used for a student-selected verified credit.

Database Design and Management (Oracle)

Oracle includes database design and programming. Students study database fundamentals to include database development, modeling, design, and normalization. Students analyze business requirements and create entity relationship diagrams and data models, all while building collaboration and problem-solving skills. Later, students learn Structure Query Language (SQL) using the Oracle Application Express tool to manage and control access to data. Upon satisfactory completion of this class, the student will be able to:

- Explain the development of relational databases
- Design and model a database
- Normalize data
- Write select statements using SQL
- Write DDL (Data Definition Language), DCL (Data Control Language), and TCL (Transaction Control Language) statements
- Keep up-to-date with changing technology issues
- Prepare for the certification exam

Students have the opportunity to take the first step toward Oracle Certified Associate certification with successful completion of the Oracle Introduction to SQL. The cooperative education component is available in conjunction with this class.

Advanced Database Design and Management (PL/SQL)

Technology Academy Programming with PL/SQL introduces students to the PL/SQL programming language. PL/SQL is the procedural language extension to SQL and is Oracle

Corporation's standard data access language for relational databases. PL/SQL is an advanced fourth generation programming language that extends the capabilities of SQL. It allows basic program logic and control flow to be combined with SQL statements. Students study programming constructs to include variables, constraints, conditional statements, loops, functions, procedures, and packages. They learn to handle errors through exception statements, as well as develop triggers. Upon satisfactory completion of this class, the student will be able to write code to include:

- Basic PL/SQL block structures
- Basic and Advanced Logical (IF/Loop) statements
- Variables
- Cursors
- Exception Handling
- Procedures
- Functions
- Packages
- Triggers
- Oracle Supplied Packages
- Dynamic SQL
- Advanced Data Types
- Keep up-to-date with changing technology issues
- Prepare for the certification exam

Students have the opportunity to take the Oracle Introduction to PL/SQL certification exam. Students who have successfully completed both the Oracle Introduction to SQL and the Oracle Introduction to PL/SQL exams will become an Oracle Certified Associate. Students may participate in the cooperative education component while enrolled in this class.

Certification Path in the Oracle Internet Academy Courses:

The Oracle Certification Program begins with the Associate level, i.e., Oracle 9i Developer Associate. At this apprentice skill level, Oracle Certified Associates have a foundation of

knowledge that allows them to act as junior team members working with database administrators or application developers. Earning the Oracle Certified Associate credential as a beginning IT professional gives the student recognition for their foundation of knowledge using Oracle technologies. This distinction differentiates them from those without any credentials and can help them build their career by obtaining access to entry-level opportunities.

To become an Oracle Certified Associate, the student must pass the exams required for the Oracle Certified Associate level of their selected job role. Typically, two exams are required. The first one can be taken via the Internet, while subsequent exams must be taken in a proctored environment. Introduction to Oracle9i: SQL (#1Z0-007), the first exam is offered with this course. The second exam (1Z0-147 Oracle: Program with PL/SQL) is rendered with the Academy Programming with PL/SQL course.

Landstown provides qualified students with an online Self-Test Software account. This account serves as their practice environment for the certification exam. Qualified students will need access to the Internet and a valid e-mail address to create this account. The account is valid for ninety days and provides students with a variety of practice test questions.

To qualify for the Self-Test Software, a student must pass all online curriculum exams with a 60 or higher and currently be passing the class. There are four online exams (first semester midterm and final, plus second semester midterm and final). Students will have three opportunities to pass these tests; however, only the first score will be recorded as their grade.

When a student has successfully completed all four curriculum exams, individual testing time will be scheduled with the instructor for the industry certifications.

Computer Information Systems (CIS)

Students develop proficiencies in Microsoft Office 2010 Word, Excel, PowerPoint, and Access. Students prepare to sit for the Microsoft Office Specialist (MOS) industry certification. In the process of preparing for the industry certifications, students use various software programs and resources to apply problem-solving skills. Upon successful completion of practice exams,

students are eligible to sit for the Microsoft Office Specialist industry certifications. Additionally, the cooperative education method is utilized in this class.

COURSE OBJECTIVES FOR CIS

- Explore Computer Concepts
- Explore Ethical Issues Related to Computers and Computer Systems
- Manage Computer Systems
- Produce Word Processing Documents
- Develop Electronic Spreadsheets
- Develop and Manage Databases
- Develop Multimedia Presentations
- Communicate Through Technology
- Develop Employability Skills
- Prepare for the Microsoft® Certified Applications Specialists Certification Exams

Advanced Computer Information Systems (ADV CIS)

This course expands upon the prerequisite CIS course. The software programs used in this course are Microsoft Office 2010® and Adobe® CS5. Students learn to create Web pages using Dreamweaver including graphics and animation using Flash and Fireworks. Students continue to prepare for the Microsoft Office Specialist (MOS 10) industry certifications and the Adobe® CS4 Dreamweaver certification. In the process of preparing for the industry certifications, students use various software programs and resources to apply problem-solving skills. The cooperative education component is incorporated in this class.

COURSE OBJECTIVES FOR ADV CIS

- Explore Computer Concepts
- Explore Ethical Issues Related to Computers and Computer Systems
- Manage Computer Systems
- Develop Electronic Spreadsheets

- Develop and Manage Databases
- Develop Multimedia Presentations
- Communicate Through Technology
- Create Web Pages using HTML and CSS
- Create Graphics
- Create Web Animation
- Develop Employability Skills
- Prepare for the Microsoft® Office Specialists Certification Exams

Web Design and Administration

Web Design and Administration is based on the Adobe Digital Design: Foundations of Web Design curriculum. This course teaches the essential, hands-on skills and knowledge that Internet professionals are expected to understand.

Digital Design: Foundations of Web Design is a project-based curriculum that teaches digital communication skills in the context of the professional Web design and development process, using Adobe Web tools. Digital Design develops four key skill areas:

- Project management and collaboration
- Design
- Research and communication
- Professional Web-authoring tools

Students develop these key skills in a spiral, i.e., each project adds more challenging skills onto the foundation proficiencies. Digital Design addresses each of these areas, using a project-based approach. Each project has phases that follow a design and development process, from project planning to evaluation and launch. To simulate a professional work environment, students gradually migrate their design work from an individual process to a group process. Design and technical work by their very natures are iterative, so the projects contain activities

that require students to evaluate, then redesign and rework their communications. Specific attention has been paid to developing concepts and principles for thorough, effective design.

Throughout the course, students will be eligible to participate in the Adobe Certified Associate (ACA) program. ACA demonstrates basic, entry-level skills with Adobe digital media software. Students will prepare for the Web Communication with Adobe Dreamweaver and Rich Media Communication with Adobe Flash. Students passing a certification exam will be eligible for a verified elective credit and possible exemption from the final exam.

Advanced Placement Computer Science

Advanced Placement Computer Science is a Java-based, introductory, college-level course that parallels the shift by colleges and industry toward a more object-oriented style of programming. The course meets the requirements set forth in the syllabus of the College Board. Students enrolled in this course have the opportunity to sit for the AP Computer Science test. Success on this test can earn students college credits at many universities. Because the development of computer programs to solve problems is a skill fundamental to the study of computer science, a large part of the course is built around the construction of computer programs or parts of programs that correctly solve a given problem. The course also emphasizes the design issues that make programs understandable, adaptable, and when appropriate, reusable. At the same time, the development of useful computer programs and classes is used as a context for introducing other important concepts in computer science, including the development and analysis of algorithms, the development and use of fundamental data structures, and the study of standard algorithms and typical applications. In addition, an understanding of the basic hardware and software components of computer systems and the responsible use of these systems are integral parts of the course. Topics include computer systems, object-oriented program design concepts and implementation, classes, strings, arrays, recursion, data structures, and analysis of algorithms. Standard Java classes and methods will be used. Students will develop Java applications and applets using the current Sun Microsystems Java Development Kit and an Integrated Development Environment (IDE) such as JCreator or BlueJ.

The course is taught from an objects first perspective. Students are introduced to the concepts of interacting objects early, and then the traditional programming structures and data types are introduced. Topics are introduced by lecture and then reinforced through various programming projects. Students are encouraged to explore solutions using the Java resources available, including the Java API (Application Program Interface), commonly referred to as the Java Docs.

Additional information for Business and Information Technology courses

Students who take and pass a minimum of one of the following certification exams: IC3, any exam included in Microsoft Office Specialists, Introduction to SQL, and Introduction to PL/SQL, or score a 3 or better on the AP Computer Science exam and meet all additional requirements for an advanced diploma will be awarded the Seal of Advanced Mathematics and Technology on their diploma. By way of enrollment in any business class, students learn about and participate in their co-curricular organization, the Future Business Leaders of America (FBLA). Students who take courses at the Advanced Technology Center are eligible to participate in SkillsUSA.

Information Technology courses offered at the Advanced Technology Center:

- Software and Game Development (AT6641)
- Advanced Software and Game Development (AT6642)
- Computer Network Administrator I (AT6655)
- Computer Network Administrator II (AT6656)
- CISCO Networking Academy I (AT6657) and CISCO Networking Academy II (AT6658)
- Digital Design I (AT8570) and Digital Design II (AT8571)
- Internet Web Professional (AT6630) and Advanced Internet Web Professional (AT6631)
- Telecommunications I (AT8680) and Telecommunications II (AT8681)

Business and Information Technology

INFORMATION TECHNOLOGY cluster	INFORMATION TECHNOLOGY cluster	INFORMATION TECHNOLOGY cluster	INFORMATION TECHNOLOGY cluster	INFORMATION TECHNOLOGY cluster	FINANCE cluster	BUSINESS MANAGEMENT & ADMINISTARTION cluster
Governor's STEM Academy WEB & DIGITAL COMMUNICATIONS	WEB DESIGNER	DATABASE ADMINISTRATION & COMPUTER PROGRAMMING	SOFTWARE APPLICATIONS	INFORMATION TECHNOLOGY ESSENTIALS	ACCOUNTING & FINANCE	BUSINESS ADMINISTRATION
Information Technology Fundamentals – IC^3 Certification **Design, Multimedia and Web Technologies** **Database Management and Administration (Oracle, SQL)** – Introduction to SQL Certification **Database Management and Administration (Oracle PL/SQL)** – Introduction to PL/SQL Certification	**Information Technology Fundamentals** – IC^3 Certification **Web Development and Administration** - Adobe Certified Associate Web Communication using Adobe Dreamweaver Certification **Database Management and Administration (Oracle, SQL)** – Introduction to SQL Certification **Business Management/Virtual Enterprise** – NOCTI Certification	**Information Technology Fundamentals** – IC^3 Certification **Database Management and Administration (Oracle, SQL)** – Introduction to SQL Certification **Advanced Database Management and Administration (Oracle PL/SQL)** - Introduction to PL/SQL Certification **Advanced Placement Computer Science (JAVA)** – AP Exam	**Computer Information Systems** – Microsoft Office Specialists Certification **Advanced Computer Information Systems** – Microsoft Office Specialists Certification **Web Development and Administration** – Adobe Certified Associate Web Communication using Adobe Dreamweaver Certification **Database Management and Administration (Oracle, SQL)** – Introduction to SQL Certification **Or** **Business Management/Virtual Enterprise** – NOCTI Certification W!SE Financial Literacy Certification	**Information Technology Fundamentals** – IC^3 Certification **Computer Information Systems** – Microsoft Office Specialists Certification **Web Development and Administration** – Adobe Certified Associate Web Communication using Adobe Dreamweaver Certification **Database Management and Administration (Oracle, SQL)** – Introduction to SQL Certification	**Computer Information Systems** – Microsoft Office Specialists Certification **Financial Management** – W!SE Financial Literacy Certification **Accounting I** – NOCTI Accounting Certification QuickBooks Certification **Advanced Accounting**– NOCTI Advanced Accounting Certification QuickBooks Certification **Business Management/Virtual Enterprise** – NOCTI Certification W!SE Financial Literacy Certification	**Keyboarding and Design Multimedia and Web Technologies** **Financial Management** – W!SE Financial Literacy Certification **Computer Information Systems** – Microsoft Office Specialists Certification **Advanced Computer Information Systems** – Microsoft Office Specialists Certification **Accounting I** – NOCTI Accounting Certification Quick Books Certification **Business Management/Virtual Enterprise** – NOCTI Certification W!SE Financial Literacy Certification

Career Pathways for Information Technology cluster: building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support and management of hardware, software, multi-media and systems integration services such as: network systems, information support and services, Web and digital communications, and programming and software development.

Career pathways for Finance cluster: planning and related services for financial and investment planning, banking, insurance, and business financial management such as: securities and investments, business finance, accounting, insurance, and banking services.

Career pathways for Business Management & Administration cluster: careers in planning, organizing, directing and evaluating business functions essential to efficient and productive business operations such as: general management, business information management, human resource management, operations management, and administrative support.

Engineering and Technology

The engineering courses are focused on career pathways in the areas of science, technology, engineering, and mathematics. Units of study and projects incorporate strong integration of these subject areas. Lesson plans, class projects, speakers, field trips, and instructional materials are often collaboratively devised to maximize student benefit. Reinforcement of previously learned skills and concepts is incorporated into daily learning and applied in various competitions. The courses are project-based, culminating in a senior design class focusing on a final project for presentation. Students are afforded a number of opportunities to earn industry certifications.

A four-year, $25,000 scholarship is offered to one student each year from the Virginia Commonwealth University School of Engineering. The student is selected through a school-based committee. Faculty advisors from the VCU School of Engineering mentor interested students and host a full-day campus tour to assist students with the application/decision process.

The Engineering Department hosts a speaker series, "Eagle Talk," featuring individuals from various professions and expertise who share their vocations, knowledge, and personal experiences with interested students. Compelling presentations in the fields of STEM, sustainability, and the 21st-century workplace are some of the topics addressed.

Community and business partnerships exist with STIHL Inc.; Old Dominion University Frank Batton School of Engineering; Norfolk State University College of Science; Engineering and Technology; Virginia Commonwealth University School of Engineering, Rockwell Collins; AVW Technologies, Inc.; Langley Research Center (NASA); Armed Forces Communications and Electronics Association; and the Virginia Beach Education Foundation, in addition to others. These partners provide resources in funding grants, competition sponsorships, scholarships, software, technical support, summer camps, mentorships, internships, guest speakers and college preparedness.

In addition to the 24 categories of the Technology Student Association competitions, other competitions are available to students. They include, but are not limited to, SNAME, Real World Design, VBCPS Electronics Challenge, Internet Safety Poster, Tidewater Builders' Association Young Designer Scholarship Competition, Great Computer Challenge, FIRST FTC Challenge, and Old Dominion University Engineering Day.

Engineering and Technology Pathway

The Governor's STEM Academy will focus on the Engineering and Technology pathway. The demand for students with these skills in this region and nationally is very high, and a number of local advanced training facilities and postsecondary institutions offer degree programs in this pathway. Students will be advised to take Technical Drawing and Design, Materials and Processes Technology, Introduction to Engineering Design, and Engineering Design and Development. Students will be strongly encouraged to take additional electives through the Engineering and Technology Pathway and the Advanced Technology Center, granting them the opportunity to earn additional industry certifications and broadening their scope of studies. Higher-level mathematics such as Calculus and Advanced Placement level science courses, as well as involvement in the TSA student organization and competitions, will be recommended.

Engineering and Technology Pathway Course Descriptions

Technical Drawing and Design

This course is the introduction to the design process used throughout the technology courses. Students learn the history and standards of drafting as well as how to focus on creativity and innovation through design. Computer Aided Drafting (CAD) is emphasized, and this first-year course offers 2D and 3D modeling. Students master the AutoCAD (2012) software at the beginner and intermediate levels. The application of mathematics and physics is applied through the calculations of geometrical relations in CAD as well as bridge-design projects. This mathematical design process is also emphasized to ensure students are prepared for the rigorous projects they will encounter in their future STEM courses in the technology

department. The connecting courses for this class are Introduction to Engineering Design, Architectural Drawing, Engineering Drawing, and Digital Visualization.

Materials and Processes Technology

Students focus on physical materials and processes as they fabricate usable products and conduct experiments. Learning experiences include the use of tools and equipment related to analysis, testing, and processing of metals, plastics, woods, ceramics, and composite materials. Career analysis is also included. This single-period laboratory course is recommended for students interested in technical careers and others wishing to improve their consumer knowledge and technological literacy.

Some specific competencies include the following:

- List technological developments related to materials and processes technology.
- Explain the benefits of studying materials and processes technology.
- Follow all safety rules and emergency procedures for laboratory work.
- Research careers related to industrial materials and processes.
- Research the responsibilities of the members of an engineering team.
- Participate in an organized personnel system to manage class and laboratory activities.
- Investigate local industry and technical resources related to materials and processes technology.
- Explain the basic structure of atoms and ions.
- Compare the structure of amorphous and crystalline materials.
- Distinguish between materials classified as polymers, ceramics, metals, and composites.
- Explain the origin of various natural and synthetic materials.
- Measure common mechanical properties of selected materials.
- Compare chemical properties of selected materials.
- Use materials testing devices and measuring and layout tools.
- Describe the characteristics and uses of thermoplastics and thermosetting plastics.
- Select appropriate polymer(s) for a product, based on the properties of the material.

- Produce plastic items through use of selected combining techniques.
- Select and use appropriate separating techniques on plastics.
- Select and use appropriate forming techniques on plastics.
- Produce finished surfaces on plastics.
- Apply plastic/polymeric materials and processes to a problem, product design, or prototype.
- Describe the basic structure of metals.
- Compare typical properties of selected metals and alloys.
- Select and perform basic metal forming techniques.
- Select and perform appropriate metal separation processes.
- Select and perform metal combining and finishing techniques.
- Apply metal materials and processes to a problem, product design, or prototype.
- Describe the nature and structure of wood and forest products.
- Determine the physical, mechanical, and chemical properties of woods.
- Select and use separating techniques on woods.
- Select and use wood combining methods.
- Select and apply wood conditioning materials.
- Apply wood materials and processes to a problem, product design, or prototype.
- Explain the origin, types, and uses of ceramics.
- Classify ceramics, based on their properties.
- Identify types and applications of composite materials.
- Produce a composite part or product.

Certification Examinations, Assessments

- Virginia Workplace Readiness Skills

Introduction to Engineering Design

This course provides orientation to the careers and challenges of the various engineering fields within the Science, Technology, Engineering and Mathematics (STEM) cluster. Students enrolled

in the Engineering and Technology pathway study and have opportunities to complete projects in the following areas of engineering:

- History of Engineering
- Prototyping
- Sustainability
- Technical Drawing
- Electrical
- Materials
- Aerospace
- Automotive Design

Students also research careers in each area of engineering to explore future career pathways. They complete hands-on projects based on the concepts and theories reviewed in the coursework.

Engineering Design and Development

These advanced courses within the Science, Technology, Engineering and Mathematics (STEM) career cluster continue to build upon the STEM knowledge and skills obtained in the units covered in the prerequisite Introduction to Engineering Design course.

Students enrolled in this Engineering and Technology pathway study and have opportunities to complete projects in the following fields of engineering:

- Prototyping
- Alternative Energy
- Sustainability
- Mechanical Engineering
- Material Engineering
- Electrical Engineering
- Computer Numerical Control (CNC)
- Manufacturing

Students also research careers in each area to explore future career pathways.

Engineering Drawing and Design

This course provides students with the opportunity to learn the graphic language of industry for engineers, manufacturers, and technicians. It provides students with in-depth experiences in drawing problems and development of skills and techniques. Emphasis is placed on the interpretation of manufacturing and industrial processes and the ability to use handbooks, models, and computer-aided design (CAD) for designing parts and the assembly of simple to complex machines. An important aspect of the course is the application of drafting principles to typical engineering drawing and design problems. The introduction to alternative energy and sustainability is discussed when students are required to design a device/machine. Emphasis is placed on individual and collaborative work in order to produce work exceeding industry standards.

The student must complete Technical Drawing and Design as a prerequisite. The student must master the AutoCAD (2012) software at the beginner and intermediate levels. Academy students in this course should pass with no less than a B in order to use the AutoCAD 2012 and the AutoCAD Inventor software that is required by engineers and manufacturers nationwide. The student must have a working understanding of the following in order to gain entry into this course:

- In the subject area of mathematics: one year of geometry, and one year of algebra
- In the subject area of science: the periodical table and general science
- In the subject area of engineering: exposure to mechanical engineering principles; prototyping
- In the arts and languages: technical writing; history of technology; history of engineering
- In the fields of engineering: have an innate interest in the fields of engineering.

The following units of study shall be covered during the course of the year:

- Careers in Engineering Drawing
- Engineering CAD Fundamentals
- Geometry for Drafting and CAD
- Multi-view Drawing
- Sectional Views
- Fasteners
- Symbols for Various Engineering Drawings
- Working Drawings
- Pattern Development
- 3D Modeling and Rendering
- Individual and Collaborative Projects

These units contain sub-units in which each student will build his/her knowledge base that may lead to a career in the field of engineering drawing and/or related professions.

Certifications and Competitions:

Students enrolled in the Engineering Drawing class may take a NOCTI certification test that, upon passing at 75 percent, demonstrates that he or she has mastered the above units of study and can reliably enter into the work force as a beginner draftsman or CAD operator.

Students may opt to compete at three levels in the Technical Student Association annual competitions. As many as 28 areas of technical subjects for competition are available. Students and teams are given recognition and awarded trophies by the TSA national headquarters and professional associations.

Electronics I and II

These courses cover a wide spectrum of physics-related topics from electricity and electromagnetic principles to digital logic and parallel interfaces. The applications of

mathematics in these courses range from the SI System and algebraic equations through binary and Boolean expressions.

Electronics I provides orientation to the careers and challenges of the field of electrical engineering. Students study the following areas: basic electronics theory, component recognition, and proper use of test equipment. Mathematics and reading skills are emphasized as part of the process of studying these concepts. Focusing on the prototyping of products within each area is a major emphasis of this course. Students also research various workplace skills in each area to help determine their future career path. Activities include fundamentals of electricity, troubleshooting, and assembly of various electronic projects. Students complete hands-on projects based on the concepts and theories reviewed in the coursework.

Electronics II builds upon the knowledge and skills obtained in the units covered in the Introduction to Electronics course. Students study the following topics: basic electronics review, circuit design, wireless networking, AM-FM radio design/construction, RF radio design/construction, and consumer electronics. During the course of the school year, students apply reading and mathematics skills to the study and diagnoses of complex circuits used within these various fields of study. Students are challenged with a variety of case studies that require teamwork, creativity, scientific problem-solving, and the application of science and technological literacy. Students complete hands-on projects based on the concepts and theories reviewed in the coursework. Many scientific concepts from Ohm's, Watt's, and Kirchhoff's Laws to transformer and waveform theory provide an array of lab activities for the student. Primary instruction is provided by the teacher with computer-assisted; real-time assessment results, lab activities, and differentiated/remediation opportunities. Online compatibility extends the instruction into the post-high school/higher education programs of study providing articulated credit for students continuing in the career field. At the conclusion of the two-year sequence, students have the opportunity of obtaining an industry certification in Electronic Technology and Workplace Readiness State Assessment.
Some of the course competencies include:

- Demonstrating critical-thinking and problem-solving skills

- Explaining the operations of electromagnetic devices
- Constructing a working combinational logic circuit using logic gates
- Operating a computer parallel interface
- Crafting a power supply circuit and verifying operations
- Constructing a basic robot
- Maintaining and repairing a computer system

Additional Information for all Engineering Courses

Extensive use of the Landstown Student Web Portal and SchoolNet will be utilized in completing classroom assignments and research in all engineering courses. By way of enrollment in any engineering and technology class, students will learn about and may participate in their co-curricular organization, the Technology Student Association (TSA). Students who take courses at the Advanced Technology Center are eligible to participate in SkillsUSA.

Engineering and Technology courses offered at the Advanced Technology Center:

- Architectural Design (AT8531)
- Computer Aided Drafting and Design I (AT8530) & II (AT8531)
- Engineering Technology I (AT8436) and Engineering Technology II (AT8437)
- Modeling and Simulation (AT8462)
- Marine Engineering and Design (AT8532)

Science, Technology, Engineering & Mathematics

Communications Technology Pathway	Technical Design & Illustration Pathway	FIRST Tech Challenge Engineering Pathway	Electronics Technology Pathway	Governor's Academy STEM Engineering and Technology pathway	Occupations relating to these pathways
Photography & Printing* (sem-½ c) *and* **Computers & Communication Technology*** (sem-½ c) *and* **Graphic Communication** *and* **Digital Visualization (Modeling and Simulation)** *or* **Geospatial Technology** *then* **Technical IT Support (Senior Design)**	**Technical Drawing and Design*** *and* **Engineering Drawing** *or* **Architectural Drawing** *and* **Digital Visualization (Modeling and Simulation)** *then* **Technical IT Support (Senior Design)**	**Introduction to Engineering Design*** *and* **Engineering Design & Development** *and* **Bioengineering (FIRST Tech Challenge)** *then* **Technical IT Support (Senior Design)**	**Electricity/ Electronics Technology I*** *and* **Electronics Technology II** ** *and* **Robotics (STEM Robotics Competition)** *then* **Technical IT Support (Senior Design)**	**Technical Drawing and Design** *and* **Materials and Processes Technology** *and* **Introduction to Engineering Design*** *then* **Engineering Design & Development**	▶ Aeronautical Engineer ▶ Aerospace Engineer ▶ Agricultural Engineer ▶ Agricultural Technician ▶ Application Engineer ▶ Architectural Engineer ▶ Automotive Engineer ▶ Biomedical Engineer ▶ Biotechnology Engineer ▶ CAD Technician ▶ Chemical Engineer ▶ Civil Engineer ▶ Communications Engineer ▶ Computer Engineer ▶ Computer Programmer ▶ Construction Engineer ▶ Electrical Engineer ▶ Electronics Technician ▶ Geothermal Engineer ▶ Industrial Engineer ▶ Manufacturing Engineer ▶ Manufacturing Technician ▶ Marine Engineer ▶ Mechanical Engineer ▶ Metallurgist ▶ Mining Engineer ▶ Nuclear Engineer ▶ Petroleum Engineer ▶ Product/Process Engineer ▶ Survey Technician ▶ Systems Engineer ▶ Transportation Engineer
***Prerequisites for Graphic Communications**	***Prerequisite for either second year course**	***Prerequisite for Engineering Design & Development**	***Prerequisite for Electronics II** ** **Prerequisite for Robotics**	***Prerequisite for Engineering Design & Development**	
Brainbench Adobe Photoshop Certification **NOCTI** Certification *Verified Credit*	**AutoCAD** Certification *Verified Credit*	**NOCTI** Certification *Verified Credit*	**NOCTI** Certification *Verified Credit*	**AutoCAD** **NOCTI** Certifications *Verified Credit*	

Two full years in any technical education program of study will meet SOQ Code of Virginia #22.1-253.13:3.B.2

(sem-1/2 c) semester-half credit course

Marketing and Entrepreneurship

The Marketing and Entrepreneurship program of study offers thematic courses incorporating real-world marketing activities, such as writing business plans, market research and development, creating Web sites, and portfolios. Students can explore all aspects of entrepreneurship for those interested in opening and operating their own business. Mathematics and economic concepts are integrated into the curriculum. Students can select from four career clusters. Cooperative education experiences are available, as are multiple industry certifications. In Internet Marketing and Web Development and Administration, students work closely with local business partners at Beach Window and Siding and the Virginia Beach Schools Federal Credit Union to complete a second semester final project.

Some of the current Marketing and Entrepreneurship business and community partners include the Art Institutes; Bryant and Stratton College; Junior Achievement of Greater Hampton Roads, Inc.; Goodwill Industries; Y-Street; Hampton Roads Rotary Club; Norfolk Admirals; Constant Convocation Center; EDMARC Hospice for Children; Johnson & Wales; WVEC; ODU Marketing STEM Education Department; Virginia Commonwealth University Department of Fashion and Merchandising; Dillard's; Beach Municipal Federal Credit Union; and the Virginia Beach Schools Federal Credit Union.

The school store Eagle's Landing is maintained and operated by the students in the Marketing and Entrepreneurship program of study. The store is a school-based enterprise certified by DECA Inc. at the silver level for its outstanding achievement. The silver level is the second highest awarded.

Professional Sales Pathway

The Marketing cluster emphasis for the Governor's STEM Academy will be in the pathway of Professional Sales. Our local region is growing and projected to experience further growth in the career pathway for Professional Sales. Students will be advised to take Entrepreneurship, Internet Marketing, Marketing, and Advanced Marketing. Several additional complementary elective courses are offered such as Global Marketing and Commerce,

Advanced Global Marketing and Commerce, Advanced Entrepreneurship, and Fashion Marketing, which has an advanced level component as well as cooperative education opportunities and industry certifications. Students will be encouraged to avail themselves of these opportunities and the FBLA co-curricular organization. Examples of high-level mathematics, science, and technology skills integrated in this pathway will be the use of location-based (GPS) social media, mobile apps, Web TV, the Intercloud, and digital marketing.

Professional Sales Pathway Course Descriptions

Entrepreneurship

This course introduces students to the exciting world of creating, owning, and launching their own business. Students learn concepts and techniques for planning an innovative business and living the entrepreneurial lifestyle. Students study business and economics to discover new business opportunities, risks, and challenges in local, domestic, and/or international ventures. The development of a business plan is an integral component of this course.

Advanced Entrepreneurship

This course is designed for students who wish to concentrate on advanced strategies for entrepreneurship, building upon concepts introduced in Entrepreneurship. The focus of the course is on development of a business plan and small business management. Students establish, market, and maintain a business. The cooperative education method is utilized in this course. Students combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year.

Internet Marketing

In this course, students receive an introduction to marketing functions and the business plan. They study Internet marketing's role in the global economy. Students gain knowledge of the tools and techniques used in Internet marketing and learn how to design a Web site. They explore ethical, legal, and security issues and prepare for a career in Internet marketing. Academic skills (mathematics, science, English, and history/social science) related to the

content are integral components of this course. Computer/technology applications supporting this course are also studied.

Marketing

In this course, students examine activities in marketing and business important for success in marketing employment and postsecondary education. Students learn how products are developed, branded, and sold to businesses and consumers. Students analyze industry trends and gain hands-on experience in the marketing of goods, services, and ideas. Topics include professionalism in the workplace, product planning/positioning, promotion, pricing, selling, economic issues, and the impact of technology on the marketplace. This course reinforces mathematics, science, English, and history/social science Standards of Learning (SOL). Computer/technology applications and Distributed Education Club of America activities enhance the course. The cooperative education method is utilized in this course. Students combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year.

Advanced Marketing

Here students build on knowledge gained in a prior marketing course. Students participate in supervisory and management activities focusing on marketing mix, purchasing, financing, human resources, global marketing, pricing, and emerging technologies. Students prepare for advancement in marketing careers and postsecondary education. This course reinforces mathematics, science, English, and history/social science Standards of Learning (SOL). Computer/technology applications and DECA activities enhance the course. The cooperative education method is available for this course. Students combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year.

Fashion Marketing

In this specialized course, students gain basic knowledge of the apparel and accessories industry and skills necessary for successful employment in apparel businesses. Students

develop general marketing skills necessary for successful employment in fashion marketing as well as specialized skills unique to the apparel and accessories industry. Personal selling, sales promotion, purchasing, physical distribution, market planning, and product/service technology as well as academic skills (mathematics, science, English, and history/social science) related to the content are part of this course. Computer/technology applications supporting this course are also studied. Field study trips and guest speakers supplement the curriculum while providing students real-world examples of the 21st-century workplace and industry.

The cooperative education method is available for this course. Students combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year. Through this specialized method, students gain real-world knowledge of business practices, ethics, industry trends, technological advances, and customer service. Cooperative education is a valuable tool that complements the curriculum and validates content information.

Advanced Fashion Marketing

In this specialized course, students with a career interest in fashion marketing gain in-depth knowledge of the apparel and accessories industry and skills important for employment in apparel businesses. They develop advanced skills unique to fashion marketing and advanced general marketing skills applied to the apparel and accessories industry. Professional selling, sales promotion, buying, merchandising, marketing research, trend analysis, product/service technology, and supervision as well as academic skills (mathematics, science, English, and history/social science) related to the content are part of this course.

Global Marketing and Commerce

Global Marketing and Commerce is a specialized course for students with a career interest in the field of international trade. Students gain an understanding of the various careers in global trade, finance, distribution, and marketing. They also consider fundamental concepts, principles, and theories of marketing in a global arena. Course content blends economic theory with international culture, politics, and legal issues. Internships may be available to provide

students with additional opportunities for hands-on experiences in international marketing. Academic knowledge and skills (mathematics, science, English, and history/social science) related to the content are integral facets of this course. Computer/technology applications supporting this course are also studied.

Advanced Global Marketing and Commerce

Advanced Global Marketing and Commerce, a specialized course for students with a career interest in international trade, builds upon concepts learned in Global Marketing and Commerce. Economic and international trade concepts are reviewed, and the world environment of international trade is further explored. Students expand their knowledge about the impact of culture on international trade and continue their study of the legal and political aspects of international marketing. Global product strategies are examined, as are concepts detailing entry into international markets, pricing strategies, international promotion, and marketing research. Computer/technology applications supporting international marketing are also explored. A review of skills and preparation required for careers in international marketing complete this course. Internships that provide hands-on opportunities in the international area may be available to students. Academic knowledge and skills (mathematics, science, English, and history/social science) related to the content are important components of this course. Computer/technology applications supporting this course are also studied.

Additional Information for All Entrepreneurship Technology Courses

By way of enrollment in any marketing class, students learn about and participate in their co-curricular organization, DECA. This organization offers students opportunities in leadership, community, and competitive events. Students who take courses at the Advanced Technology Center are eligible to participate in SkillsUSA.

Certification Examinations, Assessments

All marketing courses may assist the student in preparing for the following certification examinations, national assessments, or licensure examinations approved by the Virginia Board of Education:

- Fundamental Marketing Concepts
- National Career Readiness Certificate
- National Professional Certification in Customer Service
- Sales Certification
- Virginia Workplace Readiness Assessment and IC3 Certification
- W!SE Financial Literacy Certification
- Workplace Readiness Skills for the Commonwealth Examination

Marketing and Entrepreneurship courses offered at the Advanced Technology Center:

- Marketing Management (ME8223)
- Marketing Management CO-OP (ME8222)
- Advanced Marketing Management (ME8243)
- Advanced Marketing Management CO-OP (ME8242)

Marketing and Entrepreneurship

Business Management and Administration cluster	Finance cluster	Hospitality & Tourism cluster	Marketing Cluster Governor's STEM Academy
Pathways: General Management Business Information Management Human Resources Management Operations Management Administrative Support	**Pathways:** Securities and Investments Business Finance Banking Services Insurance Banking Services	**Pathways:** Restaurants and Food/Beverage Service Lodging Travel and Tourism Recreations, Amusements and Attractions	**Pathways:** Professional Sales Merchandising Marketing Management Marketing Communications Marketing Research
Entrepreneurship **Global Marketing and Commerce** **Internet Marketing** **Advanced Entrepreneurship**	**Entrepreneurship** **Global Marketing and Commerce** **Internet Marketing** **Advanced Entrepreneurship**	**Entrepreneurship** **Travel/Tourism Marketing** **SER Marketing** **Advanced levels of SER Marketing or Travel/Tourism Marketing**	**Entrepreneurship** **Internet Marketing** **Marketing** **Advanced Marketing**
Certifications: **NOCTI** **NRF Customer Service** **NRF Sales**	**Certifications:** **NOCTI** **NRF Customer Service** **NRF Sales**	**Certifications:** **NOCTI** **NRF Customer Service** **NRF Sales**	**Certifications:** **NOCTI** **NRF Customer Service** **NRF Sales**

Technology Academy Honors English

The Academy English component consists of four years of honors-level English classes that combine humanities and team-based business and university-level communication, while infusing technical writing/research using technology such as interactive class Web sites, blogging, online assignments and testing, the digital voice recording and editing Audacity program, and preparation of a digital portfolio. Students may earn college credit through the Advanced Placement English class and four semesters of Dual Enrollment English courses offered on campus by Tidewater Community College. Students in the existing Technology Academy and planned Governor's Academy will benefit from these course offerings.

Certifications

Landstown High School and Technology Academy currently offers 22 industry certifications to its student body. These assessments associated with the certifications are a key measure for the level of understanding with respect to specific skills and knowledge within a program of study, as compared to industry standards. **For four consecutive years, Landstown High School and Technology Academy has led the Virginia Beach City Public School system with the highest number of industry credentials earned by a comprehensive high school.** The school awarded 489 credentials with a pass rate of approximately 80 percent this past year. Two hundred fifteen students successfully earned the distinction of a CTE completer by finishing a two-year sequence of classes in a specific subject area within the program (see data chart-following page).

The 21 Workplace Readiness Skills for the Commonwealth are incorporated into every class in the program. In keeping with the theme of our divisionwide plan for student success, "Compass to 2015," the integration of 21st-century themes and skills into the curriculum is essential for our students' success. These skills include critical-thinking, creative/innovative-thinking, problem-solving, information literacy, listening, collaboration, communication, social responsibility, sustainability, interdependence, and health literacy. These 21st-century themes mirror those needs identified by Virginia employers as workplace readiness skills (WRS). Students are offered multiple opportunities to sit for the WRS certification while on campus. Annually, the number of students taking/passing this exam has increased. **Last year, the Landstown High School and Technology Academy program received the distinction of earning the highest number of WRS credentials in the Commonwealth of Virginia.** The 2011 posttest data indicate that 182 students passed the WRS exam, with a pass rate of 85.5 percent. The average score on the exam was 81.7, exceeding the division average.

VBCPS – Landstown High School

Virginia Workplace Readiness
2011Posttest Data by CTE Program Area

Program Area Division Average	Taken	Passed	% Passed	Average Score	Reading	Mathematics	Writing	Speaking and Listening	Computer Skills	Problem Solving	Big Picture	Work Ethic	Positive Attitude	Independence	Self -Presentation Skills	Attendance	Team Work
Business and Information Technology (BIT) (82.5%)	46	38	82.6	79.8	83.5	76.6	85.6	75.0	63.8	78.9	77.9	86.4	85.6	82.3	82.4	89.5	72.2
Engineering and Technology Education (ET) (82.9%)	92	87	94.6	84.8	85.0	83.2	87.5	77.6	69.2	83.8	84.2	91.3	91.0	87.2	88.4	95.1	78.2
Family and Consumer Sciences (FACS) (70.4%)	30	26	86.7	80.9	77.3	78.5	79.6	77.5	57.2	73.3	83.9	91.7	91.3	86.3	85.9	92.2	73.7
Marketing Education (ME) (84.1%)	44	31	70.5	78.1	82.3	69.7	81.5	74.7	59.1	71.7	76.1	84.8	88.9	81.8	82.3	93.2	70.0
School Average	212	182	85.8	81.7	83.0	78.3	84.7	76.4	64.2	78.8	81.1	89.0	89.4	84.9	85.5	93.1	74.5
Division Total Average	**1977**	**1580**	**79.9**	**78.9**	**80.4**	**73.9**	**79.7**	**74.5**	**61.9**	**76.5**	**78.8**	**87.5**	**87.0**	**80.6**	**83.0**	**91.3**	**71.3**

Landstown High School
Industry Credential Detail 2011

2010–2011 Landstown High School Industry Credential Detail by Program Area

#	Credential/Issuing Organization	Tested	Passed	% Passed	Verified Credit	Program Area
1	**Accounting Basic**—NOCTI	10	4	40.0%	Y	BIT
2	**CIW Foundations SDF Module**—Certification Partners, LLC	8	7	87.5%	Y	BIT
3	**CIW Site Development Foundations**—Certification Partners, LLC	2	0	0.0%	Y	BIT
4	**IC3 Global Standards Computing Fundamentals**—Certiport	32	32	100.0%	Y	BIT

#	Credential/Issuing Organization	Tested	Passed	% Passed	Verified Credit	Program Area
5	**IC3 Global Standards Key Applications**—Certiport	33	33	100.0%	Y	BIT
6	**IC3 Global Standards Living Online**—Certiport	30	30	100.0%	Y	BIT
7	**MOS Excel 2007**—Certiport	5	4	80.0%	Y	BIT
8	**MOS PowerPoint 2007**—Certiport	22	20	90.9%	Y	BIT
9	**MOS Word 2007**—Certiport	24	24	100.0%	Y	BIT
10	**Oracle Certification: Introduction to SQL**—Oracle Corporation	1	0	0.0%	Y	BIT
11	**AAFCS: Broad Field Family and Consumer Science**—American Association of Family and Consumer Science	4	3	75.0%	Y	FACS
12	**AAFCS: Interior Design**—American Association of Family and Consumer Science	7	3	42.9%	Y	FACS
13	**ServSafe Certification**—National Restaurant Association	19	19	100.0%	Y	FACS
14	**Customer Service Professional**—National Retail Federation Foundation	54	51	94.4%	Y	ME
15	**Sales**—National Retail Federation Foundation	6	6	100.0%	Y	ME
16	**3D Studio Max**—Brainbench	16	16	100.0%	Y	ET
17	**Adobe Certified Associate: Photoshop**—Certiport	6	5	83.3%	Y	ET
18	**Advertising and Design**—NOCTI	15	7	46.7%	Y	ET
19	**AutoCAD 2010**—Certiport	53	11	20.8%	Y	ET
20	**Electronic Technology**—NOCTI	49	20	40.8%	Y	ET
21	**Pre-Engineering**—NOCTI	15	12	80.0%	Y	ET
22	**Virginia Workplace Readiness**—NOCTI	212	182	85.8%	Y	ALL
	TOTAL	**623**	**489**	**78.5%**	**n/a**	**n/a**

Performance Measures/Data

Standards of Learning tests results are one important source of data to compare the achievement to students within the program to those who are not. SOL data for the 2011 year indicate that Academy students scored at a substantially higher rate than their counterparts in the general school body. The scores are as follows:

Academy pass rate	Landstown pass rate
Algebra II = 98% (+16% higher than LHS)	Algebra II = 82%
Science = 99% (+12% higher than LHS)	Science = 87%
English (Reading/Writing) = 97% (+5% higher than LHS)	English (Reading/Writing) = 92%

Since the inaugural graduating class in 2005, the program has maintained a 0 percent high school drop-out rate. As acceptance numbers in the Academy have reached program capacity, there has been a correlating increase in graduates. Ninth-grade program participants are administered the PSAT to prepare them for future testing. Program participants historically have achieved higher overall GPA's, SAT, and ACT test scores and pass/advance status. The majority of students attaining the distinction of Principal's Honor Roll each nine weeks are within the Academy. The initiation of the Governor's STEM Academy will increase the number of students achieving at high levels in all areas. The plans of study for each of the career pathways will promote higher levels of learning in science, mathematics, and CTE courses. The Academy Program Coordinator, School Improvement Specialist, and Guidance Department collect various forms of data on the performance of students participating in the program. Comparison data will be collected from the main student body to compare with those attending the Technology Academy and the Governor's STEM Academy for program evaluation.

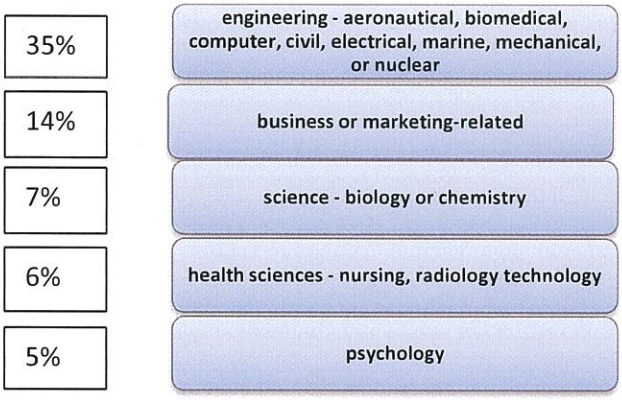
CTE completers in the program are surveyed about their educational and workplace-related experiences. The most recent survey was completed by 211 former students. When asked how satisfied they were with the preparation they received in this high school program for further education or employment, 100 percent responded that they were very satisfied. Currently, 86 percent are full-time/part-time students, with 50 percent employed either full-time or part-time. Nearly three-fourths report they are applying the skills and information they

learned in their CTE/Academy courses in their current occupation most or some of the time. Currently, 80 percent are or have received training or other education since graduating from high school. Of the 162 students who responded to the question of to what extent their current area of study related to the CTE/Academy program in high school, 83 percent responded affirmatively that their training or other education did correlate to their CTE/Academy program.

The Virginia Beach City Public Schools Department of Educational Leadership and Assessment conducts an annual longitudinal tracking schedule of the program as part of the Academy Longitudinal Study. There are several components of the study including monitoring enrollment and collecting academic data for students in the program, conducting exit surveys of students enrolled in the program when they reach the final year of academic enrollment, administering periodic follow-up surveys to students post-high school graduation, and obtaining data regarding students' college enrollment. Program exit surveys are administered. For comparison purposes, a non-academy senior annual climate survey is administered to those students who do not participate in the Academy program. In addition to the exit surveys, former Academy students who graduated from the program receive post-graduation surveys. These surveys are based on the program's specific goals and objectives and focused on the program's impact on students' decisions following high school as well as their level of preparation for their education and employment.

Results of the most current senior exit survey indicate that more than two-thirds of those surveyed were academically challenged, received technical training using state-of-the-art technology, and participated in career-oriented activities preparing them to enter the job market in a technology-related career or continuing their education in a technology-related field. Eighty-six percent responded that they had earned college credit while in the program and over two-thirds earned one or more industry certifications. Associate degrees were actually earned by 7 percent of the students by the time of graduation from the program. Eighty-two percent of the 2011 graduates planned to attend a four-year college and 17 percent

were to enroll in a two-year community college in the fall. The intended majors for the students were:



Seventy-four percent of the students planned to work in a field relative to their Academy focus while furthering their education.

Parents, staff, and partners are given the opportunity to provide feedback on the Academy program through a variety of in-house surveys. The division provides an additional venue through a formal climate survey administered annually. The results of these surveys become the main focus of possible revisions and changes to the program policies, procedures, and mission. Various data collected within the school and division is reported in the Annual School Report Card that is submitted to the Virginia Department of Education.

Academy Five-Year Plan

The Academy program is driven by a planning process that supports our mission. The mission of Landstown High School and Technology Academy, in partnership with family and community, is to provide a balanced and diverse educational experience, through the integration of academics, electives, and technology to allow students to discover and develop their full potential for performance and success. The innovative learning environment of the Technology Academy features a cutting-edge curriculum especially designed for students with a deep interest in, and talent for, technology by providing them with the opportunity of combining academic and technical training to prepare them for a variety of post-graduation

choices: entry-level jobs, advanced technical training, or college or university studies. An ongoing plan that outlines and monitors the program policies and procedures; delivery and scope of services; program recruitment and participation; required resources; technology and equipment needs; and curriculum development and staffing needs is reviewed yearly. This plan is revised yearly and is continuously realigned to adhere to the program, school, and division goals, as well as student needs. The Advisory Committee for the Governor's STEM Academy will play a crucial part of this internal review process. New components for future expansion of the Governor's STEM pathways in each cluster will be incorporated into the plan. This will include the designing of collaborative instructional lessons/units and projects between mathematics, science and the pathway CTE classes, creating an ongoing marketing program, and increasing the partnerships with higher education and business and industry to meet the specific needs of the Governor's Academy.

Materials and equipment purchases are aligned to the Academy's five-year plan. Each classroom consists of 25 desktop workstations, a Promethean board, laser printers, an overhead multimedia projector, and an available cart of additional laptop computers. The necessary software for each course is downloaded on the workstations. Color printers and plotters are provided, as well. Each classroom/lab is fully equipped with the necessary tools, equipment, storage, and work space to perform the functions of the subject taught in that venue.

Administrative Procedures

Partnerships

Partnerships with local businesses, nonprofit organizations, and institutions of higher learning are an integral component of our program. Each strand has secured relationships with the necessary entities to ensure students gain maximum exposure to content knowledge, skills, and real-life experiences to prepare them for the 21st-century workplace, advanced technical training, or the postsecondary setting. As a result of the Governor's STEM Academy Proposal Planning and Advisory Committees, ongoing and new resources have been secured to meet the

expectations of our program proposal. These entities will provide guidance and advice in the development, monitoring, and evaluating of our program goals and curriculum to meet the needs of our students and the local work force, as well as opportunities for students to receive mentorships, real-life application of skills, and post-high school guidance.

Within the Marketing cluster, cooperative education experiences have been secured with numerous local businesses to allow students to gain work experience in the professional sales environment. Cooperative Education contracts, outlining the program expectations, are secured between the merchants and the students. Some of our current cooperative business partners include Chick-fil-A; Princess Anne Recreation Center; Rite Aid; Norfolk Admirals; Total Sportswear Solutions LLC; Dillard's; Nordstrom; as well as a host of others in the marketing and sales venue. Contracts for 2012–2013 will be secured at the beginning of the 2012 school year. Our school store, Eagle's Landing, is maintained and operated by marketing students in conjunction with the vendor, School House. Students enrolled in the Marketing cluster will be given priority for this opportunity. The instructors participate in the STEM Marketing, Technology, and Fashion program in conjunction with Old Dominion University which provides teacher training for the program. Bryant and Stratton College, Virginia Commonwealth University, and Johnson & Wales University also provide career, advance technical training, and postsecondary planning through campus visits and mentoring.

The Information Technology cluster has developed a collaborative Web project with local businesses, that allows students to apply the skills they have gained through their IT classes to develop Web sites for these merchants. This real-life interaction prepares students for success in the Web and Digital Communications career pathway. Students work with the business owners to design a client Web site culminating in a final professional formal presentation to the proprietors and a panel of evaluators. Expansion of this project is expected as the student participation in this cluster increases through the Governor's STEM Academy. Students enrolled in Web Design and Administration and Internet Marketing will participate in this project next year with the support of several business partners including Beach Window and Siding and the Virginia Beach Schools Federal Credit Union. Additional business partners

will be acquired in the spring of 2012 for next year's project. InMotion Hostings, Inc. has recently partnered with the Web Design and Administration and Internet Marketing students in anticipation of the Governor's STEM Academy. They are an industry leader specializing in Web hosting and Web design. Through this venture, students will be exposed first-hand to technologies and best practices utilized in the Web hosting and Web design industry. They will have the opportunity to participate in job shadowing and mentorship programs with industry leaders, gaining a real-world view of what to expect in a high-tech environment. The Division of Information Technology and Business at Tidewater Community College serves in the capacity as an advisor to the department. Post-graduation advanced training opportunities will be administered by ECPI and ITT Technical through site visits and academic advising and recruitment.

Students focused in the STEM cluster with an emphasis in the career pathway of Engineering and Technology forged a relationship with Virginia FIRST FTC this year. As a result, two teams of students were formed and prepared for the FIRST FTC competition under the guidance and direction of Virginia FIRST. Rockwell Collins and STIHL, INC. were the corporate sponsors for our 2011–2012 teams. The two teams placed first and second in the FIRST Robotics Regional Qualification Tournament hosted at Norfolk State University and will be advancing to the State FIRST competition in March. Sponsorship for the 2012–2013 teams has been secured with AVW Technologies, INC., a local defense contractor, and additional sponsors will be acquired in the spring of 2012. Virginia Commonwealth University School of Engineering will provide mentorships and college preparedness for our Engineering and Technology students and fund a yearly scholarship endowment of $6,250 totaling $25,000 over four years. We will continue to participate in the Old Dominion University Frank Batton School of Engineering and Norfolk State University College of Science, Engineering, and Technology Open Houses, Auburn University Engineering Day, and Virginia Polytechnic Institute recruiting events and other such opportunities offered to our students by postsecondary institutions with increased student participation in the Governor's STEM Academy anticipated. Instructional software from Newfangled Solutions LLC (Artsoft), White Box Learning, and TEN80 Education will be acquired to enhance the curriculum and reinforce STEM-related skills and concepts. The

Engineering Department will reapply for current STEM grants sponsored through the Virginia Beach Education Foundation.

Student Recruitment/Selection/Admission

Students are selected through an application process. During their middle school years, students are given information and the program overview by the middle school guidance counselors and Academy Coordinator. Current high school freshmen are recruited, as well. Open house programs and various informational events such as a Live Chat forum, Parent Connection, African-American Male Summit, school visits, shadowing, and STEM awareness events are held prior to the application period. Events emphasizing recruitment of females and minorities are held throughout the division. Prospective students receive an application for the programs in the fall of their eighth-grade year. Completed applications are due to the guidance counselor by February 1st of that school year. The application process consists of several components including student achievement data, one parent and four teacher recommendations, transcripts, an interest essay, and an electronic portfolio. The electronic portfolio consists of three projects (selected from a list of 12) that demonstrate the student's current level of interest and understanding of the specific content areas of information and technology, entrepreneurship technology, and engineering and technology. A selection committee reviews each application and determines which candidates will be awarded acceptance into the program based on the number of seats available at each level of the program. Students offered acceptance attend a special registration session held in April during which they receive counseling and register for their fall classes. At this time, students declare a strand(s) of focus and within their strand(s) a sequence(s) of interest to follow. Upon approval as a Governor's STEM Academy, the current divisionwide application will be amended to reflect this opportunity. During registration, students who desire to pursue the Governor's STEM Academy will select their pathway of study and develop a specialized four-year plan incorporating the recommended science and mathematics courses to complement their pathway.

Code of Student Conduct and Attendance

Applicants must submit the Admissions Agreement form provided in the application with the student and parent signatures. This Admissions Agreement outlines the terms and conditions for participation in the program, including adherence to the Academy program rules as well as those outlined in the Student Handbook and Code of Student Conduct for Virginia Beach City Public Schools. Class participation and work completion/submission expectations, academic integrity, attendance requirements, and fulfillment of Academy program requirements are also delineated.

Transportation

All students who are accepted into the Technology Academy program are guaranteed round-trip school bus transportation no matter where they reside in the city. Due to the demand and high volume of students remaining to participate in program activities and extra-curricular events, after the conclusion of regular school hours at 2 p.m., a secondary bus run (referred to as activity busses) transports those students home at 4:45 p.m. each day.

Staff Recruitment/Selection/Assignment

All staff meet the Virginia teacher licensure requirements and hold the appropriate endorsements. All Academy staff are qualified Career and Technical Education teachers certified in their field of instruction and hold industry certification, thus meeting the high standards for teachers. When a position becomes available within the program, extensive research and recruitment are conducted to find an experienced and appropriate staff member. Staff are assigned teaching duties and responsibilities based on their certification, experience, and expertise.

The Academy Coordinator position was created with the inception of the Technology Academy in 2001. This individual serves in the capacity as the lead administrator for the Academy program and oversees the day-to-day operations and long-term needs.

Staff Development

Staff development is designed to enhance teacher preparation for instruction and to meet the needs of the teachers and the program. All instructors receive comprehensive training through the Career and Technical Education program. Additional training is required and obtained through the school division and the home schools' professional development program (PDP) in alignment with our division and school plans for continuous improvement. Specialized Academy professional development is mandated through programmatic and division requirements, such as the Academy five-year plan and the plan for continuous student improvement. PDP can be addressed through a variety of mediums such as online training, video-conferencing, contracted trainers, presenters, collaborative teacher sessions, and school visits. Teachers are allotted one 90-minute planning section per day and department chairs have an additional planning section to assist with departmental and Academy-related needs.

Staff Evaluation

Staff is evaluated based on the guidelines from the division human resource department. The frequency and number of observations and evaluations is based on the teacher's experience and time in their position. Teachers deemed in need of assistance are provided resources and training to address deficits. They may be placed on a plan of assistance/action plan if the need for improvement is not met within a reasonable period of time.

Parent/Student/Community Involvement

Guidance planning begins for students in the seventh grade, when they become eligible to take high school credit courses. In seventh and eighth grades, students are administered an interest and ability inventory through Virginia View. In December of the year prior to entering high school, incoming freshmen and parents participate in a pre-transitional activity called Eagle Connection/Expo. This endeavor gives students an opportunity to experience the high school setting first-hand and learn more about the various programs of study that are offered. A special registration session is held exclusively for incoming Academy students in April.

Students and parents receive one-on-one counseling as they begin registering for their first year of courses. In August, before the start of school, students and parents are invited back to the Fresh Start function featuring community members and school organizations that help prepare students for the transition to high school. During the school year, the guidance department hosts a Career Fair for juniors and seniors. Community representatives from business, higher education, and technical training attend this function. Entities represented on the Governor's STEM Advisory Committee will be included in this event to address students' interests and needs in the Governor's STEM Academy pathways. Guidance counselors meet with all students at least twice yearly to discuss individualized academic/career plans and make adjustments as necessary. These are four-year plans developed from information gathered since the students' seventh-grade year. The plans guide the students through their four years of high school in preparation for a variety of postsecondary options. Once students have determined their goal for post-graduation, the guidance counselor designs the plan to meet this objective. Topics discussed include the type of diploma the student is seeking, seals, and completion of specialized programs. These plans are communicated to the parents and follow-up conferences are scheduled as needed to address revisions. Students selecting a Governor's STEM Academy pathway will complete this planning process with continuous monitoring by the guidance counselor and Academy Coordinator. To assess objectives as outlined in Compass to 2015, all juniors are administered the College Work Readiness Assessment (CWRA). This tool measures the extent to which the courses have prepared the students for college and the workplace, as compared to others across the nation. As part of college preparedness, all students enrolled in an Academy English class are administered the PSAT as ninth and tenth graders. A career program interest inventory assessment, Virginia Wizard, is administered to all tenth graders to gain more insight into specific career choices, college planning, and educational options. Virginia Wizard resources are utilized in all coures to assist the instructors in individualizing plans for students. As we approach the entrance of our first graduating class, the guidance department will carefully advise and monitor the progress of all potential candidates to meet Advanced Studies Diploma requirements. This includes reviews of the students' academic plans and course verification.

Parents and community members are active participants and supporters of the many endeavors in which our students compete and the conferences they attend. Students in the Information Technology cluster participate in such competitions as Great Computer Challenge and Virtual Enterprise at regional, state, and national Future Business Leaders of America conferences. Through these programs they gain invaluable leadership and workplace readiness skills. Students in the Marketing cluster participate in DECA competitions at district, state, and international leadership development conferences. The Engineering and Technology students participate in the Virginia FIRST FTC Challenge, VEX competitions, Great Computer Challenge, Old Dominion University Engineering Day, Tidewater Builders Association Young Designer's Scholarship competition, Virginia Beach Electronics Challenge, Virginia Beach STEM Robotics competition, and various categories within the Technology Student Association competition at the regional, state, and national levels. Parent and community resources serve in the capacity as advisors, mentors, organizers, chaperones, and coaches for all Career and Technical Student Organizations.

Opportunities for students to visit college and university campuses and institutions for technical training and to participate in specialized camps are provided by several members of our planning and advisory committees. We will continue to seek out and recruit targeted and interested students to benefit from these experiences within the Governor's STEM Academy creating additional opportunities for students to obtain career and postsecondary counseling. A plan has been created to host a Career Fair for Technology and Governor's STEM Academy students in 2012-2013 and each subsequent year.

Budget Narrative

All start-up expenses required for the Engineering and Technology, Marketing, and Information Technology clusters were incurred with the establishment of the Technology Academy in 2001. The school division provided funding for staffing, equipment, software, training, instructional needs, consumables, and other miscellaneous expenditures. The Academy program receives a yearly budget of approximately $38,000 to maintain re-occurring support, equipment, and instructional expenses. The support budget is $7,105 and covers the

cost for professional improvement and staff office supplies. An additional $21,141 is allocated for student support and instructional needs. The technology equipment budget is $9,440. Staffing and transportation costs are absorbed through the division and school budget. Computer replacement is directed and funded through the division technology plan. Additional funding is secured through various grants and reversion funds. Basic equipment replacement is funded through the Technical and Career Education budget and the division. Perkins funds are allocated through the CTE office to cover various costs for the program.

Funding for curriculum writing and professional development totaling $2,140 is available within the existing Academy budget. Revisions and alignment to our current curriculum and program will be addressed and funded through this existing budget as program needs dictate. All printed and online textbook/reference materials required for the pathways have been purchased this year through Perkins and Academy funds. Software purchases and leases expenditures are subsidized in the 2012–2013 Academy budget. Each year the division receives reversion funds. In the past five years, the Academy program has received more than $500,000 in additional funding from such monies. These funds have been utilized to make major equipment purchases to enhance the program. We will continue to seek out these funds whenever available and use them to augment the program budget.

Appendices

Appendix A:

Planning

Committee

Members

Planning Committee Members

Dr. James Merrill	Superintendent of Virginia Beach City Public Schools	VBCPS 2512 George Mason Drive, P. O. Box 6038 Virginia Beach, VA 23456-0038 757-263-1007
Dr. Sheila Magula	Deputy Superintendent of VBCPS	VBCPS 2512 George Mason Drive, P. O. Box 6038 Virginia Beach, VA 23456-0038 757-263-1390
Mrs. Jobynia Caldwell	Assistant Superintendent of High Schools for VBCPS	VBCPS 2512 George Mason Drive, P. O. Box 6038 Virginia Beach, VA 23456-0038 757-263-1088
Mr. Rodney Burnsworth	Assistant Superintendent of Curriculum and Instruction for VBCPS	VBCPS 2512 George Mason Drive, P. O. Box 6038 Virginia Beach, VA 23456-0038 757-263-1070
Dr. Pat Konopnicki	Director for the Office of Technical and Career Education for VBCPS	Advanced Technology Center 1800 College Crescent Virginia Beach, VA 23453 757-648-6200
Mr. Jerry Stewart, CEcD	Workforce Development Coordinator Department of Economic Development Chairman for General Advisory Council for Technical & Career Education VBCPS	Virginia Beach Department of Economic Development 222 Central Park Avenue Virginia Beach, VA 23462 757-385-6437
Mr. Farrell Hanzaker	Chief Financial Officer of the Department of Budget and Finance for VBCPS	VBCPS 2512 George Mason Drive, P. O. Box 6038 Virginia Beach, VA 23456-0038 757-263-1066

Mr. Ramesh Kapoor	Chief Information Officer of the Department of Technology for VBCPS	VBCPS 2512 George Mason Drive, P. O. Box 6038 Virginia Beach, VA 23456-0038 757-263-1100
Mr. Todd Tarkenton	Director of Secondary Instructional Services including Academy Programs for VBCPS	VBCPS 2512 George Mason Drive, P. O. Box 6038 Virginia Beach, VA 23456-0038 757-263-1070
Dr. Brian Matney	Principal of Landstown High School and Technology Academy	Landstown High School and Technology Academy 2001 Concert Drive Virginia Beach, VA 23456 757-648-5549
Mrs. Lisette Diehl	Coordinator of the Technology Academy at Landstown High School	Landstown High School and Technology Academy 2001 Concert Drive Virginia Beach, VA 23456 757-648-5505
Dr. James Barger	Engineering Technology Departmental Chairperson	Landstown High School and Technology Academy 2001 Concert Drive Virginia Beach, VA 23456 757-648-5500
Ms. Nancy Dowding	Information Technology/Business Departmental Chairperson	Landstown High School and Technology Academy 2001 Concert Drive Virginia Beach, VA 23456 757-648-5500
Mrs. Ann King	Entrepreneurship Technology/Marketing Departmental Chairperson	Landstown High School and Technology Academy 2001 Concert Drive Virginia Beach, VA 23456 757-648-5500
Mr. Tom Langley, PE, LS	President Langley & McDonald	Langley & McDonald 309 Lynnhaven Parkway Virginia Beach, VA 23452 757-463-4306

Mr. Simon Nance	STIHL Incorporated Manager of Training and Development	STIHL Incorporated 536 Viking Drive P.O. Box 2015 Virginia Beach, VA 23450-2015 757-486-9222
Dr. Larry Mattix	Norfolk State University Acting Dean of the College of Science, Engineering and Technology	Norfolk State University CSET 700 Park Avenue Norfolk, VA 23504 757-823-9444
Michael Kosloski, Ph.D.	Old Dominion University Assistant Professor STEM Marketing Education Program Director & Training Specialist Program Director	Old Dominion University STEMPS Department Education Bldg. Room 228 Norfolk, VA 23529 757-683-3314

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

STATEMENT OF ASSURANCES and Planning Committee Agreement

The authorized signature on this page certifies to the Virginia Department of Education that the authorized official assures that:

1. As a member of the planning committee, I have received and reviewed the provisions of *Administrative Procedures Guide for the Establishment of Governor's STEM Academies* outlined in the Guidance Manual, and understand that an implementation proposal will need to address these criteria and/or others approved by the Virginia Board of Education.

2. As a member of the planning committee, I agree to follow the guidelines set forth in the *Administrative Procedures* Guide for the Establishment of Governor's STEM Academy's document.

3. A public, government entity will serve as the grant fiscal agent.

Certification by Authorized or Institutional Official:

By signing this agreement, I certify that I am a willing supporter and participant in the process of establishing a Governor's STEM Academy. I certify that to the best of my knowledge the information in this application is correct, that the filing of this application is duly authorized by the partners participating in this process to establish a Governor's STEM Academy, and that the applicant will comply with the statements of assurances.

Dr. James G. Merrill	Superintendent
Typed or Printed Name of Authorized Official	Title
Signature of Authorized Official	11/29/11
	Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

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Dr. Sheila Magula	Deputy Superintendent
Typed or Printed Name of Authorized Official	Title
Sheila S. Magula	November 29, 2011
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

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Mrs. Jobynia Caldwell	Assistant Superintendent of High Schools
Typed or Printed Name of Authorized Official	Title
Jobynia B. Caldwell	November 28, 2011
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

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Mr. Joe Burnsworth	Assistant Superintendent of Curriculum and Instruction
Typed or Printed Name of Authorized Official	Title
Joe Burnsworth	November 28, 2011
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

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PATRICK M. KONOPNICKI
Typed or Printed Name of Authorized Official

DIRECTOR, TCE
Title

Signature of Authorized Official

11/28/11
Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

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JERRY W STEWART
Typed or Printed Name of Authorized Official

TCC GENERAL ADVISORY COUNCIL, CHAIR
Title

Signature of Authorized Official

11/29/11
Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Mr. Farrell Hanzaker	Chief Financial Officer
Typed or Printed Name of Authorized Official	Title
Farrell Hanzaker	11/28/11
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

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Mr. Ramesh Kapoor	Chief Information Officer Department of Technology
Typed or Printed Name of Authorized Official	Title
Ramesh Kapoor	11/29/2011
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Mr. Todd Tarkenton	Director of Secondary Instructional Services and Academy Programs
Typed or Printed Name of Authorized Official	Title
C. Todd Tarkenton	11-28-11
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

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Dr. Brian K. Matney	Principal, Landstown High School and Technology Academy
Typed or Printed Name of Authorized Official	Title
Signature of Authorized Official	11/29/11
	Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

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R. Lisette Diehl
Typed or Printed Name of Authorized Official

LHS Technology Academy Coordinator
Title

R. Lisette Diehl
Signature of Authorized Official

11/4/11
Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

STATEMENT OF ASSURANCES and Planning Committee Agreement

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James E. Barger
Typed or Printed Name of Authorized Official

Dept. Chair Pre-engineering
Title

Signature of Authorized Official

11/3/11
Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

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Nancy Dowding
Typed or Printed Name of Authorized Official

Business + IT Teacher
Title

Nancy G Dowding
Signature of Authorized Official

Nov 3 2011
Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

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Ann King
Typed or Printed Name of Authorized Official

Marketing Teacher
Title

Ann King
Signature of Authorized Official

Nov. 3, 2011
Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

STATEMENT OF ASSURANCES and Planning Committee Agreement

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[illegible]	President Langley + McDonald
Typed or Printed Name of Authorized Official	Title
[illegible]	11/8/10
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

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Simon Nance
Typed or Printed Name of Authorized Official

Manager - Training & Development
Title STIHL Inc

Signature of Authorized Official

7 Nov '11
Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

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Larry Mattix	Acting Dean, CSET, Norfolk State Univ.
Typed or Printed Name of Authorized Official	Title
	11/08/2011
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

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Michael Kosloski	Asst. Professor, STEM Education and
Typed or Printed Name of Authorized Official	Title Professional Studies
	November 10, 2011
Signature of Authorized Official	Date

Appendix B:

Advisory

Committee

Members

Advisory Committee Members

Dr. Brian Matney	Principal of Landstown High School and Technology Academy	Landstown High School and Technology Academy 2001 Concert Drive Virginia Beach, VA 23456 757-648-5549
Mrs. Lisette Diehl	Coordinator of the Technology Academy at Landstown High School	Landstown High School and Technology Academy 2001 Concert Drive Virginia Beach, VA 23456 757-648-5505
Mrs. Natasha Christian	Assistant Principal Science Department Administrator Landstown High School	Landstown High School and Technology Academy 2001 Concert Drive Virginia Beach, VA 23456 757-648-5544
Dr. James Barger	Engineering Technology Departmental Chairperson Technology Academy @ Landstown High School	Landstown High School and Technology Academy 2001 Concert Drive Virginia Beach, VA 23456 757-648-5500
Ms. Nancy Dowding	Information Technology/Business Departmental Chairperson Technology Academy @ Landstown High School	Landstown High School and Technology Academy 2001 Concert Drive Virginia Beach, VA 23456 757-648-5500
Mrs. Ann King	Entrepreneurship Technology/Marketing Departmental Chairperson Technology Academy @ Landstown High School	Landstown High School and Technology Academy 2001 Concert Drive Virginia Beach, VA 23456 757-648-5500
Mr. Ronald Shaneyfelt	Science Teacher and NASA liaison Landstown High School and Technology Academy	Landstown High School and Technology Academy 2001 Concert Drive Virginia Beach, VA 23456 757-648-5500
Mrs. Lisa Ferran	Math/Computer Teacher Landstown High School and Technology Academy	Landstown High School and Technology Academy 2001 Concert Drive Virginia Beach, VA 23456 757-648-5500
Mr. Lavell White	Technology Academy Guidance liaison Landstown High School and Technology Academy	Landstown High School and Technology Academy 2001 Concert Drive Virginia Beach, VA 23456 757-648-5541

Linda J. Love, Ed.D.	Instructional Specialist Office of Compensatory Programs and Intervention VBCPS	VBCPS 2512 George Mason Drive Virginia Beach, VA 23456 757-263-1188
Mrs. Rhonda Doak	Coordinator for Business and Information Technology Office of Technical Career Education VBCPS	Advanced Technology Center 1800 College Crescent Virginia Beach, VA 23453 757-648-6180
Ms. Susan Dozier	Tidewater Community College Professor Division of Information Technology & Business	Tidewater Community College 1700 College Crescent Virginia Beach, VA 23453 757-822-7048
Dr. Larry Mattix	Norfolk State University Acting Dean of the College of Science, Engineering and Technology	Norfolk State University CSET 700 Park Avenue Norfolk, VA 23504 757-823-9444
Michael Kosloski, Ph.D.	Old Dominion University Assistant Professor STEM Marketing Education Program Director & Training Specialist Program Director	Old Dominion University STEMPS Department Education Bldg. room 228 Norfolk, VA 23529 757-683-3314
Mr. Mark Meadows	Virginia Commonwealth University Director of Student Recruitment Engineering	VCU West Hall 601 West Main Street P.O. Box 843068 Richmond, VA 23284 804-827-4005
Mr. Frank Gomez	ECPI University Freshman Admissions Presenter	ECPI University 5555 Greenwich Road Virginia Beach, VA 23462 757-715-5309
Mr. Simon Nance	STIHL Incorporated Manager of Training and Development	STIHL Incorporated 536 Viking Drive P.O. Box 2015 Virginia Beach, VA 23450-2015 757-486-9222
Ms. Carol Edelman	VAFIRST FTC Team Development Coordinator	Science Museum of Virginia 2500 West Broad Street Richmond, VA 23220 804-513-7381
Ms. Sally Sylvester	FIRST Senior Mentor	3709 Sovereign Lane Richmond, VA 23233 804-360-4728

Mr. Tom Langley, PE, LS	President Langley & McDonald	Langley & McDonald 309 Lynnhaven Parkway Virginia Beach, VA 23452 757-463-4306
Mr. Jim Batterson	NASA Flight Controls Engineer – retired Former Senior Advisor to the Commonwealth of Virginia for STEM initiatives High school math & physics teacher - retired	9180 Wigneil Street Suffolk, VA 23433 757-238-7025 (preferred) 757-576-3475 (cell)
Mr. Mark Clemente, NBCT	National Institute of Aerospace Educator in Residence Science teacher VBCPS	100 Exploration Way Hampton, VA 23666 757-325-6801
Mr. Larry Dart	GEICO Region 7 Senior Employment Specialist USN Retired/Military Recruiter High School CO-OP Coordinator	GEICO 1345 Perimeter Parkway Virginia Beach, VA 23454 757-222-6345
Ms. Diana Counts	Beach Municipal Federal Credit Union Vice President Marketing	Beach Municipal Federal Credit Union 4164 Virginia Beach Blvd. Virginia Beach, VA 23452 757-416-6189
Mr. Johnnie Draughon	Parent of student enrolled in the LHS Technology Academy	5332 Balfor Drive Virginia Beach, VA 23464 757-366-0051
Mr. Wayne Mantay	Robotics mentor for LHS Research Engineer DOD/NASA	911 Dare Road Yorktown, VA 23692 757-898-3789

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

STATEMENT OF ASSURANCES and Advisory Committee Agreement

The authorized signature on this page certifies to the Virginia Department of Education that the authorized official assures that:

1. As a member of the advisory committee, I am aware that the technology Academy at Landstown High School is submitting a proposal to become a Governor's STEM Academy.

2. As a member of the advisory committee, I will:
   a. Provide input and guidance in the development of curriculum and course offering.
   b. Assist in the monitoring and assessment of the program.
   c. Provide opportunities to the students in the form of internships, mentorships, job shadowing, if appropriate.

Certification by Authorized or Institutional Official:

By signing this agreement and serving on the advisory committee, I certify that I am a willing supporter and participant in the process of establishing a Governor's STEM Academy at the Technology Academy of Landstown High School.

Dr. Brian K. Matney	Principal, Landstown High School and Technology Academy
Typed or Printed Name of Authorized Official	Title
Signature of Authorized Official	11/29/11
	Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

STATEMENT OF
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R. Lisette Diehl
Typed or Printed Name of Authorized Official

LHS Technology Academy Coordinator
Title

R. Lisette Diehl
Signature of Authorized Official

11/4/11
Date

Governor's Science, Technology, Engineering
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Mathematics (STEM)
Academy

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   c. Provide opportunities to the students in the form of internships, mentorships, job shadowing, if appropriate.

Certification by Authorized or Institutional Official:

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Natasha Christian, RN, BS, MS — Assistant Principal - Science
Typed or Printed Name of Authorized Official — Title

Natasha Christian — 11.8.11
Signature of Authorized Official — Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

STATEMENT OF ASSURANCES and Advisory Committee Agreement

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James Barger — Typed or Printed Name of Authorized Official

Pre-Engineering Teacher/Chair — Title

Signature of Authorized Official

11/4/11 — Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

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Ann King
Typed or Printed Name of Authorized Official

Marketing Teacher, Department Chair
Title

Ann King
Signature of Authorized Official

Nov. 4, 2011
Date

Governor's Science, Technology, Engineering
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Mathematics (STEM)
Academy

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Nancy Dawding
Typed or Printed Name of Authorized Official

Business + IT Department Chair
Title

Nancy Dawding
Signature of Authorized Official

Nov 7 '11
Date

Governor's Science, Technology, Engineering
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Mathematics (STEM)
Academy

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Ron Shaneyfelt — Teacher (Astronomy)
Typed or Printed Name of Authorized Official — Title

Ron Shaneyfelt — 11-4-2011
Signature of Authorized Official — Date

Governor's Science, Technology, Engineering
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Mathematics (STEM)
Academy

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Lisa Ferraw	Computer/Math Teacher
Typed or Printed Name of Authorized Official	Title
Lisa Ferr	11-9-11
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering
and
Mathematics (STEM)
Academy

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Lavell White
Typed or Printed Name of Authorized Official

School Guidance Counselor + Technology Academy Liaison
Title

Lavell White
Signature of Authorized Official

11/4/11
Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Linda J. Love, Ed.D. — Typed or Printed Name of Authorized Official

Instructional Specialist — Title

Signature of Authorized Official

11/12/11 — Date

Governor's Science, Technology, Engineering
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Mathematics (STEM)
Academy

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Rhonda S. J. Doak	Business & Information Technology Coordinator
Typed or Printed Name of Authorized Official	Title
Rhonda S. J. Doak	November 16, 2011
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Larry Mattix	Acting Dean, CSET at NSU
Typed or Printed Name of Authorized Official	Title
	11/08/2011
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Michael F. Kosloski, Jr.	Asst. Professor, STEM Education and Professional Studies
Typed or Printed Name of Authorized Official	Title
	November 7, 2011
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering
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Mathematics (STEM)
Academy

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Susan N. Dozier — Typed or Printed Name of Authorized Official

Professor TCC — Title

Susan N. Dozier — Signature of Authorized Official

11/9/11 — Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Mark D Meadows	Director of Student Recruitment, VC Engineering
Typed or Printed Name of Authorized Official	Title
Mark D Meadows	11/16/2011
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Simon Nence
Typed or Printed Name of Authorized Official

Manager - Training & Development
Title STIHL Inc.

Signature of Authorized Official

4 Nov. '11
Date

Governor's Science, Technology, Engineering
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Mathematics (STEM)
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Carol Edelman
Typed or Printed Name of Authorized Official

11/10/11
Title VA FIRST FTC Team Development Coordinator

Carol Edelman
Signature of Authorized Official

11/10/11
Date

Governor's Science, Technology, Engineering
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Sally Sylvester
Typed or Printed Name of Authorized Official

FIRST Senior Mentor Virginia
Title

Sally Sylvester
Signature of Authorized Official

11/15/11
Date

Governor's Science, Technology, Engineering
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Mathematics (STEM)
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Frank Gomez
Typed or Printed Name of Authorized Official

Freshman Adm. Advisor ECPI
Title

Frank Gomez
Signature of Authorized Official

11/4/11
Date

Governor's Science, Technology, Engineering
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TOM B. LANGLEY	President Langley + McDonald
Typed or Printed Name of Authorized Official	Title
Tom B. Langley	11/8/11
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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JAMES G. BATTERSON — NASA Aerospace Engineer (Retired)

Typed or Printed Name of Authorized Official — Title

Signature of Authorized Official — Date: NOV. 29, 2011

Governor's Science, Technology, Engineering
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Mark A. Clemente
Typed or Printed Name of Authorized Official

Teacher
Title

Signature of Authorized Official

11/8/11
Date

Governor's Science, Technology, Engineering
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Larry Dart
Typed or Printed Name of Authorized Official

Senior Employment Specialist
Title Military Recruiter

Larry Dart
Signature of Authorized Official

11-6-11
Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Diana Counts
Typed or Printed Name of Authorized Official

VP marketing
Title

Signature of Authorized Official

11/8/11
Date

Governor's Science, Technology, Engineering
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Mathematics (STEM)
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Johnnie Drangher
Typed or Printed Name of Authorized Official

Parent
Title

Johnnie E. Drangher
Signature of Authorized Official

11/4/11
Date

Governor's Science, Technology, Engineering
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WAYNE R. MANTAY
Typed or Printed Name of Authorized Official

Research Engineer DoD/NASA
Title Robotics/Mentor

Wayne R. Mantay
Signature of Authorized Official

12 Nov 2011
Date

Appendix C:

Plans of Study

for the

Governor's STEM Academy

for

Engineering, Marketing,

and

Information Technology

Studies

Rev: 5/18/11

Commonwealth of Virginia Plan of Study

Student Name:
School: Landstown High School and Technology Academy
Date:

Cluster: Information Technology **Pathway:** Web and Digital Communications

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses Source: Administrative Planning Guide http://www.cteresource.org/apg/	SAMPLE – Occupations Relating to This Pathway: http://www.doe.virginia.gov/instruction/career_technical/career_clusters/sample_plans_study/index.shtml http://www.careerclusters.org http://www.cteresource.org/cpg/
Graduation Requirements: http://www.doe.virginia.gov/instruction/graduation/index.shtml								
MIDDLE	7	1115 English 7 or 1116 Advanced English 7	3111 Math 7 or 3130 Algebra I Honors	4116 Life Science 7 or **4118 Advanced Science 7**	2356 Social Studies 7		**NOTE: Use state course titles** 6609/9 Computer Solutions 6609/18 Computer Solutions	
MIDDLE	8	1123 English 8 or 1124 Advanced English 8	3112 Math 8 or **3130 Algebra I Honors** or 3143 Geometry Honors	4126 Physical Science 8 or **4210 Earth Science**	2106 Social Studies 8		6151 Keyboarding 6153 Keyboarding Applications	
Career Assessment: Identify an appropriate career assessment instrument at the middle school level used to help students and their parents plan for high school: VA Wizard ☒ or other assessment (please indicate): Virginia View ability inventory								
SECONDARY	9	2130 Technology Academy Honors English	3130 Algebra I Honors or **3143 Geometry Honors** or 3135 Algebra II or 3137 Algebra II/Trig	4210 Earth Science or **4310 Biology**	2344 World History part 1 or 2211 AP Human Geography	2801 Economics & 6121 Finance Management 7300 Health & PE Level I 7405 Health & PE Level II/Drivers Education Foreign Language: 5110/5120/5130 French I–III or 5210/5220/5230 German I-III or 5310/5320/5330 Latin I-III or 5410 Russian I or 5510/5520/5530 Spanish I–IV or 5850/5860/5870 Japanese I-III 6635 Computer Information Systems (COE) 6625 Advanced Computer Information Systems (COE) 6500 Web-based Development and Administration	6670 Information Technology Fundamentals	- Animator - Digital Media Designer - Graphic Designer - Instructional Technologist - Media Specialist - Multimedia Author - Multimedia Developer - Multimedia Specialist - Producer - Production Assistant - Streaming Media Specialist - Virtual Reality Specialist - Web Administrator - Web Architect/Designer - Web Designer - Web Developer - Web Producer - Webmaster
SECONDARY	10	2135 Technology Academy Honors English	3143 Geometry Honors or 3134 Algebra Functions & Data Analysis or **3135 Algebra II or** **3137 Algebra II/Trig**	4310 Biology or **4410 Chemistry** or 4250 Oceanography or 4260 Astronomy	2340 World History part 2 or 2399 AP European History		6630 Design, Multimedia and Web Technologies	
SECONDARY	11	2150 Technology Academy Honors English or **1197 AP English 11 and DE 1111/1112 College Composition**	3135 Algebra II or 3137 Algebra II/Trig or 3154 Discrete Math or 3150 Trigonometry or 3190 Probability & Statistics or **3162 Math Analysis/Pre-Calculus** or **3185 AP Computer Science** or 3192 AP Statistics	4410 Chemistry or **4510 Physics** or 4250 Oceanography or 4260 Astronomy or 4270 AP Environmental Science or 4340 AP Biology or 4440 AP Chemistry 4541 AP Physics	2360 VA/US History or 2319 AP VA/US History		6660 Database Design and Management (Oracle)	
SECONDARY	12	2160 Technology Academy Honors English or **1196 AP English 12 or DE 1111/1112 College Composition** or **DE 1131/1125 Technical Writing & Intro to Literature**	3135 Algebra II or 3137 Algebra II/Trig or 3154 Discrete Math or 3150 Trigonometry or 3190 Probability & Statistics or 3162 Math Analysis/Pre-Calculus or 3185 AP Computer Science or **3192 AP Statistics or** **3177 AP Calculus A/B** or **3178 AP Multivariate Calculus**	4410 Chemistry or 4510 Physics or 4250 Oceanography or 4260 Astronomy or **4270 AP Environmental Science or** **4340 AP Biology or** **4440 AP Chemistry or** **4541 AP Physics**	2440 VA/US Government or 2445 AP VA/US Government		6662 Database Design and Management with PL/SQL (Oracle)	
High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)								

List related certifications/credentials approved by VDOE and offered locally:
http://www.cteresource.org/apg (Go to Certification – License Section)
IC3 Certification
Adobe Certified Associate
Oracle Certifications (Oracle Corporation):
Introduction to SQL certification
Introduction to PL/SQL certification
Workplace Readiness Skills for the Commonwealth Certification(CTECS)
Microsoft Office Specialist
W!SE Financial Literacy Certification (W!SE)
Cisco CCNA Academy I and II Certifications (Cisco)

Additional Learning Opportunities:
CTSO Organization(s): ☐ DECA ☒ FBLA ☐ FCCLA ☐ FFA ☐ FEA ☐ HOSA ☐ SkillsUSA ☐ TSA

Work-Based Learning:
☒ Career Research ☒ Cooperative Education ☒ Internship ☒ Mentorship
☒ Job Shadowing ☒ Service Learning Project ☐ Student Apprenticeship

Postsecondary: Placement Assessments such as COMPASS & SAT II

College Entrance Exams such as ACT & SAT

POSTSECONDARY

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY
Individual plans must include locally agreed upon courses at the postsecondary level (See page 2)

Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree	Postgraduate Degree
Web & Digital Communications	Associate of Science Degree: Science Specialization: Computer Science	Business Administration – Information Technology	

College: Tidewater Community College

School Division(s):

POSTSECONDARY - COMMUNITY COLLEGE or APPRENTICESHIP - Determined Locally

Postsecondary: Placement Assessments such as COMPASS & SAT II

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives			
POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.								
Year 1 1st Semester	DE ENG 111 College Composition I	MTH 173 Calculus with Analytic Geometry I		HIS 101 History of Western Civilization I or other approved HIS elective	CSC 110 Introduction to Computing			SDV 100 College Success Skills
Year 1 2nd Semester	DE ENG 112 College Composition II	MTH 174 Calculus with Analytic Geometry I74		HIS 102 History of Western Civilization II or other approved HIS elective	CSC 201 Computer Science I			
Year 2 1st Semester			Approved Science with Lab Elective	Approved Social Science Elective	CSC 205 Computer Organization	CSC 210 Programming with C++		Health/Physical Education Elective
Year 2 2nd Semester			Approved Science with Lab Elective		CSC Advanced Computer Organization	Approved Elective for intended transfer program	2 Approved Humanities Elective	

College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

Related Industry Certifications Available:	Additional Suggested Learning Opportunities: **Work-Based Learning:** ☐ Cooperative Education ☐ Internship ☐ Mentorship ☐ Job Shadowing ☐ Service Learning Project ☐ Registered Apprenticeship

UNIVERSITY

University/College: Old Dominion University
Degree or Major: Bachelor Of Science in Business Administration – Information Technology
Number of Articulated CC Credits: 60 minimum

Notes:

Rev: 5/18/11

Commonwealth of Virginia Plan of Study

Student Name:
School: Landstown High School and Technology Academy
Date:

Cluster: Marketing **Pathway:** Professional Sales

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses Source: Administrative Planning Guide http://www.cteresource.org/apg/	SAMPLE – Occupations Relating to This Pathway: http://www.doe.virginia.gov/instruction/career_technical/career_clusters/sample_plans_study/index.shtml http://www.careerclusters.org http://www.cteresource.org/cpg/
Graduation Requirements: http://www.doe.virginia.gov/instruction/graduation/index.shtml								
MIDDLE	7	1115 English 7 or 1116 Advanced English 7	3111 Math 7 or 3230 Algebra I Honors	4116 Life Science 7 or **4118 Advanced Science 7**	2356 Social Studies 7		**NOTE: Use state course titles**	
MIDDLE	8	1123 English 8 or 1124 Advanced English 8	3112 Math 8 or **3130 Algebra I Honors** or 3143 Geometry Honors	4126 Physical Science 8 or **4210 Earth Science**	2106 Social Studies 8			
Career Assessment: Identify an appropriate career assessment instrument at the middle school level used to help students and their parents plan for high school: VA Wizard ☒ or other assessment (please indicate): Virginia View ability inventory								Account Executive Administrative Support Representative Agent Broker Business Development Manager Channel Sales Manager Client Relationship Manager Customer Service Representative Field Marketing Representative Field Representative Inbound Call Manager Industrial Sales Representative Key Account Manager Manufacturer's Representative National Account Manager Outside Sales Representative Regional Sales Manager Retail Sales Specialist Sales Engineer Sales Executive Sales/Marketing Associate Solutions Advisor Technical Sales Specialist Telemarketer Vice President of Sales
SECONDARY	9	2130 Technology Academy Honors English	3130 Algebra I Honors or **3143 Geometry Honors** or 3135 Algebra II or 3137 Algebra II/Trig	4210 Earth Science or **4310 Biology**	2344 World History part 1 or 2211 AP Human Geography	2801 Economics & 6121 Finance Management	9093 Entrepreneurship	
SECONDARY	10	2135 Technology Academy Honors English	3143 Geometry Honors or 3134 Algebra Functions & Data Analysis or **3135 Algebra II** or **3137 Algebra II/Trig**	4310 Biology or **4410 Chemistry** or 4250 Oceanography or 4260 Astronomy	2340 World History part 2 or 2399 AP European History	7300 Health & PE Level I 7405 Health & PE Level II/Drivers Education Foreign Language: 5110/5120/5130/5140 French I–IV or 5210/5220/5230/5240 German I-IV or 5310/5320/5330/5340 Latin I-IV or 5410 Russian I or 5510/5520/5530/5540 Spanish I–IV or 5850/5860/5870 Japanese I-III 8140 Fashion Marketing 8135 Global Marketing and Commerce	8125 Internet Marketing	
SECONDARY	11	2150 Technology Academy Honors English or **1197 AP English 11 and DE 1111/1112 College Composition**	3135 Algebra II or 3137 Algebra II/Trig or **3154/sem Discrete Math or** **3150/sem Trigonometry or** **3190/sem Probability & Statistics or** **3162 Math Analysis/Pre Calculus** or 3185 AP Computer Science or 3192 AP Statistics	4410 Chemistry or **4510 Physics** or 4250 Oceanography or 4260 Astronomy or 4270 AP Environmental Science or 4340 AP Biology or 4440 AP Chemistry 4541 AP Physics	2360 VA/US History or 2319 AP VA/US History		8120 Marketing	
SECONDARY	12	2160 Technology Academy Honors English or **1196 AP English 12 or DE 1111/1112 College Composition** or **DE 1131/1125 Technical Writing & Intro to Literature**	3135 Algebra II or 3137 Algebra II/Trig or 3154/sem Discrete Math or 3150/sem Trigonometry or 3190/sem Probability & Statistics or **3162 Math Analysis/Pre Calculus** or 3185 AP Computer Science or **3192 AP Statistics** or **3177 AP Calculus A/B** or **3178 AP Multivariate Calculus**	4410 Chemistry or **4510 Physics** or 4250 Oceanography or 4260 Astronomy or **4270 AP Environmental Science or** **4340 AP Biology or** **4440 AP Chemistry or** **4541 AP Physics**	2440 VA/US Government or 2445 AP VA/US Government		8130 Advanced Marketing	
High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)								

List related certifications/credentials approved by VDOE and offered locally:	Additional Learning Opportunities:
http://www.cteresource.org/apg (Go to Certification – License Section) Workplace Readiness Skills for the Commonwealth Certification (CTECS) Customer Service Certification (NRFF) Sales Certification (NRFF)	CTSO Organization(s): ☒ DECA ☐ FBLA ☐ FCCLA ☐ FFA ☐ FEA ☐ HOSA ☐ SkillsUSA ☐ TSA **Work-Based Learning:** ☒ Career Research ☒ Cooperative Education ☒ Internship ☒ Mentorship ☒ Job Shadowing ☒ Service Learning Project ☐ Student Apprenticeship
Postsecondary: Placement Assessments such as COMPASS & SAT II	College Entrance Exams such as ACT & SAT

POSTSECONDARY

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY
Individual plans must include locally agreed upon courses at the postsecondary level (See page 2)

Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree	Postgraduate Degree
	Associate of Science Degree – Business Administration	Business Administration - Marketing	

College: Tidewater Community College **School Division(s):**

Postsecondary: Placement Assessments such as COMPASS & SAT II

POSTSECONDARY - COMMUNITY COLLEGE or APPRENTICESHIP - Determined Locally

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives			
POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.								
Year 1 1st Semester	DE ENG 111 College Composition I	MTH 163 Pre-calculus		Approved History Elective		Approved Elective for intended transfer program	Health/Physical Education Elective	SDV 100 College Success Skills
Year 1 2nd Semester	DE ENG 112 College Composition II	MTH 270 Applied Calculus		ECO 201 Principles of Macroeconomics	CST 100 Principles of Public Speaking	Approved Humanities elective	ITE 115 Introduction to Computer Applications and Concepts	
Year 2 1st Semester			Approved Science with Lab Elective	ECO 202 Principles of Microeconomics	ACC 211 Principles of Accounting I	BUS 280 Introduction to International Business or ECO 210	Approved Elective for intended transfer program	
Year 2 2nd Semester		BUS 216 Probability and Statistics for Business and Economics	Approved Science with Lab Elective		ACC 212 Principles of Accounting II	Approved Humanities elective	Approved Elective for intended transfer program	

College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

Related Industry Certifications Available:	Additional Suggested Learning Opportunities:
	Work-Based Learning: ☐ Cooperative Education ☐ Internship ☐ Mentorship ☐ Job Shadowing ☐ Service Learning Project ☐ Registered Apprenticeship

UNIVERSITY

University/College: Old Dominion University
Degree or Major: Bachelor of Science in Business Administration - Marketing
Number of Articulated CC Credits: 64 minimum

Notes:

Rev: 5/18/11

Commonwealth of Virginia Plan of Study

Science, Technology, Engineering & Mathematics

Student Name:
School: Landstown High School and Technology Academy
Date:

Cluster: Science, Technology, Engineering & Mathematics **Pathway:** Engineering and Technology

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses Source: Administrative Planning Guide http://www.cteresource.org/apg/	SAMPLE – Occupations Relating to This Pathway: http://www.doe.virginia.gov/instruction/career_technical/career_clusters/sample_plans_study/index.shtml http://www.careerclusters.org http://www.cteresource.org/cpg/
Graduation Requirements: http://www.doe.virginia.gov/instruction/graduation/index.shtml								
MIDDLE	7	1115 English 7 or 1116 Advanced English 7	3111 Math 7 or 3130 Algebra I Honors	4116 Life Science 7 or **4118 Advanced Science 7**	2356 Social Studies 7		**NOTE: Use state course titles** 8464 Inventions and Innovations	Aeronautical Engineer Aerospace Engineer Agricultural Engineer Application Engineer Architectural Engineer Automotive Engineer Biomedical Engineer Biotechnology Engineer Chemical Engineer Civil Engineer Communications Engineer Computer Engineer Construction Engineer Electrical Engineer Geothermal Engineer Industrial Engineer Manufacturing Engineer Marine Engineer Mechanical Engineer Mining Engineer Nuclear Engineer Petroleum Engineer Product/Process Engineer Systems Engineer Transportation Engineer
MIDDLE	8	1123 English 8 or 1124 Advanced English 8	3112 Math 8 or **3130 Algebra I Honors** or 3143 Geometry Honors	4126 Physical Science 8 or **4210 Earth Science**	2106 Social Studies 8		8463 Technological Systems	
Career Assessment: Identify an appropriate career assessment instrument at the middle school level used to help students and their parents plan for high school: VA Wizard ☒ or other assessment (please indicate): Virginia View ability inventory								
SECONDARY	9	2130 Technology Academy Honors English	3130 Algebra I Honors or **3143 Geometry Honors** or 3135 Algebra II or 3137 Algebra II/Trig	4210 Earth Science or **4310 Biology**	2344 World History part 1 or 2211 AP Human Geography	2801 Economics & 6121 Finance Management 7300 Health & PE Level I 7405 Health & PE Level II/Drivers Education Foreign Language: 5110/5120/5130/5140 French I–IV or 5210/5220/5230/5240 German I-IV or 5310/5320/5330/5340 Latin I-IV or 5410 Russian I or 5510/5520/5530/5540 Spanish I–IV or 5850/5860/5870 Japanese I-III 9811 Physics of Tech I 9812 Physics of Tech II 8436 Engineering Drawing and Design 8416 Electronic Systems I 8412 Electronic Systems II	8435 Technical Drawing and Design	
SECONDARY	10	2135 Technology Academy Honors English	3143 Geometry Honors or 3134 Algebra Functions & Analysis or **3135 Algebra II or** **3137 Algebra II/Trig**	4310 Biology or **4410 Chemistry** or 4250 Oceanography or 4260 Astronomy	2340 World History part 2 or 2399 AP European History		8433 Materials and Processes Technology	
SECONDARY	11	2150 Technology Academy Honors English or **1197 AP English 11 and DE 1111/1112 College Composition**	3135 Algebra II or 3137 Algebra II/Trig or 3154/sem Discrete Math or 3150/sem Trigonometry or 3190/sem Probability & Statistics or **3162 Math Analysis/Pre-Calculus** or 3185 AP Computer Science or **3192 AP Statistics**	4410 Chemistry or **4510 Physics** or 4250 Oceanography or 4260 Astronomy or 4270 AP Environmental Science or 4340 AP Biology or 4440 AP Chemistry 4541 AP Physics	2360 VA/US History or 2319 AP VA/US History		8439 Introduction to Engineering Design	
SECONDARY	12	2160 Technology Academy Honors English or **1196 AP English 12 or DE 1111/1112 College Composition** or **DE 1131/1125 Technical Writing & Intro to Literature**	3135 Algebra II or 3137 Algebra II/Trig or 3154/sem Discrete Math or 3150/sem Trigonometry or 3190/sem Probability & Statistics or 3162 Math Analysis/Pre-Calculus or 3185 AP Computer Science or 3192 AP Statistics or **3177 AP Calculus A/B or** **3178 AP Multivariate Calculus**	4410 Chemistry or 4510 Physics or 4250 Oceanography or 4260 Astronomy or **4270 AP Environmental Science or** **4340 AP Biology or** **4440 AP Chemistry or** **4541 AP Physics**	2440 VA/US Government or 2445 AP VA/US Government		8443 Engineering Design and Development	
High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)								

List related certifications/credentials approved by VDOE and offered locally:
http://www.cteresource.org/apg (Go to Certification – License Section)
Pre-Engineering/Engineering Technology Certification (NOCTI)
AutoCAD 2010 certification (Certiport)
Workplace Readiness Skills for the Commonwealth Certification ((CTECS)

Additional Learning Opportunities:
CTSO Organization(s): ☐ DECA ☐ FBLA ☐ FCCLA ☐ FFA ☐ FEA ☐ HOSA ☐ SkillsUSA ☒ TSA

Work-Based Learning:
☒ Career Research ☐ Cooperative Education ☒ Internship ☒ Mentorship
☒ Job Shadowing ☒ Service Learning Project ☐ Student Apprenticeship

Postsecondary: Placement Assessments such as COMPASS & SAT II

College Entrance Exams such as ACT & SAT

POSTSECONDARY

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY
Individual plans must include locally agreed upon courses at the postsecondary level (See page 2)

Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree	Postgraduate Degree
	Associate of Science Degree: Engineering	Engineering Technology	

College: Tidewater Community College

School Division(s):

POSTSECONDARY - COMMUNITY COLLEGE or APPRENTICESHIP - Determined Locally

Postsecondary: Placement Assessments such as COMPASS & SAT II

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives			
POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.								
Year 1 1st Semester	DE ENG 111 College Composition	MTH 173 Calculus with Analytic Geometry I	CHM 111 College Chemistry I	Approved History Elective	EGR 120 Introduction to Engineering I		SDV 101 Orientation to Engineering and Technologies	
Year 1 2nd Semester	ENG 131 Technical Report Writing I	MTH 174 Calculus with Analytic Geometry II	CHM 112 College Chemistry II		EGR 110 Engineering Graphics	Approved Engineering Elective for intended transfer program		
Year 2 1st Semester		MTH 279 Ordinary Differential Equations	PHY 241 University Physics I	Approved Social Science Elective	EGR 125 Introduction to Engineering Methods (C++)	Approved Engineering Elective for intended transfer program		
Year 2 2nd Semester		MTH Vector Calculus	PHY 242 University Physics II			Approved Engineering Elective for intended transfer program	2 Approved Humanities Electives	Health/Physical Education Elective

College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

Related Industry Certifications Available:	Additional Suggested Learning Opportunities: **Work-Based Learning:** ☐ Cooperative Education ☐ Internship ☐ Mentorship ☐ Job Shadowing ☐ Service Learning Project ☐ Registered Apprenticeship

UNIVERSITY

University/College: Old Dominion University
Degree or Major: Bachelor of Science in Engineering Technology
Number of Articulated CC Credits: 71 minimum

Notes:

Appendix D:

Student

Application

VIRGINIA BEACH CITY PUBLIC SCHOOLS

A H E A D O F T H E C U R V E

Department of Curriculum and Instruction

Office of Instructional Services and Academy Programs

ACADEMY PROGRAMS
ADVANCED ACADEMIC PROGRAMS

APPLICATION

Student Data Sheet

Due Wednesday, February 1, 2012 to the student's school Guidance Office

Late, faxed and emailed copies as well as incomplete applications will not be processed.

PLEASE TYPE OR PRINT.

Check each program to which you wish to apply.

Academy Programs					Advanced Academic Programs	
Global Studies and World Languages Academy (Essay)	Health Sciences Academy (Essay)	Legal Studies Academy (Essay)	Technology Academy (Electronic Portfolio/Essay)	Visual and Performing Arts Academy (Auditions)	International Baccalaureate Program (Admissions Exam)	Mathematics and Science Academy (Admissions Exam)
☐	☐	☐	☐	☐	☐	☐

Name _____
(Last) (First) (Middle)

Home Address _____
(Street)

_____
(City) (State) (Zip Code)

E-mail Address _____

Current Grade Level _____ Date of Birth _____ Gender _____

Student Number _____ Home Phone # _____

Mother's/Guardian's Name _____ Work Phone # _____

Cell Phone # _____

Father's/Guardian's Name _____ Work Phone # _____

Cell Phone # _____

Current School _____ Zoned High School _____

VIRGINIA BEACH CITY PUBLIC SCHOOLS
AHEAD OF THE CURVE

High School Academy Programs and Advanced Academic Programs
Application Process

Students interested in attending one of the academy programs and/or advanced academic programs are required to submit an application. All required components of the student application, including the signed student forms, parent forms, teacher recommendations, and items outlined below for each program, must be turned into the school guidance counselor by the deadline, February 1, 2012. Original applications must be submitted. **Late, faxed and emailed copies as well as incomplete applications will not be processed.** During the selection process, each program will establish a waiting list of students in the event that a student who is offered a position chooses not to accept or transfers prior to the start of school. The waiting list will remain active only until the last business day prior to the first day of school. Students must re-apply for consideration for the next school year. Each program has specific application requirements. The required application component(s) for each program is listed below:

Academy Programs

Global Studies and World Languages Academy	• Submit an essay. *Describe your interest in a specific world culture or global issue. Explain how it impacts your life and the lives of others.*
Health Sciences Academy	• Submit an essay. *Why do you want to be a medical professional and how do you see yourself in a future medical practice?*
Legal Studies Academy	• Submit an essay. *In your opinion, what is the purpose of the legal system? Describe how attending the Legal Studies Academy will enhance your knowledge of the legal system.*
Technology Academy	• Submit an electronic portfolio. See attached list or visit the Landstown High School Web site at www.landstownhs.vbschools.com for electronic portfolio requirements. • Write a thoughtful essay of approximately 350 words that expresses *why you are applying to the Technology Academy and what you hope to gain from this experience. The essay should include your thoughts and reasons for which of the three areas of concentration you wish to focus your studies: entrepreneurship, information technology or pre-engineering.* Essays should be original, creative and grammatically correct.
Visual and Performing Arts Academy	• An audition will be scheduled.

Advanced Academic Programs

International Baccalaureate Program	• Admissions Exam
Mathematics and Science Academy	• Admissions Exam • Completion of Algebra I in middle school

For Students Not Currently Enrolled in Virginia Beach City Public Schools
Students not currently enrolled in Virginia Beach City Public Schools must mail the application directly to each academy program and/or advanced academic program coordinator to which they are applying. All applications must be postmarked no later than February 1, 2012. ***Late, faxed and emailed copies as well as incomplete applications will not be processed.*** *The standard application and recommendation forms may be photocopied if a student applies to more than one program.*

Academy Programs

Global Studies and World Languages Academy
Tallwood High School
Attn: Ms. Rebecca Gurley
1668 Kempsville Road
Virginia Beach, VA 23464

Health Sciences Academy
Bayside High School
Attn: Mr. Brian Jones
4960 Haygood Road
Virginia Beach, VA 23452

Technology Academy
Landstown High School
Attn: Ms. Lisette Diehl
2001 Concert Drive
Virginia Beach, VA 23456

Visual and Performing Arts Academy
Salem High School
Attn: Ms. Eva Melatti
1993 Sun Devil Drive
Virginia Beach, VA 23464

Legal Studies Academy
First Colonial High School
Attn: Ms. Paige Scherr
1272 Mill Dam Road
Virginia Beach, VA 23454

Advanced Academic Programs

International Baccalaureate Program
Princess Anne High School
Attn: Ms. Helen Cox
4400 Virginia Beach Blvd.
Virginia Beach, VA 23462

Mathematics and Science Academy
Ocean Lakes High School
Attn: Dr. Ann Zingraff-Newton
885 Schumann Drive
Virginia Beach, VA 23454

VIRGINIA BEACH CITY PUBLIC SCHOOLS
Academy Programs

Technology Academy
Electronic Portfolio Requirements

Save work to a recordable CD (CD-R) using the following guidelines.

- Create a folder with your first and last name.
- Within this folder, save each completed activity in a separate folder. Do not save work as shortcuts or scraps.
- Complete three of the twelve activities.
- Include the CD with your application.
- Do not save your essay response on the CD. **Print a hard copy to include with your application.**

Examples of Student Products

Read all directions carefully and fully. Select 3 projects from the list of 12 to complete.

1. Create a 3-minute, self-running **multimedia presentation** that markets either tourism for an area within the state of Virginia or a college athletic program. Self-running describes a program that will run on its own.

   Suggested Software: *Microsoft PowerPoint or Microsoft Movie Maker*

2. Create a **newsletter** (no more than four pages) on international issues. Integration of proper grammar and formal diction are expected to be evident in the product. No copied or pasted content accepted and the product must be the student's original work.

   Suggested Software: Microsoft Publisher or Microsoft Word

3. Create a **website** for your own school that can be viewed with either the Netscape or Internet Explorer. There should be a Home Page with four additional linked pages. Copies of the school's existing web page will not be accepted.

   Suggested Software: *Netscape Composer, Dream Weaver, HTML or XHTML code.*

4. Create a **technical guide** (pamphlet, brochure, or multimedia presentation) that explains to novice users how to analyze and solve simple hardware and software problems. Consider problems such as "a job won't print" or "the computer won't turn on."

   Suggested Software: *Microsoft PowerPoint, Microsoft Publisher,* or *Microsoft Word*

5. Create an original professional grade **resume** that would reflect the accomplishments of the candidate.

   Suggested Software: *Microsoft Word*

6. Create a floor plan **design** of a business office of 12-15 employees.

   Any entry not saved in the suggested software format will not be evaluated.
   Suggested Software: *AutoCAD* or any program that will save in *.bmp, *.jpg, *.gif, *.pdf, or *.wmf format

7. Create a **working database** for a business such that five employees can enter sales from four products sold (video games, CDs, books, and DVDs). Employees should also be able to track sales by product type or by employee. Enter sufficient data so that the database can be queried.

   Suggested Software: *Microsoft Access*

8. Create a **project proposal** that details what is necessary to establish a networked environment for every room in a house. Consider at least one file server and two printers in your proposal.

   Any entry not saved in the suggested software format will not be evaluated.
   Suggested Software: *Microsoft Word*
   If including floor plans, *AutoCAD* or any program that will save in *.bmp, *.jpg, *.gif, *.pdf, or *.wmf format.

9. Create a **logo**. The Technology Academy Student Ambassadors who represent the Academy Student Leadership Team at Landstown High School need a logo to be used on letterhead, T-shirts, and business cards.

   Suggested Software: *Microsoft Word, Microsoft Publisher or Adobe Fireworks*. If you are using another program the file should be a *.jpg, *.gif or *.png.

10. Create a **brochure** to introduce yourself. Include your interests, hobbies, career goals, awards and community involvement.

    Suggested Software: *Microsoft Publisher or Microsoft Word*

11. Create a collection of **Web pages** for a business that you would like to open. The business may be an existing or imagined business. The pages should be able to be viewed in Internet Explorer or Mozilla Foxfire browsers, and independent of the WWW. There should be a minimum of five separate linked pages. Copies of a business's existing web pages will not be accepted.

    Suggested Software: *Dream Weaver, Microsoft Publisher, Microsoft Word,* or any other program that will save in *.html format.

12. Using an *AutoCAD* program, design and describe in detail a **complex machine** (real or fictional). This must include three (3) main dimensioned orthographic views (front, top, and right side view) and the description of the complexity of the machine or part/subsystem of the machine.

    Suggested Software: AutoCAD
    The file must be saved as a CAD file in a *.dwg, *.dwt, *.stl, or other picture format screenshot such as *.bmp, *.jpg, *.gif, or *.tif.

Student's Name: _____

Career Interests: _____

In the space provided, please describe your goals for attending an Academy or Advanced Academic Program (for all applicants).

In the space provided, list the **Extracurricular Activities** in which you participate (school and/or community) (for all applicants).

In the space provided, list the **Awards/Honors** you have received in school (for all applicants).

An appeals process is in place for each program. Please contact the program coordinator for details.

VIRGINIA BEACH CITY PUBLIC SCHOOLS
AHEAD OF THE CURVE

ADMISSIONS AGREEMENT

The Virginia Beach City Public Schools Academy Programs and Advanced Academic Programs offer a broad variety of specialized curricula for highly interested and motivated students. For students to be successful in these programs, the student must be a consistent, dedicated learner. Therefore, Virginia Beach City Public Schools require that students and parents make the following commitment.

I agree to the following terms and conditions for participating in a Virginia Beach City Public Schools Academy Program or Advanced Academic Program. I will

1. follow the rules of the Academy or Advanced Academic Program as well as those rules outlined in the *Student Handbook* and *Code of Student Conduct*.
2. actively participate in each class by being prepared, listening attentively, offering relevant comments, posing insightful questions, taking notes, and doing any other activities necessary to meet the expectations set forth for each class.
3. submit quality work in a timely fashion seeking additional assistance from my instructors as needed.
4. manifest the highest degree of academic integrity. Incidents of cheating may be grounds for immediate removal from the program.
5. maintain an excellent attendance record, scheduling appointments or vacations at times that do not conflict with classes.
6. fulfill all academy or advanced academic program requirements.

I understand that if I do not meet the standards or follow the rules of an academy program or advanced academic program, I may be asked to withdraw from the program to enroll in a course of study which better meets my needs. If I am asked to withdraw from an academy or advanced academic program, by the program coordinator, I understand that I may appeal that decision to the building principal whose ruling is the final authority. **I also understand that if I leave the academy program or advanced academic program, I must return to my zoned school and, according to Virginia High School League rules, I would not be eligible to participate in VHSL activities for 365 days unless I was granted a waiver under VHSL rule 28-6-2(14).**

_____ _____

Student's Signature Date

I hereby grant permission and consent for my son/daughter to enroll in a Virginia Beach City Public Schools academy program or advanced academic program and agree to all terms listed above. Finally, I will support my child's academic growth and encourage development of independent study skills. I understand that my son/daughter may be withdrawn from an academy or advanced academic program by the program coordinator and/or the principal if he/she does not fulfill the terms of this agreement.

_____ _____

Parent's/Guardian's Signature Date

VIRGINIA BEACH CITY PUBLIC SCHOOLS

A H E A D O F T H E C U R V E

PARENT RECOMMENDATION FORM

Student's Name: _____

Counselor: _____ School: _____

Directions to Student: Complete the information above and have a parent or guardian complete this form. Please check all of the programs to which you are applying. You may check more than one.

☐ Global Studies and World Languages Academy at Tallwood HS

☐ Health Sciences Academy at Bayside HS

☐ International Baccalaureate Program at Princess Anne HS

☐ Legal Studies Academy at First Colonial HS

☐ Mathematics and Science Academy at Ocean Lakes HS

☐ Technology Academy at Landstown HS

☐ Visual and Performing Arts Academy at Salem HS

Directions to Parent: Your child is applying for admission to a Virginia Beach City Public Schools academy program or advanced academic program. Please mark the box below that best represents your assessment of your child.

	Almost Always	Often	Occasionally	Rarely	Never
Ease of Learning – Enjoys the challenge of problems, assignments, and issues. Learns quickly.	☐	☐	☐	☐	☐
Adaptability – Approaches ideas and problems from a number of directions. Finds alternative means of solving problems. Thinks about ideas in new ways.	☐	☐	☐	☐	☐
Initiative and Enthusiasm – Is a highly motivated, independent worker. Seeks additional tasks; is intellectually curious; and stays actively engaged in activities.	☐	☐	☐	☐	☐
Persistence – Stays with tasks; relates progress on tasks to accomplishment of larger goals.	☐	☐	☐	☐	☐
Reliability and Integrity – Is scrupulous and punctual in fulfilling obligations; readily takes responsibility.	☐	☐	☐	☐	☐
Reasoning – Uses logical, analytical reasoning and/or creative, divergent thinking to consider ideas or solve problems. (Originality and elaboration of thinking.)	☐	☐	☐	☐	☐
Communications – Communicates effectively.	☐	☐	☐	☐	☐
Organization – Manages time, resources and materials; meets deadlines; divides tasks into subtasks.	☐	☐	☐	☐	☐
Leadership Qualities – Shows respect and tolerance of others' views. Is willing to accept the ideas of others and contributes to the group process. Influences others in a positive manner.	☐	☐	☐	☐	☐
Success - Displays the ability to succeed in a challenging program.	☐	☐	☐	☐	☐

Student's Name:_____

Counselor: _____ School: _____

Please provide any comments that might assist us in determining your child's potential to succeed in a rigorous academic program.

_____ _____ _____

Parent's Name (Printed) Parent's Signature Date

Thank you for completing this form. Your input is valued.
Please return this form to the guidance counselor indicated on the previous page.
Due Wednesday, February 1, 2012

VIRGINIA BEACH CITY PUBLIC SCHOOLS
AHEAD OF THE CURVE

TEACHER RECOMMENDATION FORM

Student's Name: _____

Teacher: _____ Subject: _____

Counselor: _____ School: _____

Directions to Student: Complete the information above and give a separate form to the following **four** teachers for recommendations: your **current** English teacher, math teacher, science teacher, and social studies teacher.

Please check below all of the programs to which you are applying. **You may check more than one.**

☐ Global Studies and World Languages Academy At Tallwood HS
☐ Health Sciences Academy at Bayside HS
☐ International Baccalaureate Program at Princess Anne HS
☐ Legal Studies Academy at First Colonial HS
☐ Mathematics and Science Academy at Ocean Lakes HS
☐ Technology Academy at Landstown HS
☐ Visual and Performing Arts Academy at Salem HS

Directions to Teacher: The student listed above is applying for admission to a Virginia Beach City Public Schools academy program or advanced academic program. Please mark the box below that best represents your assessment of this student.

	Almost Always	Often	Occasionally	Rarely	Never
Ease of Learning – Enjoys the challenge of problems, assignments, and issues. Learns quickly.	☐	☐	☐	☐	☐
Adaptability – Approaches ideas and problems from a number of directions. Finds alternative means of solving problems. Thinks about ideas in new ways.	☐	☐	☐	☐	☐
Initiative and Enthusiasm – Is a highly motivated, independent worker. Seeks additional tasks; is intellectually curious; and stays actively engaged in activities.	☐	☐	☐	☐	☐
Persistence – Stays with tasks; relates progress on tasks to accomplishment of larger goals.	☐	☐	☐	☐	☐
Reliability and Integrity – Is scrupulous and punctual in fulfilling obligations; readily takes responsibility.	☐	☐	☐	☐	☐
Reasoning – Uses logical, analytical reasoning and/or creative, divergent thinking to consider ideas or solve problems. (Originality and elaboration of thinking.)	☐	☐	☐	☐	☐
Communications – Communicates effectively.	☐	☐	☐	☐	☐
Organization – Manages time, resources and materials; meets deadlines; divides tasks into subtasks.	☐	☐	☐	☐	☐
Leadership Qualities – Shows respect and tolerance of other's views. Is willing to accept the ideas of others and contributes to the group process. Influences others in a positive manner.	☐	☐	☐	☐	☐
Success - Displays the ability to succeed in a challenging program.	☐	☐	☐	☐	☐

OVER

Student's Name:_____

Counselor: _____ School: _____

Please provide any comments that might assist us in determining this student's potential to succeed in a rigorous academic program. We are interested in strong academic students who are highly motivated and exhibit mature decision-making skills.

_____ _____

Teacher's Name (Printed) Teacher's Signature

_____ _____

Date Subject

Thank you for completing this form. Your input is valued.
Please return this form to the guidance counselor indicated on the previous page.

Due Wednesday, February 1, 2012

VIRGINIA BEACH CITY PUBLIC SCHOOLS

A H E A D O F T H E C U R V E

COUNSELOR'S FORM

Directions to the Student: Please fill in the information requested below and give this form to your guidance counselor by **Wednesday, February 1, 2012,** to complete and forward to the following program(s). In the first row of boxes, check all programs to which you wish to apply. In the second row of boxes, rank your preferences of the programs checked beginning with 1 for the program you are most interested in attending.

Directions to the Guidance Counselor: Complete this application per the checklist below, make copies if necessary, and forward the entire packet to the coordinators of the programs indicated by the applicant. ***Incomplete applications cannot be processed and therefore should not be submitted to the coordinator(s).*** **Parents and students should be notified by the guidance counselor that their application will not be processed.**

Academy Programs					Advanced Academic Programs	
Global Studies and World Languages Academy	Health Sciences Academy	Legal Studies Academy	Technology Academy	Visual and Performing Arts Academy	International Baccalaureate Program	Mathematics and Science Academy
☐	☐	☐	☐	☐	☐	☐

Indicate preferences with 1 being the program you are most interested in attending below.

☐	☐	☐	☐	☐	☐	☐

Student's Name: ______________________ Grade Level: ______________

Current School: ____

➢➢➢

INFORMATION BELOW TO BE COMPLETED BY THE GUIDANCE COUNSELOR

Please write on the back of this form any comments you may wish to share about this student.

Application Checklist (Please ensure all applications are submitted to the coordinator in this order.)

☐ 1. Student Data Sheet (Pages 1 & 2)
☐ 2. Admissions Agreement (Page 3)
☐ 3. Parent's Recommendation Form (Pages 4 & 5)
☐ 4. Teacher's Recommendation Form #1 (Pages 6 & 7)
☐ 5. Teacher's Recommendation Form #2 (Pages 8 & 9)
☐ 6. Teacher's Recommendation Form #3 (Pages 10 & 11)
☐ 7. Teacher's Recommendation Form #4 (Pages 12 & 13)
☐ 8. Visual or Performing Arts Teacher Recommendation and Audition Selection (Pages 14 – 16)
☐ 9. Copy of Standardized Test Scores
☐ 10. Middle School Report Card and/or transcript, including grades through current 1st semester
☐ 11. Visual and Performing Arts Academy Audition Selection Form (Page 16)
☐ 12. Counselor's Form (Page 17)
☐ 13. Essay as appropriate

Counselor's signature ______________________ Date ______________

Thank you for assisting in the completion of this student's application packet.

Appendix E:

Dual Enrollment

Articulation

Agreement

Dual Enrollment Contract

Oil-Received OCT 26 2010 Director's Office

BETWEEN TIDEWATER COMMUNITY COLLEGE AND VIRGINIA BEACH CITY PUBLIC SCHOOLS

The purpose of this agreement is to set out the terms and conditions upon which courses will be offered under the "Virginia Plan for Dual Enrollment Between Virginia Public Schools and Community Colleges" established by the Secretary of Education, the VCCS Chancellor, and the Superintendent of Public Instruction in January 2005. The purpose of this offering is to allow high school students to take college-level courses and receive both college credit and high school credit towards graduation.

Each party does hereby agree to the following:

1. Under this agreement, Tidewater Community College, (herein after "the College"), will make available college-level courses to students of Virginia Beach Public Schools System for the September 2010 – June 2012 academic years.

   The courses to be offered will be established by mutual agreement of both parties for the fall and spring semesters. A list of courses can be found as Attachment 1, and are hereby incorporated into this agreement.

   The responsibilities of the parties pursuant to this agreement are conditional upon student registration for the course(s) being completed and subject to adequate student enrollment as determined by the College. The College and Virginia Beach Public Schools System reserve the right to cancel any class sections or add sections, no later than the census date for the class as determined by the College.

2. Tuition and Fees

   Pursuant to the Virginia Plan for Dual Enrollment, schools and colleges are encouraged to provide high school students the opportunity for dual enrollment at no cost to them or their families. The School will pay on behalf of the student or students, or the student will pay the College, the mandatory tuition and any fees established by the State Board for Community Colleges at the rate then in effect at the time the classes begin. Where the School agrees to pay the tuition and fees, the College will bill the School on a semester basis. If the parties agree the students are responsible for such payments, the College will bill the students directly for them.

3. Textbooks

   The College reserves the right to determine the textbooks used in dual enrollment courses. The provision of all dual enrollment course textbooks is the responsibility of the Virginia Beach City Public Schools. Required textbooks will be available for purchase from the college's bookstore and the high school will provide textbooks to students.

C & I Assistant

AUG 25 2010 AUG 13 2010

4. Payment for Other Services

Fees and reimbursement for other costs and services will be determined by mutual consent of the Virginia Beach Public Schools System and the College per Attachment 2, which is incorporated herein and made a part of this Agreement.

5. Faculty

a. Selection

(1) Authority to Select/Hire

The selection and supervision of instructional faculty for all community college courses covered by this agreement will be the responsibility of the College. Virginia Beach Public Schools System may recommend qualified teachers who are interested in teaching in the dual enrollment program to the College for consideration. Each faculty member teaching in the dual enrollment program shall be a member of the college's full-time or part-time faculty or an employee of the Virginia Beach Public Schools System.

(2) Dual enrollment course faculty must meet the minimum credential requirements set forth by Form VCCS-29 (Attachment 3) and the Commission on Colleges of the Southern Association of Colleges and Schools.

b. Payment

If the instructor for dual enrollment course(s) is employed full time by the Virginia Beach Public Schools Systemand the course(s) are part of the assigned teaching work load, the College will reimburse the Virginia Beach Public Schools System for the services of its employee in lieu of direct compensation to the faculty member. If, however, the College employs an instructor that is not affiliated with the Virginia Beach Public Schools System, the College will compensate the faculty member directly. Reimbursement and/or payment of faculty salaries directly will be in accordance with the Virginia Community College System approved lecturer rates depending on qualifications of the instructor and will occur no later than the end of the semester of the course.

c. Faculty Responsibilities

Instructors will be expected to conform to college policies for the dual enrollment courses they teach, such as preparing course syllabi, verifying class rosters, reporting student progress to the College at mid-semester, taking attendance, and providing final grades at the end of the semester. Instructors will be subject to the College's faculty/course evaluation policy and procedures.

C & I Assistant
AUG 13 2010
(President)

All faculty teaching dual enrollment courses will be required to attend faculty orientation and other in-service programs as agreed upon by both parties.

6. Students

   a. Selection and Eligibility to Participate in Dual Enrollment Program

      (1) In order to be eligible to participate in the Dual Enrollment Program, high school students must have permission of their parent or guardian to participate, be recommended by their high school principal to cross register, and meet course prerequisites.

      (2) Students must meet admission and course placement requirements of the College. Requirements for admission include the completion of an application for admission to the college and satisfactory completion of the College's placement tests as required.

      (3) Exceptions to the policies established in 6.a.(1) and 6.a.(2) regarding student eligibility may be made on a case-by-case basis with the approval of the public school superintendent and appropriate community college officials, so long as such exceptions are in accordance with the VCCS Policy Manual.

7. College Administrative Responsibilities

   a. The College, through its instructor(s), will provide the appropriate Virginia Beach Public Schools System officials with progress reports on each student in a manner agreed to by the contracting School System and the College. At the conclusion of each college academic term, the student will receive a college grade for each course in which he/she was registered and such grades will become part of the student's permanent college record.

   b. A record will be maintained by the College for each student in the Dual Enrollment Program as a part of the permanent college record maintained by the College's Admissions and Records office. The College will send transcripts to colleges/universities upon a student's request.

   c. The College will provide a minimum of 800 minutes of instruction (to include testing and evaluation) for each lecture credit and a minimum of 1600 minutes of instruction for each lab credit hour per semester to Virginia Beach Public Schools System students enrolled in college courses under this agreement.

C & I Assistant
AUG 13 2010

8. High School Administrative Responsibilities

   Virginia Beach Public Schools System will verify enrollments in each class section, and instructors will report grades to the College within a prescribed period of time, according to mutually agreed-upon procedures.

9. Award of Credit

College and high school credit shall be awarded to the participating high school student upon successful completion of the course.

10. Course Standards

a. Course Equivalency, Evaluation, and Assessment

Assessment has long been recognized in Virginia as an important aspect of an effective instructional program. In this spirit, all dual enrollment courses developed and implemented under the auspices of the Virginia Plan for Dual Enrollment and this contract shall include a formal mechanism for evaluation. The College has the responsibility to ensure that all dual enrollment courses taught are equivalent to other instruction offered by the College, specifically in terms of course objectives, components of the syllabi, level and rigor of content, evaluation of students, textbooks, student outcomes and assessment and faculty evaluation.

b. Modifications of Policies

Modifications of on-campus policies, procedures, and rules appropriate to the high school setting may be agreed to by the parties in writing before each term begins.

c. Student Performance

The College reserves the right to advise the student, parents, and Virginia Beach Public Schools System that the student does not have sufficient skills or abilities to continue in the courses selected after the first semester.

11. Agreement Contacts

Contact persons for this agreement are:

- the School System: Rodney J. Burnsworth
- the School: Fran Sharer
- the College: Dr. Michael Summers

C & I Assistant
AUG 2010
Superintendent

12. Transferability

Normally, academic courses intended for transfer with a grade of "C" or above will transfer to institutions of higher education. However, no guarantee can be made to students regarding transferability to all colleges and universities. Community college career/technical course credits earned are applicable to specific curricula and are intended to prepare students for

employment in those areas. While some of these courses may be accepted for transfer, no uniform policy on the transfer of applied/technical courses exists. The School should advise students to consult with transfer institutions in order to determine if their courses will be accepted for transfer.

13. The College reserves the right to enroll other students in the courses subject to this contract when those courses are offered on the College's campus or sites not at the high school.

14. Each party will be responsible for liability coverage of its employees and agents in fulfilling its responsibilities under this agreement, to the extent authorized by law.

15. If either party wishes to terminate this agreement, a written notice must be provided to the other party within [30]* days of the requested termination date. Termination will not take place until dual enrollment courses in progress are completed.
*The number of days should be negotiated between the School/System and the Community College.

16. The College or the Virginia Beach Public Schools System shall not unlawfully discriminate on the basis of race, nationality, ethnicity, religion, gender, age, or disability in any undertaking pursuant to this contract. Disabled students will continue to receive accommodations through the School pursuant to the Individuals with Disabilities Education Improvement Act of 2004, 20 U.S.C § 1400.

17. Nothing herein shall be construed as a waiver of the sovereign immunity of the Commonwealth of Virginia or the assumption of any liability contrary to Virginia law.

Signatures:

Phyllis F Milling for Deborah M DiCroce

Deborah M. DiCroce, President
Tidewater Community College

10/19/10
Date

James G. Merrill, Superintendent
Virginia Beach Public Schools

8/24/10
Date

C & I Assistant
AUG

VIRGINIA BEACH CITY PUBLIC SCHOOLS

AHEAD OF THE CURVE

Department of Curriculum and Instruction
Office of Secondary Instructional Services

AGREEMENT CONTRACT BETWEEN
THE SCHOOL BOARD OF THE CITY OF VIRGINIA BEACH
AND TIDEWATER COMMUNITY COLLEGE
SEPTEMBER 2010- JUNE 2012

Approved as to Content:

Rodney J. Bunsworth, Director
Office of Secondary Instructional Services
Department of Curriculum and Instruction

August 19, 2010
Date

****

Approved as to Availability of Funds and Business Content:

Sammy Cohen, Director
Office of Business Services

8/19/10
Date

8/08

C & I Assistant
AUG 25 2010
Superintendent

SCHOOL BOARD ATTACHMENT A

This contract is between the School Board of the City of Virginia Beach and Tidewater Community College. Any reference in any part this Agreement to a specific department or organization or to the Virginia Beach City Public Schools or VBCPS, shall be interpreted when reasonable to mean the School Board of the City of Virginia Beach.

Contractor as used herein refers to Tidewater Community College.

APPLICABLE LAW/COMPLIANCE WITH ALL LAWS/VENUE

Applicable Law:

This Contract shall be deemed to be a Virginia contract and shall be governed as to all matters whether of validity, interpretations, obligations, performance or otherwise exclusively by the laws of the Commonwealth of Virginia, and all questions arising with respect thereto shall be determined in accordance with such laws. Regardless of where actually delivered and accepted, this Contract shall be deemed to have been delivered and accepted by the parties in the Commonwealth of Virginia.

Compliance with All Laws:

Contractor agrees to comply with all applicable federal, state, and local laws, ordinance, and regulations.

Venue:

Any and all suits for any claims or for any and every breach or dispute arising out of this Contract shall be maintained in the appropriate court of competent jurisdiction in the City of Virginia Beach. No claim shall ever be arbitrated.

CONFIDENTIALITY

Contractor hereby acknowledges that the information that it may receive access may be confidential student records protected from disclosure to unauthorized parties by the Family Educational Rights and Privacy Act, 20 U.S.C. 1232 g, 34 C.F.R. Part 99. As an agent of the School Board, the Contractor hereby agrees that it will protect the confidentiality of these records and not disclose the information to any other party without the prior consent of the parent or eligible student.

Failure to comply with this provision will result in the contractor losing the right to access personally identifiable information from the School Board's education records for a period of five years. Contractor may not release information concerning the student (including names, addresses, telephone numbers, email address, or other identifying

C & I Assistant
AUG 13 2010
Superintendent

information) without the express written consent of the parent or eligible student. Contractor may not use any such information for any purpose other than the provision of services under this contract.

NON-ASSIGNMENT

Contractor shall not assign any portion of the Contract without express written permission of the School Board of the City of Virginia Beach.

MODIFICATION

There may be no modification of this Contract, except in writing, executed by the authorized representatives of the School Board and Contractor.

FAITH-BASED DISCLAIMER

The School Board of the City of Virginia Beach does not discriminate against faith-based organizations.

NON-APPROPRIATION

It is understood and agreed between the parties hereto that the School Board of the City of Virginia Beach shall be bound an obligated hereunder only to the extent that the funds shall have been appropriated and budgeted for the purpose of the Contract. In the event funds are not appropriated and budgeted in any fiscal year for payments due under this Contract, the School Board of the City of Virginia Beach shall immediately notify Contractor of such occurrence and this Contract shall terminate on the last day of the fiscal year for which (an) appropriation(s) (was) were received without penalty or expense to the School Board of the City of Virginia Beach of any kind whatsoever.

DISPOSITION OF CONTRACT CLAIMS

Contractual claims, whether for money or other relief, shall be submitted in writing no later than 60 days after receipt of final payment; however, written notice of the contractor's intention to file a claim shall be given at the time of the occurrence or at the beginning of the work upon which the claim is based.

No written decision denying a claim or addressing issues related to the claim shall be considered a denial of the claim unless the written decision is signed by the public body's chief administrative officer or his designee. The contractor may not institute legal action prior to receipt of the final written decision on the claim unless the public body fails to render a decision within 90 days of submission of the claim. Failure of the public body to render a decision within 90 days shall not result in the contractor being awarded the relief claimed or in any other relief or penalty. The sole remedy for the public body's failure to render a decision within 90 days shall be the contractor's right to institute immediate legal action.

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Superintendent

Attachment 1

Tidewater Community College
Virginia Beach City Public Schools

DUAL ENROLLMENT COURSES
2011 - 2013

ENGLISH

ENG 111	COLLEGE COMPOSITION I
ENG 112	COLLEGE COMPOSITION II
ENG 125	INTRODUCTION TO LITERATURE
ENG 210	ADVANCED COMPOSITION
ENG 131	TECHNICAL REPORT WRITING I

MATHEMATICS

MTH 158	COLLEGE ALGEBRA
MTH 163	PRE-CALCULUS I
MTH 164	PRE-CALCULUS II
MTH 173	CALCULUS WITH ANALYTICAL GEOMETRY I
MTH 174	CALCULUS WITH ANALYTICAL GEOMETRY II
MTH 240	STATISTICS

SOCIAL SCIENCES

HIS 121	US HISTORY I
HIS 122	US HISTORY II
HIS 141	AFRICAN AMERICAN HISTORY I
PHI 260	STUDIES IN EASTERN THINKING
PSY 201	INTRODUCTION TO PSYCHOLOGY I
PSY 202	INTRODUCTION TO PSYCHOLOGY II
SOC 201	INTRODUCTION TO SOCIOLOGY I
SOC 202	INTRODUCTION TO SOCIOLOGY II
ADJ 105	JUVENILE JUSTICE SYSTEM
ADJ 201	CRIMINOLOGY
ADJ 211	CRIMINOLOGY LAW, EVIDENCE AND PROCEDURES I
ADJ 212	CRIMINOLOGY LAW, EVIDENCE AND PROCEDURES II

FINE ARTS

ART 121	DRAWING I
ART 122	DRAWING II

Revision: June 29, 2010

C & I Assistant
AUG 2010
Superintendent

Attachment 2

Tidewater Community College

Virginia Beach Campus Dual Enrollment:
Other Costs and Services

Each student must pay the costs for placement testing ($4.00). There are no other fees.

C & I Assistant
AUG 13 2010

Attachment 3

Virginia Community College System
Qualifications of Faculty
Effective July 1, 2005

Qualifications for faculty in the Virginia Community College System are aligned with the Principles of Accreditation of the Commission on Colleges of the Southern Association of Colleges and Schools (SACS). SACS states:

The institution employs competent faculty members qualified to accomplish the mission and goals of the institution. When determining acceptable qualifications of its faculty, an institution gives primary consideration to the highest earned degree in the discipline in accordance with the guidelines listed below. The institution also considers competence, effectiveness, and capacity, including, as appropriate, undergraduate and graduate degrees, related work experiences in the field, professional licensure and certifications, honors and awards, continuous documented excellence in teaching, or other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. For all cases, the institution is responsible for justifying and documenting the qualifications of its faculty.

Credential Guidelines:

1. Faculty teaching associate degree courses designed for transfer to a baccalaureate degree: doctor's or master's degree in the teaching discipline or master's degree with a concentration in the teaching discipline (a minimum of 18 graduate semester hours in the teaching discipline)
2. Faculty teaching associate degree courses not designed for transfer to the baccalaureate degree: bachelor's degree in the teaching discipline, or associate's degree and demonstrated competencies in the teaching discipline.

In addition to the above two categories of faculty specified by SACS, the VCCS adds the following:

3. Faculty teaching courses designed for non-associate degree occupational fields: high school diploma or equivalent with demonstrated competencies in the teaching field.
4. Faculty teaching developmental courses: bachelor's degree in a discipline related to the teaching assignment and either teaching/occupational experience related to the teaching assignment or graduate training in developmental education.

The accompanying chart (VCCS-29) specifies the normal minimum criteria for each faculty rank. This chart applies to teaching faculty and administrators. For administrators and professional faculty (counselors, and librarians), "teaching effectiveness" refers to effective performance in the primary area of responsibility and "teaching experience" includes professional service in the primary area of responsibility. The chart should be used and interpreted in conjunction with the above general principles, Section 3.2 (Faculty Qualifications) of the VCCS Policy Manual, and the following interpretive specifications

Interpretive Specifications

- Fulfillment of normal minimum criteria does not guarantee original placement in, or promotion to, a given rank.
- Minimum degree requirements for original appointments and promotions must be met.
- The following are appropriate substitutions for requirements beyond the minimum degree specified for a given rank, which may be used at the discretion of the college.
  - a) Teaching experience beyond the minimum required may be used in lieu of occupational experience at the rate of one year of teaching experience being considered equivalent to a required year of occupational experience.
  - b) Occupational experience beyond the minimum required may be used in lieu of teaching experience at the rate of one year of related occupational experience being considered equivalent to a required year of teaching experience.
  - c) Educational preparation above the requirements for initial placement in rank may fulfill requirements for occupational experience and/or teaching experience at the rate of 30 undergraduate credits being considered equivalent to one year of teaching or occupational experience, and 24 graduate credits being considered equivalent to one year of teaching or occupational experience.

C & I Assistant
AUG 1 1 2010
Appointment

d) Certification in lieu of a degree will be possible for initial hiring in Columns 3 and 5. Business, industry and professional certifications may substitute for educational requirements. Equivalencies must be documented, approved by the president, and placed in the personnel file as an attachment to hiring and promotion documents. Sample equivalencies are available on the System website.

e) Eighteen graduate semester hours of course work related to the teaching field may substitute for the requirement that a bachelor's degree be related to the teaching field.

f) Measurement of teaching effectiveness for initial appointments is determined through references; for promotions, it is determined using the evaluation ratings for the two previous years.

g) The MFA Degree for those faculty who teach a majority of classes in studio art, theater, or creative writing areas shall be recognized as a terminal degree. The requirement of the doctoral degree under columns one and two for such faculty will not be necessary; however, these faculty will still need to satisfy the requirements of credits in the teaching field and another requirements for promotion to upper ranks of the professoriate.

h) In cases where program accreditation agencies recommend specific graduate courses for faculty, those courses should be considered to be "in the teaching field" for VCCS- 29 purposes regardless of the course prefix or other criteria normally used to determine the status of course work.

Interpretive Specifications for Promotions Only

- Credit hour equivalency may be granted for no more than a total of 15 semester hours by either a. or b. below or a combination of both during employment with the VCCS.

  a) Active participation in given learning experiences (c. e. u. classes, workshops, conferences, seminars, etc.) when part of a plan approved by the Community College President applying the following formula: 45 contact hours is equivalent to one semester credit hour.

  b) Non- teaching work experience directly related to the faculty member's field at a rate not to exceed 1.25 semester credit hours per month of full- time equivalent work experience and not to include work experience applied toward initial appointment.

- Any exceptions to the criteria as outlined in the VCCS-29 must be fully justified and documented in accordance with the Community College's Human Resource Delegation Agreement.

C & I Assistant
AUG 1 2010
President

VCCS-29 Normal Minimum Criteria for Each Faculty Rank Effective July 1, 2005

	Faculty in Humanities, Soc. Sciences, Natural Sciences and Math, Developmental Studies, Counseling, Libraries		Faculty in Specialized Professional or Technical Associate in Applied Sciences or Art Degree Fields		Faculty in Non-Academic Degree Occupational Fields	
	Initial Appointment/ Promotions	Promotions	Initial Appointment/ Promotions	Promotions	Initial Appointment/ Promotions	Promotions
	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
ASSISTANT INSTRUCTOR	Appointment on a temporary or emergency basis for a period of one year to persons who meet most of the minimum requirements for the instructor rank and who show evidence of being able to complete such requirements within one year. A one-year renewal only of assistant instructor appointment may be considered upon request of the college administrator for a person who is actively pursuing completion of the necessary requirements.					
INSTRUCTOR						
Teaching Effectiveness	Good		Good		Good	
Academic Preparation	Master's in field or Master's w/18 grad. s.h. in teaching field (The minimum requirement for faculty teaching developmental courses at the instructor level is a baccalaureate degree.)		Bachelor's in teaching field or Associate's in teaching field with demonstrated competency in teaching field.		H.S. dip. or equiv. Assoc. or equiv. in teaching field preferred.	
Experience:						
Related Occup. Exp.	0 yrs.		7 yrs.		5 yrs. current expr.	
Total Teaching Exp.	0 yrs.		0 yrs.		0 yrs.	
F/T Community College Experience	0 yrs.		0 yrs.		0 yrs.	
Professional Activities and Contributions	Demonstrated Potential		Demonstrated Potential		Demonstrated Potential	
ASSISTANT PROFESSOR						
Teaching Effectiveness	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good
Academic Preparation	Master's + 24 grad. s.h. (27 grad s.h. in teaching field.)	Master's + 15 grad. s.h. (27 grad. sem. hrs in teaching field)	Bachelor's in teaching field + 24 grad. s.h.	Bachelor's in teaching field +15 grad s.h.	Assoc. or equiv. (Major in teaching field)	High school or equiv. + 30 s.h. inc. toward an Assoc Degree
Experience:						
Related Occup. Exp.	0 yrs.	1 yr.	2 yrs.	7 yrs.	5 yrs.	5 yrs.
Total Teaching Exp.	0 yrs.	3 yrs.	0 yrs.	3 yrs.	0 yrs.	3 yrs.
F/T Community College Experience	0 yrs.	3 yrs.	0 yrs.	3 yrs.	0 yrs.	3 yrs.
Professional Activities and Contributions	Good	Good	Good	Good	Good	Good
ASSOCIATE PROFESSOR						
Teaching Effectiveness	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Academic Preparation	Doctorate (36 grad s.h. in teaching field)	Master's + 15 grad. s.h. (36 grad hours in teaching field)	Master's related to teaching field + 15 grad s.h.	Master's related to teaching field	Bachelor's related to the teaching field	Assoc. related to the teaching field or equiv. + 30 s.h.
Experience:						
Related Occup. Exp.	0 yrs.	0 yrs.	2 yrs.	2 yrs.	5 yrs.	5 yrs.
Total Teaching Exp.	6 yrs.	5 yrs.	6 yrs.	6 yrs.	6 yrs.	6 yrs.
F/T Community College Experience	0 yrs.	3 yrs.	0 yrs.	3 yrs.	0 yrs.	3 yrs.
Professional Activities and Contributions	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good
Min. VCCS Exp. in Previous Rank	0 yrs.	3 yrs.	0 yrs.	3 yrs.	3 yrs.	3 yrs.
PROFESSOR						
Teaching Effectiveness	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Academic Preparation	Doctorate (36 grad s.h. in teaching field)	Doctorate (36 hours in teaching field)	Master's related to teaching field + 36 grad. s.h.	Master's related to teaching field + 36 grad s.h.	Master's related to the teaching field	Master's related to the teaching field
Experience:						
Related Occup. Exp.	0 yrs.	0 yrs.	2 yrs.	2 yrs.	5 yrs.	5 yrs.
Total Teaching Exp.	8 yrs. Post secondary	5 yrs.	8 yrs. Post secondary	8 yrs.	8 yrs. Post secondary	8 yrs.
F/T Community College Experience	0 yrs.	3 yrs.	0 yrs.	3 yrs.	0 yrs.	3 yrs.
Professional Activities and Contributions	Exceptional	Excellent	Exceptional	Excellent	Exceptional	Excellent
Min VCCS Exp. in Previous Rank	0 yrs.	3 yrs.	0 yrs.	3 yrs.	3 yrs.	3 yrs.

Virginia Community College System
NORMAL MINIMUM CRITERIA FOR EACH FACULTY RANK

3-5A
7/05 *(Effective Date)*

C & I Assistant
AUG 13 2010
Assistant

Appendix F:

Memoranda

of

Agreement

MEMORANDUM OF AGREEMENT

BETWEEN PARTNERS

AND THE LANDSTOWN HIGH SCHOOL TECHNOLOGY ACADEMY

PARTNERS AND THE LANDSTOWN HIGH SCHOOL TECHNOLOGY ACADEMY agrees to enter into this Agreement to support the Technology Academy STEM program. The Technology Academy will provide enhance opportunities in the areas of Information Technology, Entrepreneurship Technology, and STEM Pre-Engineering Technology preparing participants for the 21st century work place, advanced technical training or entrance into college or university studies. A focus of the program will be to increase opportunities for internships in STEM related fields and other fields of innovation based upon workforce needs of the region.

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By signing this agreement both institutions agree to be active partners and agree to abide by this agreement.

Landstown High School and Technology Academy **PARTNER**

Robin Lisette Diehl 2/7/12

Technology Academy Coordinator Date

Virginia Commonwealth University 2/7/2012

Organization Date

Michael R

Signature

President VCU

Title

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Landstown High School and Technology Academy **PARTNER**

Robin Lisette Diehl 2/16/12

Technology Academy Coordinator Date

Norfolk State University 2-16-12

Organization Date

Regina V.K. Williams Regina V.K. Williams

Signature

Interim Vice President, Finance and Administration

Title

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Landstown High School and Technology Academy **PARTNER**

Robin Lisette Diehl 1/18/12

Technology Academy Coordinator Date

Tidewater Community College 1/18/12

Organization Date

Susan N. Dozier Susan N. Dozier

Signature

Professor

Title

MEMORANDUM OF AGREEMENT

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Landstown High School and Technology Academy PARTNER

Robin Lisette Diehl 1/17/12

Technology Academy Coordinator Date

Old Dominion University Marketing Education 1/17/12

Organization Date

Signature

Program Leader, Asst. Professor

Title

MEMORANDUM OF AGREEMENT

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ATTN: Mrs. Lisette Diehl
Signed Memorandum of Agreement Between Partners & Landstown Tech. Academy

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Landstown High School and Technology Academy **PARTNER**

Lisette Diehl 1/25/12

Technology Academy Coordinator Date

ECPI University 1/25/12

Organization Date

Frank Gomez (Frank Gomez)

Signature

Freshman Admissions Presenter

Title

MEMORANDUM OF AGREEMENT

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Landstown High School and Technology Academy **PARTNER**

Ann Lisette Diehl 1/18/12

Technology Academy Coordinator Date

Bryant & Stratton College Jan 18, 2012

Organization Date

Francis Bruce

Signature

Market High School Coordinator

Title

MEMORANDUM OF AGREEMENT

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Landstown High School and Technology Academy **PARTNER**

Robin Lisette Diehl 2/27/12

Technology Academy Coordinator Date

I.T.T Technical Institute 2/27/12

Organization Date

Signature

Director

Title

MEMORANDUM OF AGREEMENT

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Landstown High School and Technology Academy **PARTNER**

Robin Josette Diehl 1/12/12

Technology Academy Coordinator Date

Johnson & Wales University 1/31/12

Organization Date

Maria A. Marsh

Signature

Admissions Representative

Title

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Landstown High School and Technology Academy **PARTNER**

Robin Pirette Diehl 1/18/12

Technology Academy Coordinator Date

Armed Forces Communications & Electronics Association (AFCEA) Hampton Roads Chapter 1/18/2012

Organization Date

Mary K Yogn

Signature

AFCEA Hampton Roads Chapter Educational Foundation Chair

Title

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Landstown High School and Technology Academy **PARTNER**

Robin Lisette Diehl 1/12/12

Technology Academy Coordinator Date

1080 Education Inc. (Ten80) January 12, 2012

Organization Date

Leon Stein

Signature

President, Ten80 Education (NASCAR)

Title

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Landstown High School and Technology Academy **PARTNER**

Robin Sigette Diehl 1/11/12

Technology Academy Coordinator Date

Newfangled Solutions LLC 1/11/2012

Organization Date

Scott Nivens

Signature

Owner (Artsoft Mach 3 software)

Title

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- Provide guidance and expertise to staff and/or students to promote STEM related teaching and learning

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Landstown High School and Technology Academy **PARTNER**

Robin Lisette Diehl 1/11/12

Technology Academy Coordinator Date

WhiteBox Learning 1/11/12

Organization Date

W. G. Baughman (Wm. Graham Baughman)

Signature

CEO

Title

MEMORANDUM OF AGREEMENT

BETWEEN PARTNERS

AND THE LANDSTOWN HIGH SCHOOL TECHNOLOGY ACADEMY

PARTNERS AND THE LANDSTOWN HIGH SCHOOL TECHNOLOGY ACADEMY agrees to enter into this Agreement to support the Technology Academy STEM program. The Technology Academy will provide enhance opportunities in the areas of Information Technology, Entrepreneurship Technology, and STEM Pre-Engineering Technology preparing participants for the 21st century work place, advanced technical training or entrance into college or university studies. A focus of the program will be to increase opportunities for internships in STEM related fields and other fields of innovation based upon workforce needs of the region.

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Landstown High School and Technology Academy **PARTNER**

Robin Lisette Diehl 1/23/12

Technology Academy Coordinator Date

VirginiaFIRST January 23, 2012

Organization Date

Signature

Executive Director

Title

MEMORANDUM OF AGREEMENT

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Landstown High School and Technology Academy **PARTNER**

Technology Academy Coordinator — 1/31/12 Date

STIHL Inc. — 31 Jan '12

Organization — Date

Simon Nance

Signature

Manager – Training & Development

Title

MEMORANDUM OF AGREEMENT

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Landstown High School and Technology Academy **PARTNER**

Robyn Pisette Diehl 1/12/12

Technology Academy Coordinator Date

InMotion Hosting 1/27/12

Organization Date

Ashleigh Smith

Signature

HR Generalist

Title

MEMORANDUM OF AGREEMENT

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Landstown High School and Technology Academy **PARTNER**

Robin Lisette Diehl 1/18/12

Technology Academy Coordinator Date

Virginia Beach Schools Federal Credit Union 1/18/2012

Organization Date

Amy M Courtright

Signature

Vice President of Marketing

Title

MEMORANDUM OF AGREEMENT

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Landstown High School and Technology Academy **PARTNER**

Robin Lisette Diehl 1/23/12

Technology Academy Coordinator Date

City of Vb. Beach, Dept. of Parks & Recreation 1-23-12

Organization Date

Janis Sweeney

Signature

Parks & Recreation Supervisor

Title

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Landstown High School and Technology Academy PARTNER

Robin Brigitte Diehl 1/17/12

Technology Academy Coordinator Date

Junior Achievement of Greater Hampton Roads 1/17/12

Organization Date

Kevin Will - Kevin Will

Signature

President, Junior Achievement of Greater Hampton Roads, Inc.

Title

MEMORANDUM OF AGREEMENT

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Landstown High School and Technology Academy **PARTNER**

Robin Lisette Diehl 2/7/11

Technology Academy Coordinator Date

Goodwill 2/7/11

Organization Date

Danielle Grain

Signature

Community Relations Manager

Title

MEMORANDUM OF AGREEMENT

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Landstown High School and Technology Academy **PARTNER**

Bonni Lisette Diehl 2/7/12

Technology Academy Coordinator Date

Norfolk Admirals Hockey 2/7/12

Organization Date

Signature

Director of Group Sales

Title

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Landstown High School and Technology Academy PARTNER

Robin Lisette Diehl 1/17/12

Technology Academy Coordinator Date

Beach Windows & Siding 1/17/12

Organization Date

president

Signature

President

Title

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Landstown High School and Technology Academy **PARTNER**

Robin Lisette Diehl 1/30/12

Technology Academy Coordinator Date

TOTAL SPORTSWEAR SOLUTIONS, LLC 1/30/2012

Organization Date

Signature

OWNER

Title

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Landstown High School and Technology Academy **PARTNER**

Robyn Lisette Buhl 1/27/12

Technology Academy Coordinator Date

X Food Lion 1/27/12

Organization Date

* Ashley Geho

Signature

* Customer Service + Sales Manager

Title

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- Provide the required equipment, software, and technical support to facilitate instruction

Postsecondary Education Partners: Old Dominion University Marketing Education Program, Norfolk State University College of Science, Engineering and Technology, Virginia Commonwealth University School of Engineering, and Tidewater Community College and future partners agree to:

- Designate an individual who will serve as a contact person to serve as a liaison on the Advisory Committee

- Provide opportunities for Dual Enrollment courses, if articulation agreements exist, for students to earn transferable college credit

<u>Business Sponsors:</u> Current and future partners agree to:

- Designate an individual who will serve as a contact person to serve as a liaison on the Advisory Committee or in the capacity as a resource contact for the program departments
- Provide resources and opportunities for Technology Academy students to receive real world experiences through project-based learning, field trips, guest speakers, job-shadowing, internships, and mentorships.
- Provide guidance and expertise to staff and/or students to promote STEM related teaching and learning

By signing this agreement both institutions agree to be active partners and agree to abide by this agreement.

Landstown High School and Technology Academy **PARTNER**

Robin Chesette Diehl 1/12/12

Technology Academy Coordinator Date

Chick-Fil-a 1/25/12

Organization Date

Signature

General Manager

Title

MEMORANDUM OF AGREEMENT

BETWEEN PARTNERS

AND THE LANDSTOWN HIGH SCHOOL TECHNOLOGY ACADEMY

PARTNERS AND THE LANDSTOWN HIGH SCHOOL TECHNOLOGY ACADEMY agrees to enter into this Agreement to support the Technology Academy STEM program. The Technology Academy will provide enhance opportunities in the areas of Information Technology, Entrepreneurship Technology, and STEM Pre-Engineering Technology preparing participants for the 21st century work place, advanced technical training or entrance into college or university studies. A focus of the program will be to increase opportunities for internships in STEM related fields and other fields of innovation based upon workforce needs of the region.

MOA TIMEFRAME:

The MEMORADUM OF AGREEMENT period shall be January 10, 2012 through June 30, 2013 and will be extended annually unless modified or terminated by a partner.

PARTNERS' AGREEMENTS:

Landstown High School Technology Academy agrees to:

- Facilitate the Technology Academy Advisory Committee
- Provide and monitor comprehensive programs of studies in the Information Technology, Entrepreneurship Technology, and STEM Pre-Engineering Technology concentrations
- Assure that curriculum is aligned with career pathways that meet the requirements for the Governor's Exemplary Standard Award Program, Workplace Readiness Skills for the Commonwealth of Virginia, and Virginia Technical or Advanced Technical Diploma
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Landstown High School and Technology Academy **PARTNER**

Robin Lisette Diehl 1/18/12

Technology Academy Coordinator Date

Rite Aid #11264 1/18/12

Organization Date

Samuira Runyon

Signature

Store Manager

Title

MEMORANDUM OF AGREEMENT

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Landstown High School and Technology Academy **PARTNER**

Robin Lisette Diehl 1/19/12

Technology Academy Coordinator Date

CINEMA CAFE 1/19/12

Organization Date

Michael Butler

Signature

Manager

Title

MEMORANDUM OF AGREEMENT

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Landstown High School and Technology Academy **PARTNER**

Robyn Pisette Diehl 1/25/12

Technology Academy Coordinator Date

College House, Oarsmen 1/25/12

Organization Date

James M. Katz

Signature

manufacturers sales representative

Title

MEMORANDUM OF AGREEMENT

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Landstown High School and Technology Academy **PARTNER**

Robin Brigitte Diehl 1/17/12

Technology Academy Coordinator Date

Jake's Smoke house BBQ 1-17-12

Organization Date

Signature

Owner

Title

Appendix G:

Insurance

Certificate

CERTIFICATE OF COVERAGE

Rev. 07/07/05

Producer:
VML INSURANCE PROGRAMS
P.O. Box 3239, Glen Allen, VA 23058
1-800-963-6800 (Phone); 1-804-968-4662 (Fax)
www.vmlins.org

This Certificate is issued as a matter of information only and confers no rights upon the Certificate Holder. This Certificate does not amend, extend or alter the Membership Agreement afforded by the policies below, nor guarantees the solvency of VML Insurance Programs.

COMPANIES AFFORDING COVERAGE

VML Insurance Programs

Named Insured:
Virginia Beach Schools
1568 Corp Landing Parkway, Suite 200
Virginia Beach, VA 23454

COVERAGES

This is to certify that the coverage listed below has been issued to the Member named above for the policy period indicated, notwithstanding any requirement, term or condition of any contract or other document with respect to which this Certificate may be issued or may pertain, the coverage afforded by the policies described herein is subject to all the terms, exclusions and conditions of the Member Agreement and the policy forms. Limits shown may have been reduced by paid claims.

Type of Coverage	Policy Number	Effective Date	Expiration Date	Limits	
General Liability	P-2011-2012-VMLP-0662-1	07/01/2011	07/01/2012	Each Occurrence	$1,000,000
Damage to Premises Rented to You				Any One Fire	$1,000,000
Medical Payments				Any One Person	$10,000
Excess Liability	P-2011-2012-VMLP-0662-1	07/01/2011	07/01/2012	Per Occurrence	$4,000,000
Automobile Liability	P-2011-2012-VMLP-0662-1	07/01/2011	07/01/2012	Each Occurrence	$1,000,000
Any Auto				Combined Single Limit	$1,000,000

Description of Operations/Locations/Vehicles/Special Items
Evidence of Coverage for Landstown High School's application for the STEM Academy Program

CERTIFICATE HOLDER
Virginia Department of Education
Office of Career & Technical Education Services
James Monroe Bldg, Floor 21, 101 N 14th Street
Richmond, VA 23219

CANCELLATION: Should the above described Member Agreement be cancelled before the expiration date thereof, VML Insurance Programs will endeavor to mail written notice within 30 days to the Certificate Holder named to the left, but failure to mail such notice shall impose no obligation of any kind upon VML Insurance Programs, its agents or representatives.

By: *Crystal Griffin* Date: 01/23/2012

Appendix H:

Statement

of

Assurance

from

Fiscal Agent

Landstown High School Technology Academy
Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

STATEMENT OF ASSURANCES

The authorized signature on this page certifies to the Virginia Department of Education that the authorized official assures that:

1. The planning committee has reviewed the provisions of *Administrative Procedures Guide for the Establishment of Governor's STEM Academies* outlined in the Guidance Manual, and understands that an implementation proposal will need to address these criteria and/or others approved by the Virginia Board of Education.

2. The planning committee agrees to follow the guidelines set forth in the *Administrative Procedures* Guide for the Establishment of Governor's STEM Academy's document.

3. Virginia Beach City Public Schools will serve as the grant fiscal agent.

Certification by Authorized or Institutional Official:

The applicant certifies that to the best of his/her knowledge the information in this application is correct, that the filing of this application is duly authorized by the partners participating in this process to establish a Governor's STEM Academy, and that the applicant will comply with the statements of assurances.

JAMES G. MERRIN — Superintendent
Typed or Printed Name of Authorized Official — Title

Signature of Authorized Official — Date 1/24/12

1/24/12

1/24/12

Appendix I:

Budget

GOVERNOR'S STEM ACADEMY

BUDGET

A – Director Costs	TOTAL			
	State Funds	Perkins Funds	Other Funds (Local or grant funds to be described in Budget Narrative)	In-Kind
1. Personnel --- 1000			$2,700	
2. Employment Benefits --- 2000			$0	
3. Purchased/Contractual Services ---- 3000			$0	
4. Internal Services ---- 4000			$0	
5. Staff Development ---- 5000			$1,200	
6. Summer Component Activities ---- 5000			$0	
7. Travel ---- 5000			$0	
8. Contractual Services ---- 5000			$0	
9. Materials and Supplies ---- 6000			$6,400	
10. Equipment ---- 8000			$0	
11. Facilities ---- 8000			$0	
B – Indirect Costs *			$0	
TOTAL			$10,300	

* If recovering indirect costs, the rate must not exceed the federally approved indirect cost rate of the fiscal agent.

Appendix J:

References

References:

Center on Education and the Workforce, Georgetown University. Career Clusters: Forecasting Demand for High School through College Jobs, 2008-2018

Deloitte and The Manufacturing Institute. Boiling Point? The skills gap in U. S. manufacturing

Hampton Roads Research Partnership. Innovate! Hampton Roads. November 14, 2011

International Technology Education Association. Advancing the STEM Workforce through STEM-centric career Development by Rich Feller, September 2011.

Jobs for the Future. 2007. The STEM Workface Challenge: the Role of the Public Workforce System in a National Solution for a Competitive Science, Technology, Engineering, and Mathematics (STEM) Work force.

The Alliance for Science & Technology Research in America. Virginia's K–12 STEM Ed Report Card. 2011.

Virginia Board of Education Agenda Item

Agenda Item: L **Date:** April 26, 2012

Title	First Review of a Proposal from Fairfax County Public Schools to Establish the New Commonwealth Governor's STEM Academy at Chantilly High School and Chantilly Academy		
Presenter	Joan E. Ozdogan, Career Experience Specialist, Chantilly High School and Chantilly Academy Lolita B. Hall, Director, Office of Career and Technical Education Services		
E-mail	jeozdogan@fcps.edu lb.hall@doe.virginia.gov	**Phone**	(703) 222-7464 (804) 225-2051

Purpose of Presentation:
Other initiative or requirement. Specify below:
First review and acceptance of the Proposal to Establish the New Commonwealth Governor's STEM Academy at Chantilly High School and Chantilly Academy, Fairfax County Public Schools.

Previous Review or Action:
No previous review or action.

Action Requested:
Action will be requested at a future meeting. Specify anticipated date below:
Date: May 24, 2012
Action: Final review and approval

Alignment with Board of Education Goals: Please indicate (X) all that apply:

X	Goal 1: Expanded Opportunities to Learn
	Goal 2: Accountability of Student Learning
	Goal 3: Nurturing Young Learners
	Goal 4: Strong Literacy and Mathematics Skills
	Goal 5: Highly Qualified and Effective Teachers and Administrators
	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify: Governor's STEM Academy

Background Information and Statutory Authority:
Goal 1: The Governor's STEM Academy is designed to expand opportunities for the general student population to acquire STEM literacy and other critical skills, knowledge, and credentials that will prepare them for high-demand, high-wage and high-skill careers.

Partnerships establishing academies must include at least one public school division, business and industry, and postsecondary education. On November 29, 2007, the Board of Education approved the criteria to establish a Governor's STEM Academy. Subsequently, on March 19, 2008, the Board

approved the standards for the Governor's Career and Technical Education Exemplary Standards Awards Program, which all Career and Technical Academies must implement.

As required by the Board of Education, the State Council of Higher Education for Virginia (SCHEV) has reviewed the attached proposal and recommends that the Board approve the proposal. Staff members of the Virginia Department of Education (DOE) have also reviewed the proposal in the context of the Board's criteria. An executive summary of the proposal is in Attachment A. Attachments B and C are the reports from the reviews by SCHEV and the DOE. Attachment D is the complete proposal.

Currently, there are ten Governor's STEM Academies in Virginia. They are located in Arlington County, Chesterfield County, Halifax County, Hampton City, Loudoun County, Richmond City, Russell County, Stafford County, Suffolk City, and Carroll County.

Summary of Important Issues:
The proposal for the New Commonwealth Governor's STEM Academy at Chantilly High School and Chantilly Academy is conceptualized with partnerships consisting of Fairfax County Public Schools, Northern Virginia Community College, Dulles Regional Chamber of Commerce, Inova Health System, Lockheed Martin Corporation, Micron Technology, Inc., Norfolk State University, Old Dominion University, and Orbital Sciences Corporation.

The New Commonwealth Governor's STEM Academy at Chantilly High School and Chantilly Academy will focus on two career pathways: *Engineering and Technology* and *Network Systems*. Students will be provided STEM-enriched technological skills and knowledge necessary to succeed in postsecondary education and in the world of work through authentic, rigorous, project-based work while building partnerships with parents, community and business leaders to meet these goals.

The first pathway, *Engineering and Technology* is in the Science, Technology, Engineering, and Mathematics (STEM) Cluster. Students will examine technology and engineering fundamentals related to solving real-world problems. They will gain a basic understanding of engineering history and design, using mathematical and scientific concepts through hands-on projects in a laboratory setting as they communicate information in team-based presentations, developing proposals and writing technical reports. Students will be exposed to a variety of engineering fields such as Aeronautical Engineering, Architectural Engineering, Automotive Engineering, Bioengineering and Biomedical Engineering, Civil Engineering, Computer Engineering, Construction Engineering, Electrical Engineering, Electromechanical Engineering, Environmental Engineering, Industrial Engineering, Manufacturing Engineering, Mechanical Engineering, Surveying and Geomatics Engineering, and related career choices that will prepare them for postsecondary education.

The second pathway, *Network Systems* is in the Information Technology Cluster. Network Systems connect people and information. Students will learn how to design, install, maintain, and manage network systems for businesses and various other facilities. This pathway requires a solid foundation in mathematics and science as well as high technical skills. Students will have an opportunity to research and learn about energy conservation technologies and practices increasing the efficiency of energy distribution and use such as smart-grid technology. Information Technology workers can be found in virtually every sector of the economy and provide assistance on a multitude of levels.

Impact on Fiscal and Human Resources:
Funding must be provided at the local level.

Timetable for Further Review/Action:
The proposed beginning date for the New Commonwealth Governor's STEM Academy at Chantilly High School and Chantilly Academy, Fairfax County Public Schools, is fall of 2013.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education accept for first review the proposal to establish the New Commonwealth Governor's STEM Academy at Chantilly High School and Chantilly Academy, Fairfax County Public Schools.

New Commonwealth Governor's STEM Academy
at
Chantilly High School and Chantilly Academy
Executive Summary
April 9, 2012

Partnership Members:	Fairfax County Public Schools; Northern Virginia Community College, Dulles Regional Chamber of Commerce, Inova Health System, Lockheed Martin Corporation, Micron Technology, Inc., Norfolk State University, Northrop Grumman Information Systems, Old Dominion University, Orbital Sciences Corporation, SRC Inc., The SI Organization, and Virginia Manufacturers Association.
Lead Entity:	Chantilly High School and Chantilly Academy
Fiscal Agent:	Fairfax County Public Schools
Contact Person:	Ms. Joan E. Ozdogan Career Experience Specialist 703 222-7464 jeozdogan@fcps.edu
Academy Location:	New Commonwealth Governor's STEM Academy 4201 Stringfellow Road Chantilly, VA 20151
Number Students:	The Governor's STEM Academy will have the capacity to enroll 1,500 students, grades 9–12. During the initial school year (2013-2014) enrollment will be offered to 1,300 students.
Career Pathways:	Engineering and Technology Network Systems
Academy Goals and Description:	The overall goals of the Governor's STEM Academy are to provide students with the 21st-century, STEM-enriched technological skills and knowledge necessary to succeed in postsecondary education and in the world of work through authentic, rigorous, project-based work while building partnerships with parents, community and business leaders to meet these goals. Specific Governor's STEM Academy objectives include: • Improve academic achievement of Academy students by increasing academic rigor and relevance within selected pathways. • Increase dual enrollment courses; offerings and completion rates. • Provide workplace readiness experiences through strong partnerships with industry and government.

- Increase high school graduation rates.
- Reduce dropout rates.
- Increase enrollment and retention in postsecondary education.
- Increase the number of students completing a college and workplace readiness curriculum in high school.
- Reduce the number of students requiring remediation in college.
- Increase the number of industry certifications awarded to high school students.
- Increase the number of graduates employed in high-wage, high-skilled careers.

Highlights of the Program:

As a result of participating in the Governor's STEM Academy in the pathways of Engineering and Technology and Network Systems students will:

- Gain a deeper understanding of the skills and knowledge incorporated in their fields of study;
- Benefit from specialized, project-based courses which develop critical-thinking, problem-solving, and decision-making skills, preparing them for the 21st-century world;
- Acquire effective communication skills;
- Develop relevant workplace readiness skills;
- Receive opportunities to earn industry certifications preparing them to be more competitive in the work force and when applying to advanced training schools or postsecondary institutions;
- Obtain meaningful, real-life, hands-on experiences in their career pathway; and
- Profit from opportunities for internships, mentorships, job shadowing, and cooperative education, which provide students with advantages when entering postsecondary education and/or the workplace.

Attachment B

The State Council of Higher Education for Virginia

Review of Governor's STEM Academy Proposal

Name of Lead Entity on Proposal: Chantilly High School and Chantilly Academy

Date of Review: 4-16-2012

The State Council of Higher Education for Virginia recommends approval of the: New Commonwealth Governor's STEM Academy at Chantilly High School and Chantilly Academy

Peter Blake
Director
State Council for Higher Education

4/15/12
Date

Virginia Department of Education
Governor's STEM Academy
Proposal Review Checklist

Title of Proposal: The New Commonwealth Governor's STEM Academy at Chantilly High School

Lead Entity for Proposal: Chantilly High School Academy, Fairfax County Public Schools

Date of Review: April 5, 2012

Virginia Department of Education
Governor's STEM Academy
Proposal Review Checklist

I. Partnership Capacity

Partnerships desiring to implement a Governor's STEM Academy shall provide the Department of Education with evidence of the following:

Criteria	Documentation			Comments
	Full	Partial	None	
A. An active, ongoing planning committee, including a list of members and signed certifications from each that they are willing and able to serve in that capacity. At a minimum, members must represent K-12 education (superintendent or designee), higher education, and business and industry. All partners must be represented on the committee.	X	.		.
B. An advisory committee, including a list of members and signed certifications from each that they are willing and able to serve in that capacity.	X			
C. A written memorandum of agreement among school divisions, local businesses, postsecondary institutions, and any other partners that outlines ways in which community resources will contribute to the Governor's STEM Academy to broaden the scope of students' educational experiences.	X			
D. A statement of assurances that the Governor's STEM Academy Planning Committee has reviewed provisions of *Administrative Procedures Guide for the Establishment of Governor's STEM Academies* and agrees to follow the guidelines set forth in the document (see appendix).	X			

Criteria	Documentation			Comments
	Full	Partial	None	
E. A statement of assurances that, if applicable, an ongoing Governing Board will be established to reflect current Board of Education regulations relative to jointly operated schools and programs (see appendix).				NA
Comments:				

II. Need/Rationale for the Academy

Partnerships desiring to implement a Governor's STEM Academy shall provide the Department of Education with evidence of the following:

Criteria	Documentation			Comments
	Full	Partial	None	
A. Demonstration of the need/rationale for the Academy. This statement should be concise and state the major reasons to have a Governor's STEM Academy, including need at the state, local and/or regional levels.	X			
B. A description of the enhanced or additional offerings in science, technology, engineering, and/or mathematics (STEM) that will meet the need described above.	X			
C. A fiscal agent that is a public entity, including a certification that the entity is willing and able to serve in that capacity.	X			
Comments:				

III. Program Description

Each Governor's STEM Academy planning committee shall develop cooperatively with local school divisions, business, community, and higher education partners and have available for review and dissemination, a program description that includes:

A. A statement of program goals addressing the following criteria:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Rigorous academic content in career and technical instruction;	X			
2. An emphasis on STEM career pathways;	X			
3. Individualized high school plans to ensure course selections that are aligned with students' transition and career goals after high school;	X			
4. Evidence that graduates will complete a college and work readiness curriculum, minimally at the level specified for Commonwealth Scholars Course of Study (State Scholars Core) with the possibility of pre-approved substitution of equivalent courses where there may be more relevant course selections for a particular career pathway;	X			
5. Evidence that graduates will qualify for the Technical and/or the Advanced Technical Diplomas; and	X			
6. Incorporation of Virginia's Workplace Readiness Skills.	X			
Comments:				

B. A statement of program objectives and performance measures to:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Improve academic achievement of Academy students;	X			
2. Increase completion of dual enrollment courses;	X			
3. Provide workplace readiness experiences for students through strong partnerships with businesses;	X			
4. Increase high school graduation rates;	X			
5. Reduce dropout rates;	X			.
6. Increase enrollment and retention in postsecondary education;	X			
7. Increase the proportion of students completing a college and workplace ready curriculum in high school;	X			
8. Reduce the proportion of students requiring remediation in college;	X			
9. Increase the number of industry certifications awarded to high school students; and	X			
10. Increase the number of graduates employed in high-wage, high-demand and high-skill careers.	X			
Comments:				

C. A brief description of the proposed program, including:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Site location;	X			
2. Number of students to be served;	X			
3. Grade levels;	X			
4. General curriculum design;	X			
5. List of courses to be delivered;	X			
6. Description of how/where the courses will be delivered. Courses may be delivered on a high school, technical center or community college campus, online, or in other innovative ways.	X			
7. Designation of full-day or part-day, academic-year program.	X			
Comments:				

D. Evidence of participation in the Governor's Exemplary Standards Award Program for STEM Education

	Documentation			Comments
	Full	Partial	None	
	X			.
Comments:				

E. Program and course descriptions

E.1. At least two well-articulated career pathways must be included that meet the following criteria:

Criteria	Documentation			Comments
	Full	Partial	None	
Pathway #1				
a. Must include opportunities to earn industry credentials, postsecondary certificates, diplomas or associate degrees while in high school and pursue additional industry credentials and academic degrees at the associate, bachelor's and graduate levels. These pathways may be in the same or different career clusters.	X			
b. Must be in a field identified by a statewide authority or organization, such as the Virginia Economic Development Partnership or the Virginia Research and Technology Advisory Commission, as a strategic growth area for Virginia. Examples include biosciences, information technology, automotive technology and motor sports, as well as modeling and simulation and nanotechnology **or**	X			

Criteria	Documentation			Comments
	Full	Partial	None	
c. Must address regional and local work force demand in a high-wage, high-skill field as identified by employers and work force officials.	X			
d. At least one pathway must be in a STEM-related field. This career pathway should drive the innovative capacity of the region and/or state.	X			
Comments:				

Criteria	Documentation			Comments
	Full	Partial	None	
Pathway #2				
a. Each career pathway must include opportunities to earn industry credentials, postsecondary certificates, diplomas or associate degrees while in high school and pursue additional industry credentials and academic degrees at the associate, bachelor's and graduate levels. These pathways may be in the same or different career clusters.	X			
b. Must be in a field identified by a statewide authority or organization, such as the Virginia Economic Development Partnership or the Virginia Research and Technology Advisory Commission, as a strategic growth area for Virginia. Examples include biosciences, information technology, automotive technology and motor sports, as well as modeling and simulation and nanotechnology, or	X			

Criteria	Documentation			Comments
	Full	Partial	None	
c. Must address regional and local work force demand in a high-wage, high-skill field as identified by employers and work force officials.	X			
d. Of the two pathways described, at least one must be in a STEM-related field. This career pathway should drive the innovative capacity of the region and/or the state.	X			
e. Additional career pathways may address one of the areas described above, or an area identified by the partnership as an area of interest, growth, or expansion for students in the service area of the Academy.	X			
Comments:				

E.2 List of all requirements for successful program completion.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

E.3 Academy graduates must achieve one or more of the following benchmarks:

Criteria	Documentation			Comments
	Full	Partial	None	
a. Earn one or more industry certifications or state occupational licenses, and/or demonstrate competencies on an assessment instrument recognized by postsecondary institutions such as CLEP examinations, collaboratively designed or mutually approved end-of-course tests, college placement tests, or student portfolios reviewed by a team of college and high school faculty; **or**	X			
b. Earn at least 9 transferable college credits as defined in the Early College Scholars program (includes dual enrollment, AP and other options); **or**	X			
c. Earn an Associate Degree.	X			
Comments:				

E.4 Significant work-based experience must be included representing additional instruction or training beyond the classroom such as:

Criteria	Documentation			Comments
	Full	Partial	None	
a. Cooperative Education; or	X			
b. Internships; or	X			
c. Job Shadowing; or	X			
d. Mentorships; or	X			
e. Project-based learning; or	X			
f. Service learning; or				
g. A combination of the above.				
Comments:				

F. Length of program and daily schedule: Governor's STEM Academies are defined by program content, not by the location or delivery system of courses. Evidence of the following must be submitted:

Criteria	Documentation			Comments
	Full	Partial	None	
Designation of full-day or part-day, academic-year program.	X			
Comments:				

G. Assurance from the fiscal agent that operating funds and facilities are available to support the Governor's STEM Academy and are adequate to meet the needs of the program

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

H. Materials and equipment to be provided to accomplish program goals and objectives.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

I. Evidence of an internal evaluation process to effect program improvement, including:

Criteria	Documentation			Comments
	Full	Partial	None	
1. A review of the Academy's policies, procedures, and outcomes;	X			
2. A review of the program design and instructional delivery;	X			
3. Consideration of feedback from students, staff, parents, the community, and partnership members; and	X			
4. Annual collection and reporting of data to the Department of Education related to student achievement, goal achievement, and other indicators.	X			
Comments:				

IV. Administrative Procedures

Each Governor's STEM Academy must develop and maintain procedures developed cooperatively with participating partners. There should be evidence of procedures in the four areas that follow.

A. Partnerships - The role of business and industry, public school divisions, and postsecondary institutions in the partnership. The role of workforce and economic development entities should also be included if they are among the partners.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

B. Student recruitment, selection criteria, and admissions.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

C. Code of student conduct and attendance.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

D. Transportation provided by the school division or consortium that is in compliance with all applicable federal and state regulations.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

E. Staff recruitment, selection, and assignment - The Governor's STEM Academy shall hire staff members who meet the Virginia teacher licensure requirements and/or postsecondary faculty qualifications. Where applicable, they must have industry-specific education with training and experience, including industry certification.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

F. Staff development - The program will provide appropriate staff training in addition to staff planning time.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

G. Staff evaluation – Staff will be evaluated according to the human resources policies of the agency or institution employing Academy personnel.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

H. Parent, student and community involvement

Criteria	Documentation			Comments
	Full	Partial	None	
1. Preparation for entering the Academies should begin by eighth grade.	X			
2. Students, parents, teachers, and counselors should work collaboratively to: a. Complete career interest inventories;	X			
b. Prepare academic and career plans outlining an intended course of study in high school;	X			
c. Review multiple postsecondary pathways and the steps required to pursue them;	X			
d. Participate in career assessments to identify areas students should strengthen to qualify for their selected pathways; and	X			
e. Discuss available diplomas, seals, and other recognitions including admission to specialized programs such as Governor's Academies.	X			

Documentation of insurance, budget, and other fiscal information

	Documentation			Comments
	Full	**Partial**	**None**	
Insurance	X			
Budget (from appendix)	X			
Budget Narrative	X			
Other				
Comments:				

Attachment D

New Commonwealth Governor's STEM Academy

At Chantilly High School

Advancing Excellence in Career & Technical Education for Virginia's Economic Future

Fairfax County Public Schools
Fairfax, Virginia
April 2012

FAIRFAX COUNTY
PUBLIC SCHOOLS

Jack D. Dale, Superintendent
8115 Gatehouse Road
Falls Church, Virginia 22042

February 22, 2012

Virginia Department of Education
Office of Career and Technical Education Services
PO Box 2120
Richmond, VA 23218

Dear Sir or Madam:

President Obama, during the first-ever White House Science Fair that was held in 2010, said, "If you win the NCAA championship, you come to the White House. Well, if you're a young person and you produce the best experiment or design, the best hardware or software, you ought to be recognized for that achievement, too." As the Superintendent of Fairfax County Public Schools (FCPS), I want Virginia's students to not only participate at such an event but also to excel, thereby enhancing the reputation of Virginia's STEM programming.

Over the years, Chantilly Academy has demonstrated leadership in Career and Technical Education (CTE) in Northern Virginia through its innovative collaborations with community leaders, businesses, and educational organizations. I can think of no other organization in Northern Virginia that would be as qualified and dedicated to the success of such an endeavor. In turn, FCPS will provide the logistical support that is necessary to create an efficient yet effective STEM program at Chantilly Academy.

But this proposal is about more than winning science fairs. The New Commonwealth Governor's Academy will provide students with the knowledge and abilities needed to compete in the global arena of the 21st Century; it will also give them the confidence and encouragement they need for success later in life. The certification programs proposed by the Academy will provide businesses with industry validated assurance that graduating students are qualified and motivated for cutting-edge careers, including the two new program areas in engineering technology for advanced manufacturing and information technology-cybersecurity. For at-risk students, the Academy will be the reason they remain engaged in their educations. Programs that are relevant to today's marketplace will encourage them to pursue postsecondary studies. The expansion of the Academy's dual enrollment program with Northern Virginia Community College will provide an early college experience and college credits for <u>all</u> students and promote "college – going" confidence.

I hope that the Virginia Department of Education will recognize the merits of this proposal and approve the creation of a new, national showcase that will reflect Virginia's commitment to STEM education. Northern Virginia is an internationally recognized magnet to STEM companies and employees, and this initiative is desperately needed for our region's vital economic future.

Sincerely,

Jack D. Dale
Superintendent of Schools

New Commonwealth Governor's STEM Academy
Board of Education Proposal

INTRODUCTION 4

RATIONALE 4
Current Program 4
Establishment of the New Commonwealth Governor's STEM Academy
Expansion Program Overview 13

Program Description 14
Program Objectives and Performance Measures 14
Governor's Exemplary Standards Award Program for CTE 16

Engineering Technology 17
Engineering and Technology–Pathway 19
Engineering Technology–Program and Course Descriptions 21
Engineering Technology–Industry Certifications 23
Engineering Technology–Enhancements 25

Information Technology–Cybersecurity 27
Network Systems–Cybersecurity–Pathway 30
IT–Cybersecurity–Program and Course Descriptions 31
IT–Cybersecurity–Requirements for Successful Program Completion 33
IT–Cybersecurity–Industry Certifications 34
IT–Cybersecurity–Enhancements 34

Preparing Our Graduates for Work and Postsecondary Education Success .. 37
Program Description 39
Successful Program Completion 42
Implementation Plan 43
Work-Based Experience 44
Instructional Schedule 47
Infrastructure–Materials and Equipment 47
Internal Evaluation Process 49
Sustainability of the New Commonwealth Governor's STEM Academy 51

Administrative Procedures 51
Partnerships 51
Student Recruitment, Selection Criteria, and Admissions 52
Code of Conduct and Attendance Policies 54
Transportation 56
Faculty Recruitment/Selection/Assignment 56
Staff Development 56
Staff Evaluation 57

Student, Parent, and Community Investment 58
Insurance Documentation 62
Budget Narrative 62
Summary 65

APPENDICES 67

A: Planning and Advisory Committee Members 68
B: Memorandums of Agreement 97
C: Letter of Assurance from Fiscal Agent 116
D: Budget 118
E: Pathway Programs of Study 120
Engineering and Technology
Network Systems: Cybersecurity
F: 2012–2013 Chantilly Academy Bell Schedule 129
G: Statement of Insurance 131
H. 2011-2012 Chantilly Academy Profile 133

INTRODUCTION

A collaboration that includes Chantilly High School and Chantilly Academy, Fairfax County Public Schools (FCPS), distinguished centers of postsecondary and higher education, and the Northern Virginia regional business community respectfully requests Governor's Science, Technology, Engineering and Mathematics (STEM) Academy status to advance STEM secondary education and bright futures in STEM at the proposed New Commonwealth Governor's STEM Academy (NCGSA). The goals of this proposed academy will be realized through current Career and Technical Education (CTE) program offerings and the addition of two new program areas: Engineering Technology/Advanced Manufacturing and Information Technology/IT Cybersecurity. The New Commonwealth Governor's STEM Academy and its partners will advance Fairfax County as a Work Ready Community through the adoption of Virginia's Workplace Readiness Skills and Virginia Career Readiness Certifications as a standard for all student graduates of the New Commonwealth Governor's STEM Academy.

RATIONALE

Current Programs at Chantilly Academy

Mission

FCPS administers six high school academies, CTE learning centers within existing high schools, which offer advanced technical and specialized courses that successfully integrate career and academic preparation. Chantilly Academy is the largest of six FCPS high school academies and is an embedded part-day magnet academy for student enrollment from twenty schools in the FCPS division.

As a dynamic learning environment, Chantilly Academy's mission is to offer high-value specialized career-oriented electives. Students gain professional experience, verified credit, professional licensure, and industry certifications, and earn college credits through dual enrollment agreements with James Madison University and Northern Virginia Community College (NOVA), as well as articulated credits with George Mason University–Volgenau School of Engineering and other postsecondary institutions.

Student Demographics SY 2011–2012

The students at Chantilly Academy represent a diverse community of learners, as shown in the following table:

Total Number of Students	1,210
Totals by Grade Level	
• 10th Graders	49
• 11th Graders	507
• 12th Graders	653
• Postsecondary	1
Male Students	656 54 percent
Female Students	564 46 percent
Special Education Services	23.8 percent
ESOL Services (Levels 1 – 5)	11.9 percent
Free & Reduced Lunch Eligibility (Self-Reported)	6.3 percent
Dropout Rate SY 2009-2010	
Chantilly High School	0.49 percent
FCPS Division (Grades 7-12)	1.36 percent
Students by Ethnic Classification	
• White	42.9 percent
• Black	9 percent
• Hispanic	23.3 percent
• American Indian	.08 percent
• Asian	19.9 percent
• More than 2 races	4.5 percent
• Hawaiian/Pacific Islander	.08 percent

High School Representation

In all, 20 division high schools are currently represented at Chantilly Academy. Nearly 44 percent of the 1,210 students (530) are from Chantilly High School. Additional division high schools represented in the student population and numbers of students from each school include the following:

Annandale (2),

Cedar Lane Center (1),

Centreville (150),

Fairfax (79),

Herndon (71),

Langley (1),

James Madison (5),

George C. Marshall (6),

McLean (2),

Mountain View Alternative School (7),

Oakton (26),

James W. Robinson Secondary (51),

South County Secondary (1),

South Lakes (43),

West Springfield (9),

Westfield High School (179),

WT Woodson (42), and

Special Services (5).

Career and Technical Education Course Offerings

Chantilly Academy's current educational mission addresses eight career cluster areas:

Architecture & Construction (2 courses);

Business Management and Administration (2 courses);

Health Science (10 courses);

Human Services (8 courses);

Information Technology (7 courses);

Law, Public Safety, Corrections and Security (2 courses);

Science, Technology, Engineering and Mathematics (7 courses); and

Transportation, Distribution and Logistics (4 courses).

A total of 42 specialized elective courses are offered. *For a complete list of all Academy courses, visit:* http://www.fcps.edu/ChantillyAcademy/Courses/Courses.html

Establishing Academic and Business/Industry Partnerships

Over the past five years, Chantilly Academy has excelled in collaboration that has advanced CTE curriculum development, instituted dual enrollment, classroom and laboratory resources, service learning and career experience. Collaboration has resulted in innovative programs addressing work force development for Virginia's 21st century.

Chantilly Academy is in its fifth year of offering **"Girls Exploring Engineering - GE²"** – an all-girls section of Engineering Systems I (entry level course for engineering). This single-sex public education class was established to address the underrepresentation of young women in STEM courses. GE² offers one-on-one mentorship for each student with

a professional female engineer for year-long mentorship, guest lectures by distinguished women in engineering, and "behind the scenes" engineering field trips for current GE² students and GE² alumni who are currently enrolled in Academy upper level engineering classes. In 2010, Chantilly Academy advanced service learning through formal affiliation with Purdue University's Engineering Projects in Community Service (EPICS~High) program. Working with Quality of Life Plus (a community-based non-profit organization based in McLean, Virginia) and the Northern Virginia Association for the Blind, GE² student teams addressed the design challenge of "Radar for the Blind," using sensor technologies to assist individuals with vision impairment to navigate safely around low hanging tree branches, corded waiting lines found at airports, and banks and other obstacles not detected by traditional white cane navigation techniques.

GE² has been the grateful recipient of philanthropic investments in engineering education diversity by the ExxonMobil Foundation, Micron Technology, SRC Inc., Lockheed Martin, Wells Fargo Bank, and NOBLIS. To date, 83 percent of GE² alumni graduates are enrolled in distinguished centers of engineering higher education, including the following:

Virginia Polytechnic Institute and State University,

University of Virginia,

Virginia Commonwealth University,

Massachusetts Institute of Technology,

Purdue University,

James Madison University,

University of South Carolina,

Clemson University,

Georgia Institute of Technology,

Harvey Mudd College,

California Polytechnic Institute,

Carnegie Mellon University,

University of Rhode Island,

Brown University,

Auburn University,

The Citadel,

Rochester Institute of Technology,

Embry Riddle Aeronautical University – Prescott,

Stevens Institute of Technology,

George Washington University,

Northern Virginia Community College, and

Northwestern University.

Four years ago, Chantilly Academy joined with Wright State University in Dayton, Ohio, and 14 other universities/colleges on a National Science Foundation (NSF) Phase 3 CCLI grant for **"Mathematical Applications in Engineering."** This NSF CCLI Phase III grant provided Chantilly Academy with $100,000 to modify a 10-week university freshman engineering mathematics class to a 36-week upper level mathematics high school course for students planning to pursue engineering higher education. The NSF grant funded curriculum development, teacher salary, textbooks and lab equipment. "Engineering Math" is an engineering problems-based approach to learning the

mathematics that will be required in pursuit of an undergraduate engineering degree. In its third year, the course is delivered by a teacher with an undergraduate degree in electrical engineering, and endorsements in physics and mathematics to one section of 31 promising future engineers.

In its fourth year, **Independent Research – Engineering** was developed as a senior capstone course and offers a work-based learning experience through mentorship in corporate, government, and higher education organizations. Independent Research – Engineering students have benefited from yearlong mentorship placements at Northrop Grumman Information Systems, U.S. Naval Research Laboratory (NRL) – Center for Naval Space Technologies, Micron Technology, ESI Total Fuel Management, George Mason University – Krasnow Institute Neural Lab, and Patton Harris Rust & Associates, PC. In SY 2011–2012, , five students are teamed on a Center for Naval Space Technologies design challenge at the NRL, and one student is completing mentorship at ESI Total Fuel Management in an engineering design and engineering management project.

In response to our Commonwealth's and our nation's work force need to educate and train **Geographic Information Systems (GIS)** analysts and technicians, three years ago Chantilly Academy partnered with NOVA and two other Virginia high schools on a U.S. Department of Labor - Technology Based Learning Grant to establish GIS secondary education that is dual enrolled with NOVA. This successful grant resulted in a dual enrollment for a class of GIS students, new industry relevant computer hardware and software, GIS conference participation for our students, and industry/government

internships. Chantilly Academy's GIS students took first place in the state in a Technology Students of America (TSA) design challenge.

In its second year, GIS is dual enrolled with James Madison University (JMU) for three college credits for our students, and an expert GIS professional from the SI Organization in Chantilly, Virginia, and JMU faculty are providing both classroom enrichment and professional staff development support for Academy faculty.

In 2011, Chantilly Academy entered a school/business partnership with ProFinishes Plus that is advancing 21st century *green technology* in the Academy's **Automotive Collision Services** program. This new partnership has resulted in a state-of-the-art Automotive Collision Services program with waterborne automotive paint technology that prepares students for competitive, high-value, high-salary employment in the auto collision services industry. It is expected that in the coming years, the automotive collision services industry will be mandated by both federal and state governments to transform its current use of solvent-based paints to waterborne paints to remediate environmental impact.

Through this partnership, ProFinishes Plus is enabling Chantilly Academy's Automotive Collision Services program to update its shop with new equipment (sprayers, mixers, fans), in order to educate and train students in this latest technology. The Academy's two-year program now prepares students for future careers as *state-of-the-art* collision services technicians. Moreover, the transformation to waterborne paint technology has resulted in a cleaner classroom and shop environment for students, faculty, and the

general school community. The ProFinishes Plus Partnership is working to establish an Advisory Committee to guide the development of the program according to local industry expectations for competencies; co-promote student achievement, postsecondary educational opportunities, and gainful employment; and solicit support for student tool grant scholarships for program graduates entering the work force.

Chantilly Academy's Engineering program has agreed to support the efforts of the University of Virginia – School of Engineering & Applied Science and University of Maryland - A. James Clark School of Engineering in the research and piloting of an ***Advanced Placement® and/or dual enrollment process for Engineering Design***. The Academy's Engineering Instructor and Career Experience Specialist were invited to attend a two-day workshop at UVA, December 1-2, 2011, to review and comment on the Engineering Design Process Portfolio Scoring Rubric and an e-portfolio to be incorporated into the AP Engineering Design program. Chantilly Academy began piloting the scoring rubric beginning in January 2012. This research is being sponsored by the National Science Foundation and the Kern Family Foundation.

Chantilly Academy is an established and respected partner with industry, government, and postsecondary and higher education, as well as an incubator of new programs and secondary CTE curriculum for replication across our state and nation. The resulting opportunities have enriched student experiences in design, innovation, and access to contemporary technologies. We are committed to building on this history of achievement to advance the three new high-value, high-impact initiatives presented in this proposal.

Establishment of the New Commonwealth Governor's STEM Academy

Innovation is critical to Virginia's competitiveness in this global market. The New Commonwealth Governor's STEM Academy will be the premiere delivery site in FCPS for STEM CTE education in the following principal areas: Engineering and Technology, Information Technology, Workplace Readiness Skills (WRS) and Career Readiness Certificate (CRC).

Three new program areas have been selected that are strategically aligned with today's work force demands and will enable students to acquire knowledge and skills that will prepare them for success in postsecondary/higher education pathways and entrance to sustainable, high-wage, high-skill careers in our Northern Virginia region and across the Commonwealth.

The new Academic programs are dynamic and strategic expansions of current offerings in Technology, Engineering and Mathematics—Engineering Technology with an emphasis on Advanced Manufacturing; and Information Technology—with an emphasis on Cybersecurity. Adoption of the Virginia Workplace Readiness Skills (WRS) and Virginia Career Readiness Certification (CRC) programs will advance the Academy's commitment to postsecondary education and workplace readiness for its graduates.

Program Description

Program Objectives and Performance Measures

We will optimize our strong and productive relationships with postsecondary and higher education, and our regional business community over the next three to five years to accomplish the objectives outlined below:

- Working with the FCPS CTE Coordinator, CTE Program Managers and the NCGSA Advisory Committee, the Academy will annually validate current course offerings to prepare students with relevant, high demand, high value industry certifications that enable them to be "work-ready" upon graduation, and/or be prepared for postsecondary and higher education after high school graduation.
- Deliver two new well-articulated career pathways in Engineering Technology and Information Technology/Security that are intertwined with high school credits, community college, and university credits. (See Career Pathways - Attachments)
- Graduates will have earned a minimum of 12 college credits in two new program areas; working with NOVA's Director, Dual Enrollment and Tech Prep and Academy faculty, additional dual enrollment opportunities will be explored in all Academy program areas.
- Advance Fairfax County as a major proponent of a statewide initiative to foster Certified Work Ready Communities through the adoption of the WRS and CRC certifications. In collaboration with NOVA, the New Commonwealth Governor's STEM Academy will become an authorized CRC proctoring and test site to

administer CRC assessments to more than 500 senior CTE students annually by AY 2014–2015.

- Year over year increases in WRS certifications will increase by 10 percent beginning in year three of the new Academy.
- In Year Two, (1). increase the numbers of all Academy programs' seniors participating in CRC certification; and (2.) achieve a pass rate of 45 percent earning Bronze, Silver, Gold or Platinum CRC Certification in Year three.
- Increase the number of CTE Diploma Seals earned by Academy graduating seniors by 10 percent annually beginning in year one.
- Working with Departments of Student Services at Chantilly High School and 19 additional "feeder" high schools, optimize student outreach and recruitment targeting academically "at-risk" students to increase high school graduation rates. The Academy administration will develop baseline drop-out statistics for all feeder schools, identify "at-risk" students during the recruitment process, and track retention and high school completion rates by AY 2013–2014.
- NCGSA will institute a new graduation tracking system by AY 2014–2015 for all Academy graduating seniors capturing postsecondary plans. Data will be collected through annual senior surveys and contact with Departments of Student Services in all feeder high schools by the Academy Counselor and Career Experience Specialist.
- Increase the number of NCGSA students sitting for industry certifications by 15 percent by year two.

- Increase the number of NCGSA students earning industry certifications year after year by 10 percent in the first three years of the New Commonwealth Governor's STEM Academy.

Exemplary Standards Award for Career and Technical Education

In 2005, Chantilly Academy teachers, in accordance with guidelines outlined for the Governor's Exemplary Standards Award for Career and Technical Education, developed and implemented an evaluation process based on the US Department of Education, Office of Educational Research and Improvement (OERI) Exemplary Career-Technical Education (CTE) Program Evaluation Criteria. Data from the FCPS CTE State Report Card, school attendance and disciplinary records, learner performance on standardized tests (i.e., VA SOL, SAT, ACT, industry certification, credentials, licensure tests), and feedback from postsecondary programs and employers was compiled, maintained, and evaluated by Academy staff. Based on an analysis of data, program managers will continue to design and implement program adjustments.

The new Academy's administrative staff intends to fully participate in the Governor's Exemplary Standards Award Program for Career and Technical Education.

An Academy panel comprised of postsecondary and higher education faculty, and business partners and the FCPS CTE Advisory Committee will periodically review the data to ensure continuing improvement in program quality, educational significance,

and effectiveness and student success. Improvement plans for each participating CTE program will be developed and periodically reviewed and assessed by FCPS Office of CTE with the support of CTE program managers, school site-based administrators, and the CTE Coordinator.

Engineering Technology – Advanced Manufacturing in Virginia

Need

Based on the 2007-2012 Skilled Trades Gap Analysis Report: Final Report (Commissioned by the Virginia Manufacturers Association, Virginia Workforce Council and Virginia Manufacturing Advisory Council) advanced manufacturers want a more rigorous course of study in CTE programs. The Final Report indicates that "83 percent of the manufacturers who responded to the survey agreed that there should be additional requirements for Career and Technical Education in Virginia's K-12 education system."

This study found that entry-level workers in manufacturing often lack critical skills, including soft skills, measurable skills, and knowledge of basic manufacturing principles. To reduce the problems associated with identifying and addressing these deficits, manufacturers strongly support additional requirements for career and technical education in Virginia's K-12 education system, and the creation of a statewide credentialing program for manufacturing. Another finding was that the public image of manufacturing occupations significantly contributes to the problems employers experience in recruiting skilled workers.

Not only do high tech corporations need skilled workers who can fill entry level positions, they also need workers who possess the knowledge to be innovative. Virginia needs high school graduates prepared to enter a business or industry with the skills to be successful from day one; including critical thinking skills that foster collaborative teams and promote an environment that incubates innovation for the next generation of technology.

The survey makes a strong case for the need for Virginia to grow its own work force so that new patents in advanced manufacturing technology are developed in Virginia, and skilled workers value the Commonwealth as the best place to live and work.

Engineering Technology curriculum responds to *The National Governors Association (NGA) Center for Best Practices Science, Technology, Engineering and Math Center Grant Program Gap Analysis on Virginia's Policy Landscape* ***Section on Misalignment: Skilled Workforce (2007).*** According to the NGA, "Virginia does a relatively good job of producing and attracting workers at the most highly educated levels in STEM fields, including scientists and engineers. We are less successful in developing workers with specialized postsecondary and occupational training such as technicians, technologists, and skilled labor. At a recent Governor's Manufacturing Summit, researchers projected that approximately 40 percent of the skilled labor workforce is expected to retire in the next five years, and the pipeline to replace these workers is inadequate."

In 2007, the Virginia Biotechnology Association noted that, "Virginia anticipates more than 100,000 retirements among advanced manufacturing workers (including 45,000

technically skilled workers) over the coming decade and a major surge of demand for skilled labor as our state's bioscience, pharmaceutical, and semiconductor companies continue to expand their operations."

Pathway

The New Commonwealth Governor's STEM Academy will build on Chantilly High School's recognized expertise in engineering education to create an **Engineering and Technology** pathway, which will have a primary focus on engineering Technology. This new pathway expands STEM education and STEM careers for FCPS students that are drawn to analytical thinking, creative problem solving, engineering design, and advanced technologies.

Our "dream it–do it" scenario is to create a model for a high school-based Engineering Technology program (dual enrolled for an AAS in Engineering Technology–with transferable credits) that incorporates a new school-based Virginia Career Readiness Certification (CRC) capacity and the authorization to provide an industry certification. Two certifications are under review at this time for adoption: the Manufacturing Skill Standards Council (MSSC) Certified Production Technician and is currently approved by the Virginia Department of Education

The Manufacturing Technician position is an excellent example of the evolution of the advanced technology skills students will need to enter, operate and succeed in corporations (including Micron Technology, Lockheed Martin, and Orbital Sciences Corporation in the FCPS area) engaged in high-end engineering processes.

The Academy's dual enrollment program relationship with NOVA will be expanded to include College Composition, Precalculus, Engineering Graphics, Basic Programming Applied to Electrical/Electronic Calculations, and DC Fundamentals. The New Commonwealth Governor's STEM Academy will form a new alliance in dual enrollment with Chantilly High School English and Mathematics Departments that will enable Chantilly High School and students from other division high schools to dual enroll in core classes in each of these new programs at the Academy. The opportunity to earn 17 college credits will foster the college readiness of Engineering Technology students and boost student confidence for future college success.

This new program includes long-time stakeholders and partners Micron Technology, NOVA, Old Dominion University, and the Virginia Council for Advanced Technology Skills /Virginia Manufacturers Association. New program partners include Lockheed Martin, Orbital Sciences Corporation, and Norfolk State University.

Old Dominion University (ODU) and Norfolk State University (NSU) offer Bachelor of Science degrees in Engineering Technology. Students who have earned an AAS degree in Engineering Technology from any community college in Virginia may transfer to ODU and NSU to earn BS degrees. ODU and NSU faculty will collaborate with the New Commonwealth Governor's STEM Academy to encourage student achievement through curriculum development, ongoing curriculum validation, distance education/guest faculty lectures via existing video conferencing capabilities between the Academy and their university campuses, and an annual student and parent community education program that promotes pathways in Engineering Technology to

advanced manufacturing careers. ODU and the Academy are committed to establishing an additional pathway for Engineering Technology students through dual enrollment with Old Dominion University, enabling students to complete a four-year degree at Old Dominion University and/or a "two plus two" transfer from NOVA. Mentors who are experts in advanced manufacturing systems will be recruited from regional workplaces to work closely with Academy students to prepare them for the industry certification assessments and entry into the advanced manufacturing work force.

This pathway provides "real-world" career opportunities for all Academy graduates; high school to work, high school to postsecondary training, and high school to higher education. Employers will gain highly skilled entry-level workers, and may provide tuition assistance for college degree progress.

Engineering Technology - Program & Course Descriptions

ENG 111 - 112 COLLEGE COMPOSITION I-II – (3 Cr.) (3 Cr.)
Prerequisites are a satisfactory score on appropriate English proficiency examinations and four units of high school English or equivalent. Develops writing ability for study, work, and other areas of writing based on experience, observation, research, and reading of selected literature. Guides students in learning writing as a process, understanding the audience and purpose, exploring ideas and information, composing, revising, and editing. Supports writing by integrating experiences in thinking, reading, listening, and speaking.

MTH 163 Precalculus I – (3 Cr.)
Prerequisites are a satisfactory score on an appropriate proficiency examination and Algebra II and Geometry, or the equivalent of these two courses. Presents college algebra, matrices, and algebraic, exponential, and logarithmic functions.

EGR 115 Engineering Graphics – (2 Cr.)
Applies principles of orthographic projection and multi-view drawings. Teaches descriptive geometry including relationships of points, lines, planes, and solids. Introduces sectioning, dimensioning, and computer graphic techniques.

ETR 113 DC Fundamentals I – (4 Cr.)
This course introduces DC Circuits, Basic Electrical Components, Instruments, network theorems, and techniques used to predict, analyze, and measure electrical quantities.

ETR 106 Basic Programming Applied to Electrical/Electronic Calculations – (2 Cr.)
Teaches the application of a high-level language to electrical and electronic problem solving and circuit analysis. Introduces an operating system.

Requirements for Successful Program Completion

Dual enrolled college courses (totaling 17 college credits) will provide students with the opportunity to accelerate their studies towards the completion of an Associate of Applied Science (AAS) degree or Associate of Science (AS) degree in General Studies at NOVA. Students continuing their education may transfer credits to Old Dominion University or Norfolk State University in pursuit of a Bachelor of Science degree in Engineering Technology. These courses will include:

YEAR 1

o MTH 163 Precalculus 1(3 credits)	**Pre-Calc w/ Trig** (FCPS #316000)
o EGR 115 Engineering Graphics (2 credits)	**Engineering Drawing** (FCPS #843600)

YEAR 2

o ENG 111 College Composition I (3 credits)	**English 12** (FCPS #116000)

o ENG 112 College Composition II (3 credits)	**English 12** (FCPS #116000)
o ETR 113 DC Fundamentals I (4 credits)	**Electronics 1** (FCPS # 841600)
o ETR 106 Basic Programming Applied to Electrical/Electronic Calculations (2 credits)	**Electronics 2** (FCPS #841200)

Industry Certification

Two industry certifications are under review for adoption:

The **Manufacturing Skill Standards Council (MSSC)** is an industry-led training, assessment and certification organization focused on the ***core technical competencies*** needed by the nation's front-line production and material handling workers. The nationwide MSSC certifications, based upon industry-defined and federally-endorsed national standards, offer both entry-level and incumbent workers the opportunity to demonstrate that they have acquired the knowledge and skills increasingly needed in the technology-intensive jobs of the 21st century. MSSC has developed a nationally portable certification for this work force that is currently approved by VDoE:

Certified Production Technician (CPTAE): The CPTAE Certification addresses the core technical competencies of higher skilled production workers in all sectors of manufacturing. MSSC awards certificates to individuals who pass any of its five Production Modules: Safety; Quality Practices & Measurement; Manufacturing Processes & Production; Maintenance Awareness; Green Production and a full CPTAE Certification to those who pass all four original modules Accredited by ANSI under ISO

17024 (Personnel Certification), MSSC initiated a new CPT with an "AE" designation which stands for "ANSI Edition".

The Virginia Council on Advanced Technology Skills (VCATS), VMA's Workforce Development Division, is working to meet Virginia's present and future needs for skilled technical workers by setting the standard for success in industry. As Virginia's only competency-based industry-endorsed work force training and certification organization, VCATS provides a customized fast track pathway to credentials for a 21st-Century advanced technology career. The VCATS training and certification system, designed and validated by industry partners, is intended to develop a work force pipeline capable of meeting the cutting-edge requirements of existing and emerging employers in advanced technology fields, such as pharmaceutical, biotechnology and biomedical, chemical, advanced materials, plastics, and semiconductor manufacturing.

The Manufacturing Technician Assessment measures individual skills attainment in 12 critical technical skills. The complete assessment includes three sections:

Math and Measurement;

Spatial Reasoning and Manufacturing Technology; and,

Quality and Business Acumen.

A partial assessment can also be given. The assessment is online; each section takes approximately an hour; and, an individual has up to three hours to complete the full assessment.

The **Manufacturing Specialist Certificate** is awarded to individuals upon a successful pass rate of 75 percent on the following two Manufacturing Technician Assessment sections: Math and Measurement, and Spatial Reasoning and Manufacturing Technology. The **Manufacturing Technician Certificate** is awarded to individuals upon a successful pass rate of 75 percent on all three of the Manufacturing Technician Assessment sections: Math and Measurement; Spatial Reasoning and Manufacturing Technology; and, Quality and Business Acumen.

Students earning the CRC (see pp. 34–44) and the Level I Manufacturing Technician certifications, College English and Mathematics dual enrollment credits with NVCC will be competitive for employment in high-paying, entry-level positions in advanced manufacturing with Micron Technology, Lockheed Martin, Orbital Sciences Corporation, and other advanced manufacturing organizations. This certification will be submitted to VDOE for approval by the VMA in the 2012-2013 academic year.

Enhancements

In 2007, Micron Technology and Chantilly Academy signed a formal partnership agreement to advance secondary engineering, computer science, and information technology education. Each year, Chantilly Academy students benefit from engineering research internships; tours of Micron's semi-conductor manufacturing operations in Manassas, Virginia; mentorship with professional engineers, and philanthropic investments in Chantilly Academy's annual Engineering EXPO & Engineering College Fair; sponsorship of FIRST Robotics Chantilly 612 Team; and funding for the acquisition of advanced classroom/lab equipment.

The New Commonwealth Governor's STEM Academy will expand its current ***Independent Research*** senior capstone course to offer ***Independent Research - Engineering Technology*** to enable students to benefit from work based learning experiences in an advanced manufacturing environment.

Chantilly Academy's proposal to expand its STEM offerings through the addition of an **Engineering Technology/Advanced Manufacturing** program is an innovative outgrowth of existing partnerships with industry, postsecondary and higher education; our corporate partners' growing investments in the Commonwealth of Virginia; and our shared commitment to sustainable high-value, high-impact careers for Virginia's young people.

Working with our manufacturing partners, we will promote the National Association of Manufacturer's "Dream It – Do IT" and the VMA's "Manufacturing Makes Virginia" education campaigns, showcase careers in advanced manufacturing and highlight academic preparation. In preparation for full program launch in the 2013-2014 academic year, the Academy will present Open House programs for prospective students and parents, guest speakers on Engineering Technology and Advanced Manufacturing (postsecondary/higher education and employers), field trips to advanced manufacturing sites, summer internships, and workplace readiness. This initiative will also recruit manufacturing professionals to serve as mentors for those students preparing to complete a Manufacturing Technician Certification assessment.

Mentorship will be scheduled for after-school and/or Saturday morning sessions at the Academy.

Co-curricular student organizations will include First Robotics Chantilly 612 Team, Technology Students of America (TSA), Rocketry/Aerospace Club (Federation of Galaxy Explorers), and IEEE Student Club.

Information Technology - Cybersecurity

Need

In the 2005 Report to the President, *Cyber Security: A Crisis of Prioritization*, the President's Information Technology Advisory Committee stated,

> "The IT infrastructure in the United States is highly vulnerable to premeditated attacks with potentially catastrophic effects. Thus, it is a prime target for cyber terrorism as well as criminal acts.
>
> The IT infrastructure encompasses not only the best-known uses of the public Internet—e-commerce, communication, and Web services—but also the less visible systems and connections of the Nation's critical infrastructures such as power grids, air traffic control systems, financial systems, and military and intelligence systems. The growing dependence of these critical infrastructures on the IT infrastructure means that the former cannot be secure if the latter is not.
>
> Although current technical approaches address some of our immediate needs, they do not provide adequate computer and network security. Fundamentally different architectures and technologies are needed so that the IT infrastructure as a whole can become secure."

According to the Greater Washington Initiative's 2011–2012 Regional Report, cyberspace has emerged as the fifth domain of warfare—in addition to land, sea, air, and space. Global firms and start-ups in Greater Washington are developing next generation technologies to secure the world's government and corporate digital infrastructures.

The United States faces a chronic shortage in the quality and quantity of its cybersecurity experts, leaving the nation unprepared to defend itself against increasingly sophisticated online attacks. "A critical element of a robust cybersecurity strategy is having the right people at every level to identify, build, and staff the defenses and responses. And that is, by many accounts, the area where we are the weakest." So says "A Human Capital Crisis in Cybersecurity," a new study into computer security manpower challenges and potential solutions released by the Center for Strategic and International Studies (CSIS) Commission on Cybersecurity for the 44th President.

According to the commission's report, "we not only have a shortage of the highly technically skilled people required to operate and support systems already deployed, but also an even more desperate shortage of people who can design secure systems, write safe computer code, and create the ever more sophisticated tools needed to prevent, detect, mitigate, and reconstitute from damage due to system failures and malicious acts."

This warning was echoed by Jim Gosler, a fellow at Sandia National Laboratory, National Security Agency visiting scientist, and the founding director of the CIA's clandestine information technology office. Gosler said that "we don't have sufficiently bright people moving into this field to support those national security objectives as we move forward in time." Gosler has previously estimated that the United States requires 10,000 to 30,000 people who are highly skilled at cybersecurity but that currently, only about 1,000 are available.

According to the Heinz College at Carnegie Mellon University, a recognized university leader in cybersecurity education, *the average* entry-level salary for cybersecurity graduates has increased steadily, from $69,788 in 2007 to $80,275 in 2010. The industry expects cybersecurity salaries to continue to increase, and predicts strong sustainability in this career sector.

High school students who are interested in computer sciences and information technology and protecting IT systems will find a lucrative and sustainable market for their skills for the foreseeable future. Knowledge is king in the information technology world, and there is no better demonstration of that attribute on an employment application or résumé than industry recognized professional certifications. Government, military, and industry are engaged in programs and academic competitions that grab the attention of students and identify talent in high school. Industry partners to the nationwide Air Force Association's CyberPatriot Competition include Northrop Grumman, SAIC, Raytheon, Boeing, General Dynamics, Microsoft, and AT&T. Each of these organizations have major presence in our Northern Virginia and

Greater Washington, D.C., region. Their very "real-world" motives for participation reflect the critical need for cybersecurity talent and work force development.

Pathway

The New Commonwealth Governor's STEM Academy is positioned to respond to the cybersecurity grand challenge through enhancements to its **Network Systems** pathway. Chantilly Academy will collaborate with NOVA; Northrop Grumman Information Systems; SRC Inc.; The SI Organization and Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, US Department of Defense; and others to enrich its current program in secondary Information Technology education.

As we transition from Chantilly Academy to the New Commonwealth Governor's STEM Academy, we will expand specialized dual enrolled college course offerings with NOVA to include courses in cybersecurity. These high-level options will accelerate student studies leading to a Career Studies Certificate in Cybersecurity, or an Associate of Science Degree in Information Technology with an emphasis in Cybersecurity at NOVA, and/or a Bachelor of Science in Information Technology – Information Security at George Mason University.

Three new dual enrolled courses include ITE 115–Introduction to Computer Applications and Concepts, ITN 120–Wireless Network Administration, and ITN 260–Network Security Basics.

Program and Course Descriptions

For more than twelve years, Chantilly Academy has delivered invaluable instruction in Information Technology, through courses including: Computer Systems Technology–A+, Network Administration (2-year program), Cisco Academy (two-year program–Cisco Academy Levels 1-4) and Oracle. Academy students have benefited from opportunities to earn industry certifications, dual enrollment college credits with NOVA, as well as internships with Fairfax County Public Schools' Department of Information Technology, Rolls-Royce of North America, GTSI, and Northrop Grumman Information Systems.

According to *Government Computer News* (April 2011), "Qualification documentation is moving away from traditional areas such as network administration to accommodate new skills such as cybersecurity. In fact, cybersecurity and other qualified IT security skills are in high demand in the federal government. A recent study by Clearancejobs.com and Dice.com found that professionals with the right IT skills and an active government security clearance earned 12 percent more than non-cleared personnel. In the Washington, D.C., area, the pay bump is 20 percent."

The following courses and descriptions will compose the Information Technology–Cybersecurity program at the New Commonwealth Governor's STEM Academy:

ENG 111-112 - COLLEGE COMPOSITION I-II – (3 Cr.) (3 Cr.)
Prerequisites are a satisfactory score on appropriate English proficiency examinations and four units of high school English or equivalent. Develops writing ability for study, work, and other areas of writing based on experience, observation, research, and reading of selected literature. Guides students in learning writing as a process, understanding the audience and purpose, exploring ideas and information,

composing, revising, and editing. Supports writing by integrating experiences in thinking, reading, listening, and speaking.

MTH 163 Precalculus I – (3 Cr.)
Prerequisites are a satisfactory score on an appropriate proficiency examination and Algebra II and Geometry, or the equivalent of these two courses. Presents college algebra, matrices, and algebraic, exponential, and logarithmic functions.

ITN 154 – Cisco 1 – (4 Cr.)
Provides introduction to networking using the OSI reference model. Course content includes data encapsulation, TCP/IP suite, routing, IP addressing, and structured cabling design and implementation.

ITN 155 – Cisco 2 – (4 Cr.)
Features an introduction to basic router configuration using Cisco IOS software. Course content includes system components, interface configuration, IP network design, troubleshooting techniques, configuration and verification of IP addresses, and router protocols.

ITN 156 – Cisco 2 – (4 Cr.)
Centers instruction in LAN segmentation using bridges, routers, and switches. Course content includes fast Ethernet, access lists, routing protocols, spanning tree protocol, virtual LANs, and network management.

ITN 157 – Cisco 2 – (4 Cr.)
Concentrates on an introduction to Wide Area Networking (WANs). Course content includes WAN design, LAPB, Frame Relay, ISDN, HDLC, and PPP.

ITE 115 – Introduction to Computer Applications & Concepts – (3 Cr.)
Covers computer concepts and Internet skills and uses a software suite, that includes word processing, spreadsheet, database, and presentation software to demonstrate skills.

ITN 100 Introduction to Telecommunications – (3 Cr.)
Covers computer concepts and Internet skills and uses a software suite, that includes word processing, spreadsheet, database, and presentation software to demonstrate skills.

ITN 120 Wireless Network Administration – (3 Cr.)
Provides instruction in fundamentals of radio frequency and spread spectrum technology and wireless networking systems implementation and design. Course content includes radio frequency and spread spectrum concepts, 802.11 standards and regulations, wireless network architecture, topology, software, equipment, OSI Model, site surveys, security features, and the design and implementation of wireless network solutions.

ITN 260 Network Security Basics – (3 Cr.)
Explores the basics of network security in-depth. Includes security objectives, security architecture, security models and security layers. Discusses risk management, network security policy, and security training. Discusses the five security keys: confidentiality, integrity, availability, accountability, and auditability.

Requirements for Successful Program Completion

Working with NOVA, the following courses (37 college credit hours) will be offered for dual enrollment:

YEAR 1

- MTH 163 Precalculus 1 (3 credits) — **Pre-Calc w/ Trig** (FCPS #316000)
- ITN 154 Cisco 1 (4 credits) — **Cisco I – Part A** (FCPS #854232)
- ITN 155 Cisco 2 (4 credits) — **Cisco I – Part B** (FCPS #854332)
- ITE 115 Introduction to Computer Applications & Concepts (3 Cr.) — **Information Systems** (FCPS #661200)
- ITN 100 – Introduction to Telecommunications (3 Cr.) — **Network Administration I** (FCPS #665032)

YEAR 2

- ENG 111 College Composition I (3 credits) — **English 12** (FCPS #116000)
- ENG 112 College Composition II (3 credits) — **English 12** (FCPS #116000)
- ITN 156 Cisco 3 (4 credits) — **Cisco II – Part A** (FCPS # 854432)
- ITN 157 Cisco 4 (4 credits) — **Cisco II – Part B** (FCPS # 854532)
- ITN 120 – Wireless Network Administration (3 Cr.) — **Network Administration II** (FCPS #665132)

- ITN 260 – Network Security Basics (3 Cr.) **Network Administration II** (FCPS#665132)

Industry Certification

Students pursuing Information Technology studies at the New Commonwealth Governor's STEM Academy will be eligible to earn the following industry recognized certifications: Virginia Career Readiness Certification (CRC), IC3, A+ CompTIA, CCNA, ICDN (2 parts), NetPlus, MTA, Microsoft Office Specialist (MOS), Microsoft Certified Professional (MCP), and Certified Internet Webmaster (CIW), and begin preparation for CISSP. IT Cybersecurity students may benefit from enrollment in an IT Co-op Course earning an additional CTE credit toward the CTE Diploma Seal or the CTE Advanced Technical Diploma.

Enhancements

In collaboration with Fairfax County Public Schools, the Northern Virginia Technology Council (NVTC) hosts an annual Job Shadow Day Program among its member organizations in the Northern Virginia community for Academy students to gain insights into "real-world" IT operations and careers. Students are matched with hosting NVTC member organizations for job shadows that are "door openers" for summer internships and/or part-time employment opportunities.

For the past two years, Chantilly Academy Information Technology and Air Force Junior ROTC students have heard an impassioned plea for cybersecurity education and

careers from personnel at the Office of the Undersecretary of Defense (OUSD) Acquisition, Technology and Logistics at Federal IT Job Shadow Day Programs at the U.S. Pentagon. Personnel from this DoD office also participated in the 2011 Engineering EXPO & Engineering College Fair to encourage cybersecurity education and careers in both the private and public sectors. The OUSD will serve as a Representative to the Advisory Committee and provide resources to the NCGSA on work force development in cybersecurity.

For the second consecutive year, in 2012 Chantilly Academy students who are enrolled in Engineering, Air Force Junior ROTC and IT programs were recruited and formed student teams in Air Force Association's (AFA) Annual CyberPatriot competition. This year, fifty-seven students served on five teams in competition. Northrop Grumman Information Systems and SRC Inc. provided cybersecurity experts as mentors to support student education in information assurance and team competition. Two of the Academy's five teams qualified and participated in the CyberPatriot IV National Semi-Finals Competition representing the Commonwealth of Virginia in the national semi-finals.

Northrop Grumman and Chantilly High School/Chantilly Academy are celebrating the twenty-fifth year of an invaluable school/business partnership this academic year. Northrop Grumman Information Systems' Cyber Academy, located in McLean, Virginia, is currently pursuing an increased investment in K–12 and higher education that will advance the cybersecurity work force pipeline.

Northrop Grumman played a leadership role in the recent **2011 Engineering EXPO & Engineering College Fair** presented by Chantilly Academy for students in grades 7-12 in the FCPS division. The keynote presentation was on "Cybersecurity: An Engineering Grand Challenge" by Dr. Paul Seay of Northrop Grumman Information Systems.
At this event, Northrop Grumman CyberAcademy professionals outlined the challenge in today's society, as well as ways to assure personal/school cybersecurity, and presented CyberAcademy workshops (unclassified), and career exploration sessions for the more than 500 students and their parents in attendance on October 22, 2011.

Northrop Grumman and the New Commonwealth Governor's STEM Academy are now working to develop an annual summer program, **"Cybersecurity Camp"** for FCPS division students in rising 9–12 grades to be offered for the first time in summer 2012 at the Academy and Chantilly High School. This week-long program will highlight key issues in information assurance, Internet personal safety, careers in information security and Academy programs in Information Technology and CyberSecurity.

The Academy is securing a new partnership with **The SI Organization**. The SI Organization is a leading provider of full life cycle, mission-critical systems engineering and integration services to the U.S. Intelligence Community, Department of Defense, and other agencies. They have a 40-year history of successfully delivering complex system-of-systems technology solutions. In addition to providing mentors for the Academy's GE^2 program, the partnership will be expanded to include their new Spires Program.

The Spires Program goal is to select current high performing engineering and business professionals with the desire to become leaders and train them for leadership positions within their company. One of the key components of the program is community service. The SI is committed to giving back to the community through collective brainpower, man hours, or resources. Spires's participants with expertise in engineering, geographic information systems and cybersecurity/information assistance will serve on the Planning and Advisory Committees in support of mentorship, classroom enrichment, work-based learning experiences, curriculum development, and program validation in Information Security.

The Academy is also securing a new school/business partnership with **SRC Inc.** that will include: job shadows, internships, guest lecturers and an annual college scholarship for a graduating minority student planning to pursue postsecondary education in Information Technology–CyberSecurity.

Co-curricular student organizations associated with this program of studies include Air Force Association's (AFA) CyberPatriot Competition, IEEE Student Club at Chantilly Academy (founded in 2009), SkillsUSA, and Future Business Leaders of America (FBLA).

Preparing Our Graduates for Work and Postsecondary Education Success

Virginia Workplace Readiness Skills (WRS) - Virginia Career Readiness Certification (CRC)

Need

The Commonwealth of Virginia recognizes that in order for our state to maintain its global competitiveness, Virginia must deliver the highest quality of goods and services at the most economical price point. In order for businesses to achieve this objective, they must hire the most capable and productive employees to join their work forces. Today, there is a considerable regional, statewide and national debate on the importance of workplace "soft" and technical skills and the development of key criteria for who will be hired, promoted or even, separated from employment.

According to "Workplace Readiness and Industry Credentials: What Do State High School Policy Makers Need to Know", a report by Robert D. Muller and Alexandra Beatty of Practical Strategy LLC, "Some employers say they are not only dissatisfied with the basic academic and technical skills of job seekers but also find that applicants and new hires lack the more general habits and competencies that characterize effective employees. Survey data and other research show that employers believe that recent high school graduates often lack skills such as punctuality, communication, problem solving, and willingness to accept supervision – in addition to appropriate levels of literacy and numeracy – that are recognized as critical both to an effective workplace and to an individual's successful entry into the world of work."

According to the National Association of Manufacturers, "every student should graduate from high school ready for work AND ready for college. CTE programs should require the ACT National Career Readiness Certificate to ensure graduates have the core academic and workplace competencies for employment." Employers who use

the CRC as a pre-screening tool, either posted in the job listing or specified on referrals from one-stop career centers or other employment agencies, benefit because they only interview candidates whose skill levels have been documented and certified. This raises the interviewing process to a new level with the elimination of basic skills testing or subjective assessment through the résumé or conversation.

According to Jan Bray, executive director, Association for Career and Technical Education (ACTE), "The National Career Readiness Certificate is an excellent way to assist career and technical educators in preparing the current and future workforce. Developing a skilled workforce—one that has the ability to quickly adapt to new and changing workforce demands—is a primary focus of the career and technical education programs offered through the nation's secondary and postsecondary public schools. Identifying, quantifying, and assessing those skills necessary to prepare the workforce is critical to career and technical education."

Program Description

The New Commonwealth Governor's STEM Academy is committed to fostering the Workplace Readiness Skills and competencies embedded in each VDoE approved CTE course curriculum offered to its students. The New Commonwealth Governor's STEM Academy will offer work readiness credentialing for soft and technical skills through the adoption of Virginia Workplace Readiness Skills Certification (WRS) and Virginia Career Readiness Certification (CRC) assessments for all program completers.

Virginia Workplace Readiness Skills (WRS)

The New Commonwealth Governor's STEM Academy will integrate WRS as a "soft" skill assessment for all program completing seniors; 500 – 600 students will participate in assessments annually. The WRS will test student competencies in the following 21 skill areas:

1. Positive Work Ethic
2. Integrity
3. Teamwork
4. Self-Representation
5. Diversity Awareness
6. Conflict Resolution
7. Creativity and Resourcefulness
8. Speaking and Listening
9. Reading and Writing
10. Critical Thinking and Problem Solving
11. Health and Safety
12. Organizations, Systems, and Climates
13. Lifelong Learning
14. Job Acquisition and Advancement
15. Time, Task, and Resource Management
16. Mathematics
17. Customer Service
18. Job-Specific Technologies
19. Information Technology
20. Internet Use and Security
21. Telecommunications

Students may earn a student-selected verified credit by passing this new examination while earning a standard credit in a related career and technical education course. Priority testing should be directed toward students who are graduating CTE completers. A certificate will be awarded to all students who pass the "Workplace Readiness Skills for the Commonwealth Examination."

Virginia Career Readiness Certification (CRC)

The New Commonwealth Governor's STEM Academy will integrate CRC as a technical skill assessment option for all seniors. In year two, seniors enrolled in Engineering Technology, Information Technology – CyberSecurity and Medical Assistant 2 will pilot the new CRC certification initiative; approximately 100 graduating seniors.

Today, the CRC is an industry validated and nationally recognized portable skills credential, assuring employers that a job applicant actually has the basic skills they seek.

The CRC measures the following skills:

- Problem solving, critical thinking, reading and using work-related text
- Applying information from workplace documents to solve problems
- Applying mathematical reasoning to work-related problems
- Setting up and performing work-related mathematical calculations
- Locating, synthesizing, and applying information that is presented graphically; comparing, summarizing, and analyzing information presented in multiple related graphics.

Companies that have used the WorkKeys® test have seen reduced turnover among employees, as well as improved productivity and training efficiency. In Fairfax County and Northern Virginia, Inova Health System is the largest private sector employer. In their hiring of entry-level allied health workers, Inova reported a turnover rate of 49 percent of these newly-hired entry-level employees because they did not possess the requisite soft skills and technical skills to perform their duties. Nor were their traditional human resources hiring practices able to identify successful entry-level candidates.

Inova integrated CRC into its human resources hiring practices and experienced significant results: there was a reduction in their turnover rate from 49 percent to 13 percent they experienced a savings of $1.2 million per 25 percent reduction in turnover; they realized a more efficient application process – and all resulted in improved patient care in their hospitals, free-standing emergency and outpatient centers. Other regional organizations who have integrated the CRC into their hiring practices include Washington Gas, Dominion Power, Lockheed Martin and Northrop Grumman.

The CRC is a powerful economic development tool. For an employer who may be contemplating moving his/her business to a new state or expanding an existing company, the skill level of the available work force is often a deciding factor. The CRC's Virginia Skills Bank is a searchable database yielding data on the varied skill levels of Virginia's work force for potential employers seeking to hire qualified workers.

On September 2, 2011, the Virginia Superintendent of Public Instruction issued Superintendent's Memo #243-11 on Virginia Career Readiness Assessments that both lowers the cost of CRC Certification per assessment, and outlines opportunities for high school students who complete a CTE program to take the CRC.

CRC Successful Program Completion - Certification

Students will be eligible to earn three levels of Career Readiness Certificates based on their test performance; Bronze, Silver or Gold. Working with the FCPS Office of Adult & Community Education (ACE), The New Commonwealth Governor's STEM Academy will pilot a secondary school-based WorkKeys Assessment Center in partnership with NOVA.

CRC High School Implementation Plan

Implementation Timeline	
September	• Classroom/School presentations to introduce KeyTrain/CRC. • Parent presentations will be conducted to familiarize them with the process.
October-November	• Students will take pretests in all three courses, one hour for each pretest is recommended.
December-January	• Students will meet individually with career coach to review pretest results and individual assignments.
January-March	• Students will continue to work on individual lessons during any allocated class time and Learning Seminars.
April	• Individual meeting with career coach to discuss progress and remediation if necessary.
May-June	• Eligible students will sit for the official WorkKeys CRC. Students will have same-day results. • Résumé workshops will be offered to show students how to optimize their certifications and market themselves to potential employers.

To ensure successful implementation of the WRS and CRC all stakeholders will be educated in the process and value of these assessments. The Academy's Career Experience Specialist will develop an educational campaign to be supported by the Dulles Regional Chamber of Commerce and a calendar of presentations/visits with area employers. Informational program brochures and ancillary materials will be created and provided to the students, parents, faculty and regional employers.

Scoring on each of the assessments will be evaluated; remediation programs will be developed to advance certification outcomes for years two and beyond. Remediation will be offered to students during non-class hours on weekdays and Saturdays.

Work-Based Experience

The New Commonwealth Governor's STEM Academy will continue to be a great place *to discover a career*. We are committed to providing our students with a world-class academic and technical education that incorporates classroom learning and "real-world" work-based learning experiences. A full-time Career Experience Specialist works closely with Academy faculty, local industry, business, government, and centers of postsecondary and higher education to develop an annual program of high value experiential learning opportunities that foster career exploration and preparation. Current program offerings include:

Internships The Academy Career Experience Internship Program offers high-achieving juniors and seniors opportunities to advance classroom knowledge and gain "real-world" application experience in the workplace. Internships may be paid or unpaid; one to three days per week. Students are responsible for transportation to their internship sites.

Internship Requirements: In addition to maintaining a satisfactory attendance rate and a minimum 2.5 overall GPA, successful applicants maintain a minimum B average in their Academy courses. Students communicate their interest in making application to

the Career Experience Internship Program with their Academy teacher and request a formal application from the Office of the Career Experience Specialist.

Recent Internship partners include:

- Northrop Grumman Information Systems
- Department of Information Technology, Fairfax County Public Schools
- Department of Vehicle Services, Fairfax County Government
- Fairfax County Police and Sheriff's Departments
- area hospitals
- informational technology corporations
- small businesses
- private health care practices
- professional associations
- federal government agencies
- other private sector employers.

Career Shadow Program National Groundhog Job Shadow Day is presented each year in early February in collaboration with the Northern Virginia Technology Council (NVTC). Area businesses and corporations host Academy students at their workplaces. Matched with a professional for the day, students gain valuable information on a specific career of interest, an average business workday, educational pathways, and a potential future employer.

Academy Entrepreneurial Businesses Academy programs operate entrepreneurial businesses that provide students opportunities to perform jobs and services for external

clients and customers. These programs include Animal Science, Automotive Collision, Automotive Technology, Computer Systems Technology–A+, Cosmetology, and Culinary Arts.

Additional high-value Career Experience programs include:

Workshops The Academy offers students a variety of skill-building workshops. Topics include Career Planning, Résumé Preparation, Interviewing, and Personal Financial Management in "Reality Store" and the "ABC's of Credit." The latter two programs are offered in partnership with the Northwest Federal Credit Union.

Classroom Speakers Series Each year, classroom learning and career exploration is enhanced by special guest presentations made by regional and national industry leaders, science and technology professionals, specific career field experts, and current events speakers. The Academy will optimize the use of its video teleconferencing (VTC) technology to provide distance education through "live" classroom lectures by university faculty; ODU has VTC capabilities.

Field Trips and Tours Organized by teachers and the Career Experience Specialist, field trips and tours provide off-site and hands-on learning experiences. In recent years, Academy students have visited area colleges and universities; trade and industry schools; county, state, and federal government agencies; small businesses; local industry; medical/healthcare facilities; dental and veterinary practices; law enforcement agencies; and businesses in the hospitality industry.

Special Events Academy students have opportunities to participate in a number of career events, including "21st Century Careers in Medicine & Health Sciences"; "21st Century Careers in Construction"; National Engineers Week Celebration; Engineering EXPO & Engineering College Fair; Annual Career Fair; Academy Awards Ceremonies; and local, state and national conferences.

Instructional Schedule

The Academy's instructional schedule maximizes instructional time on the traditional high school every other day 90 minutes/class block schedule. The Academy schedule has been modified, resulting in three class-scheduling variations:

- One-credit courses that meet every other day for 90 minutes
- Two-credit courses that meet every day during either the morning, mid-morning or afternoon sessions for 90 minutes each day
- Two-credit courses offered every other day that are double-blocked 180 minutes every other day. (This model maximizes lecture and "hands-on" practical application lab hours.)

(See Appendix F – Chantilly Academy – Bell Schedule)

Infrastructure – Materials and Equipment

The New Commonwealth Governor's STEM Academy is co-located with Chantilly High School as a "school within a school." Chantilly High School is one of the division's most comprehensive high schools and offers specialized classrooms and laboratories that meet the "hands-on" educational, technological, and practical needs of a STEM Academy.

The original building was completed in 1976, and experienced capital improvement completed in 1996. Today, the physical plant is well maintained and provides the requisite classroom and laboratory space to support growing engineering technology and information technology programs in addition to the current programs offered.

The Academy's facilities include information technology and engineering labs equipped with standard prototyping labs that feature industrial material and processing tools and equipment.

The Academy currently incorporates 330 desktop and laptop computer workstations and an additional 78 laptop computers that are resident on three mobile computer carts to extend computer access to all classrooms. These critical information technology resources include an AutoCAD lab with 28 student workstations, classroom computer workstations, and servers that support student work separate from and in addition to the FCPS division's network, and two Information Technology classrooms (Computer Systems Technology, Cisco and Network Administration) that support lecture presentations and "hands-on" learning.

The NCGSA will have access to large presentation venues with its high school auditorium and lecture hall that will support formal student presentations, academic seminars, and special guest speakers for up to 600 students.

In 2011, Chantilly High School established an interactive video conferencing classroom that enables "real-time" Tandberg/Cisco video conferencing programs with special guest lecturers from distant college campuses, manufacturing centers, corporate centers, and connectivity with high schools elsewhere in the United States and abroad.

Internal Evaluation Process

The New Commonwealth Governor's STEM Academy Planning Committee, made up of representatives from K-12, postsecondary and higher education, business, and industry, is integral to the identification of strategic regional and statewide work force development requirements. The development of the Academy's new initiatives in Engineering Technology, Information Technology–Cybersecurity, and Career Readiness Certification will be managed by individual subcommittees for each of these initiatives.

The Committee will help to assure that our young people are prepared for high value, high demand sustainable careers that will assure the economic vitality of our region and the Commonwealth of Virginia.

In recognition of the individuals and their respective organizations represented on the Planning Committee, their commitments to the success of our Academy and contributions to the development of our Governor's Academy proposal, we have recommended that this cadre of stakeholders form the Advisory Committee. Each member has accepted this expanded role in support of the New Commonwealth Governor's STEM Academy.

The Advisory Committee will convene annually in August prior to the opening of the new academic year and prior to the close of the academic year in May to evaluate curriculum and provide oversight on rigor and relevance of our programs. Their agenda will be driven by the academic needs of our students, the ongoing needs for professional development for faculty, and work force requirements. Subcommittees for each of the new program areas will continue their efforts through additional meetings and virtual work groups.

A framework for assessment will be developed for use by the Advisory Committee. Survey instruments will incorporate student, parent, faculty, and employer feedback. The Advisory Committee will lead efforts for internal evaluation. Evaluation data will include a comprehensive review of student achievement (industry certifications, licenses earned, and dual enrollment credits awarded); postsecondary tracking of alumni; and student, parent and teacher survey evaluations. Working with Academy leadership, the Advisory Committee will evaluate program effectiveness and monitor progress to the achievement of agreed upon goals and objectives for the Governor's Academy.

The findings of the annual review will be analyzed and reported to FCPS and the Virginia Department of Education. The findings will address student achievement, postsecondary student plans, progress on meeting the Academy's stated goals, and their alignment with strategic work force demands.

Sustainability of the New Commonwealth Governor's STEM Academy

The New Commonwealth Governor's STEM Academy will build on the successes of the Chantilly Academy and its current funding levels, which include Perkins federal funds and an allocation of division funds to support its educational mission. The New Commonwealth Governor's STEM Academy has an administrative staff with expertise in institutional development and fundraising in K–12 and higher education. In the past six years, more than $250,000 in grants and donations (external funding) have been secured to advance Chantilly Academy's curriculum, classrooms, and laboratories. Working with Academy leadership, The New Commonwealth Governor's STEM Academy Advisory Committee will further support the program though expanded business contacts and resource identification. These additional resources—both financial and in-kind—will help to assure the Academy's capacity to serve the programmatic needs of students and faculty.

Administrative Procedures

Partnerships

Chantilly Academy has excelled in its efforts to form meaningful partnerships with stakeholders in all sectors—postsecondary/higher education, industry and business and government—to advance Career & Technical Education. Numerous examples of the Academy's partnership initiatives have been cited in the *Introduction* and *Rationale* sections and elsewhere in this proposal.

With the shared goal of Academy students' successful transition to postsecondary training or higher education, work force, and/or a four-year university, the stakeholders that are represented on the Advisory Committee will develop an annual work plan that will address opportunities for collaboration in curriculum development, classroom/laboratory improvements, work-based experiences for students, professional development, student employment, and scholarship opportunities for Academy graduates.

The Academy will continue to seek opportunities to join with postsecondary training and higher education partners in pursuit of private and government grants to complement public funding sources for Academy programs.

Student Recruitment, Selection Criteria and Admissions

Academy courses are offered to all students who will be classified as juniors or seniors for the upcoming school year. Juniors are given first priority for enrollment in two-year programs; seniors are considered first priority in one-year programs. Several Academy programs offer enrollment to outstanding and academically advanced sophomores, including Engineering, Information Technology. There is a robust annual student recruitment program to encourage Career & Technical Education.

Beginning in January of each year, the **Academy's Counselor visits the Departments of Student Services at each of the 20 feeder high schools** to brief directors and counselors on plans for the new academic year, application procedures, and timelines for admission. The Academy also participates in an annual CTE central office special

event, **"Camp CTE,"** that recruits school counselors from middle, high, and secondary schools to tour each of the division's CTE Academies to gain first-hand and "hands-on" experience in a variety of CTE programs offered by the division.

In January-February of each year, Academy staff and faculty participate in **annual elective fairs at all feeder schools** that traditionally place students at the Academy. Currently enrolled students at individual feeder schools participate in the elective fairs to promote Academy programs at their base schools along with Academy program faculty.

Prospective students and parents are invited to visit the Academy during annual **Open House** recruitment programs, curriculum nights, and back-to-school night programs. Additionally, prospective students are invited to **visit the Academy** and sit in on courses of interest for enrollment. Base school counselors provide logistical support and instructions, visitor passes, and Academy bus scheduling for interested students. The Academy places **advertisements in base school newspapers** promoting Career & Technical Education and Academy programs.

Academy application packets are managed by base school counselors. They include application instructions and information on required documents: formal application form, student essay, attendance record, and school transcript. Applications are reviewed for completeness by base school counselors and are forwarded to the

Academy. The application deadline is in late March of each year. Incomplete applications are not processed and are returned to base school counselors.

A rubric has been developed to annually process nearly 2,000 student applications for 1,300 seats in Academy programs. The rubric considers student academic standing, attendance records, and personal statement on interest in Academy program. It also indicates whether a student has visited the Academy during one or more of the Academy's Open House programs. A waiting list is maintained for all oversubscribed Academy courses.

Code of Conduct and Attendance Policies

Student code of conduct at the Academy is set by the FCPS policy statement titled ***Student Rights and Responsibilities (SR&R)*** which is signed annually by all Academy students. They also sign an additional copy of the SR&R at their base high schools. The SR&R requires both student and parent signatures, and students are tested on key principles cited in the document.

The Appropriate Use of Fairfax County Public Schools' Network and Internet Resources (**Regulation 6410.13)** defines the a*cceptable use* educational objectives and security requirements for the use of Internet resources and network services by FCPS. This regulation covers all users of FCPS network services. The Acceptable Use Policy (AUP) is a contract signed by parents and students—guidelines for FCPS staff members and contractors—that sets the rules for using the FCPS network.

Parent Communications There is a minimum expectation that all teachers e-mail parents (and provide students) with an IGPro class progress report, a minimum of once between the first of the quarter and interim time, and once again between interim and the end of the quarter. Chantilly High School and Chantilly Academy teachers are required to provide bi-weekly grades sheets to the parents of all students.

Grading If a student is earning a grade of "D" or "F" at interim time or as a quarter grade, teachers must call and speak with the parent and document the date of the call (leaving a message is not considered parent contact). If a teacher chooses to contact the parent via e-mail, he or she must save the e-mail and the parent's response because evidence must be available that the parent received the teacher's e-mail communication. If a grade of D/F is issued on a report card, the teacher must complete/select a "comment" on the student's report card.

Attendance Teachers receive daily attendance data on their classes from the Academy's attendance officer. Teachers are the first line of action when working with student attendance. They are required to contact the student's home and speak with the parents of all students with attendance problems. If there is a language issue when calling a student's home, the Academy's ESOL Support Team may provide language service assistance. The Academy counselor is available to support teacher contacts, by locating a working telephone number for parents and responding to parents' questions on student attendance and behavior.

Transportation

Student transportation requests are processed at the Academy. FCPS feeder bus transportation is provided from 19 division high schools based on a minimum enrollment of 5 students per session from a high school to the Academy. Additionally, limited student parking is available and permits are awarded through a lottery drawing of all student parking requests. Priority student parking consideration is given to students from feeder schools that are unable to offer FCPS bus transportation to and from the Academy.

Faculty Recruitment/Selection/Assignment

The New Commonwealth Governor's STEM Academy is tied to the procedures outlined by the Human Resources Department of Fairfax County Public Schools to identify, recruit, select, and assign faculty members for Academy teaching appointments. Interviewing panels for faculty positions may include the Coordinator of Career and Technical Education, the Academy's Administrator, individual CTE Program Managers, and other faculty/staff. Selection for teaching appointments will take into consideration the criteria for acceptance by NOVA as an adjunct faculty member to optimize the dual enrollment program at the Academy.

Staff Development

Fairfax County Public Schools are committed to professional staff development and offers a comprehensive staff development program to advance best practices and promote educational research, use of instructional technologies, and individualized instruction methodologies that support achievement for all students. FCPS offers in-

service programs throughout the school year within CTE program disciplines and overall as a professional learning community.

In preparation for the expansion of the Academy's career pathways in Engineering Technology and Information Technology - CyberSecurity, faculty members will benefit from mentorship by secondary/higher education faculty, and subject matter experts in industry and government.

The Academy will continue a strong commitment to its program of Professional Learning Communities (PLC) and weekly scheduled staff development time built into its school day on Thursdays of each week for forty-five minutes.

Staff Evaluation

The New Commonwealth Governor's STEM Academy will utilize the guidelines and procedures established by FCPS and outlined in the division's policy manual in the review/evaluation of all faculty and staff. The major components of the process include the following: the five standards of performance, the performance guidelines and expectations, the evaluation cycle, assessment and evaluation procedures, the self-assessment, midyear assessment, final evaluation and the intervention process.

The assessment and evaluation process for all teacher-scale employees is based on the belief that evaluation is a positive experience for encouraging professional growth and an essential element in the improvement of instruction.

The process accomplishes the following:

- Offers professional growth opportunities for all teachers
- Provides support for teachers and administrators
- Recognizes teaching performance that exceeds guidelines/expectations
- Gives special assistance to teachers with conditional reappointments
- Identifies teachers not meeting guidelines/expectations.

The five **standards of performance** for teachers are used by evaluators and teachers in the assessment and evaluation process. These standards state what is expected of teachers in Fairfax County Public Schools. All standards are essential to successful performance. Guidelines and expectations accompany standards and provide a framework for how each standard can be met. The standards of performance are Planning and Assessment, Instruction, Learning Environment, Human Relations and Communication Skills, and Professionalism.

Student, Parent, and Community Investment

Student, parent, and community investment is deeply rooted in the CTE educational mission at Chantilly Academy. There is a heightened understanding that all stakeholders must work together if we are to realize student achievement and effectively respond to our work force development challenge in the region and across our Commonwealth.

The existing Engineering program at Chantilly Academy has been the beneficiary of countless hours of volunteer support from professional women in engineering through their service as one-on-one mentors for Girls Exploring Engineering - GE^2. Over the past

five years, more than 200 female professional engineers from the public and private sectors have recorded more than 3,000 volunteer hours in GE^2 mentorship that has fostered engineering and STEM career exploration.

Each year in late February, engineers in the community join with Academy engineering students to celebrate National Engineers Week. Their sponsoring employers have included:

- Micron Technology
- NOBLIS
- Lockheed Martin
- Inova Health System–Technical Dynamics Inc.
- The National Reconnaissance Office
- Patton Harris and Rust
- Atkins Global
- James Madison University
- Northrop Grumman
- Virginia Technical Institute and State University
- Dewberry
- The George Washington University
- University of Maryland–Baltimore and College Park Campuses
- US Naval Research Laboratory–Carderock Division

Public and private sector engineering workplaces have sponsored our Annual Engineering EXPO & Engineering College Fair, job shadows, internships, and

Independent Research–Engineering placements for our seniors. Local corporations have made annual investments in engineering co-curricular activities, including FIRST Robotics–Chantilly Robotics 612, IEEE Student Club, TSA, and the NASA Student Launch Initiative.

The 2011 Engineering EXPO & Engineering College Fair welcomed faculty, current students and alumni from 15 engineering schools in Virginia and elsewhere in the country and included:

- Auburn University
- George Mason University
- George Washington University
- James Madison University
- Johns Hopkins University
- Norfolk State University
- Northern Virginia Community College
- Old Dominion University
- Olin College of Engineering
- Purdue University
- University of Maryland–College Park
- Villanova University
- Virginia Commonwealth University
- Virginia Polytechnic Institute and State University
- West Virginia University

Corporate and government exhibitors at the EXPO included:

- Atkins Global
- ExxonMobil
- L-3 Global Security & Engineering Solutions
- Micron Technology
- Mitre Corporation
- NASA Headquarters
- NOBLIS
- Northrop Grumman Information Systems
- The Office of the Undersecretary of Defense for Acquisition
- Technology and Logistics, SRC Inc.
- The SI Organization
- United States Department of Transportation
- Water Environment Federation.

Chantilly Academy parents are fully engaged in the engineering learning experience. They serve as mentors and chaperones for FIRST Robotics, and NASA's Student Launch Initiative that requires extensive work with NASA engineers. Last year, Academy students and parent chaperones travelled to NASA Marshall Space Flight Center, in Huntsville, Alabama, to launch their student-designed and built high-powered rocket.

As evidence of their growing commitment, Academy parents have recently formed a Chantilly Robotics 612 Booster Club and have assumed the major leadership role for this

extra-curricular activity that annually engages more than 60 engineering students in the annual FIRST Robotics Challenge Competition.

In Information Technology, students and parent chaperones and community mentors are engaged in their second year of the Air Force Association's CyberPatriot Competition. One All Services Division team of AFJROTC cadets and four Open Division Teams of engineering, computer science, and information technology students (total students 57) participated in the 2012 CyberPatriot IV Competition. Corporate cybersecurity professionals from Northrop Grumman and SRC Inc., serving as mentors and volunteers from the Air Force Association Gabriel Chapter in Northern Virginia, complemented six faculty and staff sponsors.

Insurance Documentation

Fairfax County Public Schools maintains a comprehensive program of insurance/self-insurance for its property and liability exposures. Fairfax County Public Schools does not provide individual health insurance to students but makes a voluntary student insurance program available for purchase through an outside vendor. Fairfax County Public Schools is insured by the Virginia Municipal Liability Pool Insurance Program for property, liability, and auto insurance (See Appendix G).

Budget Narrative

The New Commonwealth Governor's STEM Academy builds on the Academy's current CTE programs and optimizes existing qualified faculty, classroom, and laboratory resources. In the light of current fiscal realities for our school division, every effort has

been made to enrich program offerings within existing Academy budget parameters and optimize strong working relationships, philanthropic support, and in-kind donations from postsecondary training and higher education, industry and government, and trade associations. For this proposal, Micron Technology Foundation, which has funded engineering education at Chantilly Academy for the past five years, will continue its corporate support for the existing Engineering program and the new Engineering Technology program area. Other organizations will be approached to provide funding, as well as volunteers and other vital programmatic resources. One of the strengths of the Chantilly Academy has been the willingness of area businesses and organizations to contribute in many ways to achieve the educational goals of the Academy, and this high level of regional commitment to the success of the program is expected to continue. In-kind contributions from our partners, including participation in the Advisory Committee—although anticipated as being significant investments of time on the part of the committee members—have not been valued for this application.

Personnel Each of the following four new, dual enrolled Academy courses requires an additional 0.17 FTE position; the salaries will be paid by FCPS through the re-allocation of existing non-ratio Academy staffing.

Personnel		
Course Title	**FTE**	**Salary**
ETR 113 DC Fundamentals	0.17	$9,001.87
ETR 106 Basic Programming	0.17	$9,001.87
ITN 120 Wireless Network Administration	0.17	$9,001.87
ITN 260 Network Security Basics	0.17	$9,001.87
Total Salaries		**$36,007.48**

The personnel costs were calculated based on the following assumptions:

- Costing is for a standard FCPS teaching contract of 194 days and assumes a teacher with a bachelor's degree and 15 years of experience at pay step 7.
- The position is for FY 2014 (July 2013 to June 2014).
- The budget assumes an annual cost-of-living increase of two percent.

Benefits Total benefits for the four 0.17 FTE instructor positions, based on FY 2013's average benefit rate of 43.8 percent, are estimated at $15,771.28.

Staff Development If this proposal is accepted, $3,000 of the total $5,000 awarded to FCPS by the Commonwealth of Virginia will be used to support professional development opportunities that will be determined by the needs of the program and instructional personnel.

Materials and Supplies Funding for anticipated materials and supplies will come from three sources:

- Perkins—Perkins currently funds testing for NOCTI workplace readiness. These same funds will be re-allocated to testing for CRC Certifications of up to 600 seniors at $30 each for an estimated cost of $18,000.
- Other Funds
    - Commonwealth of Virginia—If this proposal is accepted, $2,000 of the $5,000 awarded from the state shall be used to fund VCATS Manufacturing Specialist/Technician certifications for an estimated 20 students annually at $100 per certification.

- Micron Technology Foundation—Micron Technology Foundation has donated $4,000 toward the Engineering-Technology-Advanced Manufacturing program.

- Chantilly Academy—The Academy's annual Operating Budget (Perkins & FCPS Division Funding) of $58,918.83 in SY 2011–2012 will provide classroom and laboratory resources for up to $10,000 per school year. Local textbook funds will cover expenses for adopted textbooks for new courses.

The following chart summarizes Materials and Supplies by funding source:

Materials and Supplies				
Item	**Perkins**	**Commonwealth of Virginia**	**Micron Technology Foundation**	**Chantilly Academy**
CRC Certifications	$18,000.00	$0.00	$0.00	$0.00
VCATS Manufacturing Certifications	$0.00	$2,000.00	$0.00	$0.00
Miscellanous Materials and Supplies	$0.00	$0.00	$4,000.00	$10,000.00
Total by Source of Funding	$18,000.00	$2,000.00	$4,000.00	$10,000.00

Summary

Academy Administration, faculty, and staff of the Chantilly Academy; FCPS CTE leadership; and the distinguished members of the New Commonwealth Governor's STEM Academy Advisory Committee share a strong commitment to forging a new model for world-class secondary education in two relevant, high value STEM careers: Engineering Technology and Information Technology–Cybersecurity. All equally recognize the importance of their efforts to assure that the Academy prepare all of its graduates for a successful entrance to the workplace and postsecondary education through Workplace Readiness Skills (WRS) Certification and Career Readiness Certification (CRC).

This collaboration will be a major proponent of curriculum innovation, work-based learning experiences for students; professional development for teachers; effective

student, parent, and general community education on career pathways in Engineering Technology and Information Technology–Cybersecurity; and postsecondary and higher education planning.

The goal of the NCGSA will be to optimize the role that CTE programs have played and will continue to play in student retention and four year on-time graduation, and in the percentage of our graduates enrolling in postsecondary education at Northern Virginia Community College, Old Dominion University, Norfolk State University, and other distinguished centers of postsecondary training and higher education in Virginia.

The New Commonwealth Governor's STEM Academy will serve as an innovator and incubator of new programs and educational technology and will be an active ambassador on "the art of the possible" in Career & Technical Education that advances STEM education across the Commonwealth of Virginia and our nation.

Appendices

Appendix A:
Planning and Advisory Committee Members

Planning & Advisory Committee
New Commonwealth Governor's STEM Academy
(Chantilly Academy)

Roster of Members

Dr. Zacharias Albin
Chair, Department of Engineering
College of Science, Engineering & Technology
Norfolk State University

Dr. Carray Banks, Jr.
Department Head, Technology Department
College of Science, Engineering & Technology
Norfolk State University

Dr. Bruce Bowman
Dean, Division for Science, Technology & Business
Northern Virginia Community College – Alexandria Campus

Ruthe D. Brown
Director, Dual Enrollment & Tech Prep
Northern Virginia Community College

Tony Casipit
Manager, Technology Education
Fairfax County Public Schools

Eileen Curtis
President & CEO
Dulles Regional Chamber of Commerce

Patti DeiTos, MSN, RN-BC, PWD
Curriculum Director, Military to Medicine®
Inova Health System

Katherine A. DeRosear
Director of Workforce Development, Virginia Manufacturers Association
Executive Director, Virginia Council on Advanced Technology Skills
Virginia Manufacturers Association

Lindsay Diles
Community Relations Representative
Northrop Grumman Information Systems

Elizabeth Downey
Coordinator, Career & Technical Education
Fairfax County Public Schools

Kevin Doyle
Director, Cyber Programs
SRC Inc.

Craig Howerter
CyberSecurity Representative
Office of Under Secretary of Defense
Acquisition, Technology and Logistics
Department of Defense – U.S. Pentagon

Doug Huneycutt
Chief Technologist, Cybersecurity and Net Centric Technologies
The SI Organization

Teresa Johnson
Principal
Chantilly High School - Fairfax County Public Schools

Ray Kinard
Director, Cyber Academy
Northrop Grumman Information Systems

Dr. Darius "Dee" Martin
Dean, Division of Science and Applied Technologies
Northern Virginia Community College – Manassas Campus

Megan McLaughlin
Workforce Development Manager
Micron Technology, Inc.

Carlos Niederstrasser
Senior Principal Systems Engineer
Coordinator - University Relations & Community Outreach
Orbital Sciences Corporation

Joan Ozdogan
Career Experience Specialist
Chantilly Academy - Fairfax County Public Schools

Professor Charlene Phillips
Assistant Division Dean for Information Technology
Northern Virginia Community College – Manassas Campus

Sharon N. Robertson
Associate Vice President for Academy Services
Northern Virginia Community College

Jeff Schlegel
Operations Senior Manager, MS2 - Manassas
Lockheed Martin Corporation

Zuzana Steen
University and Academic Relations Manager
Micron Technology, Inc.

Mileta M. Tomovic, Ph.D.
Professor and Department Chair
Department of Engineering Technology
F. Batten College of Engineering and Technology
Old Dominion University

Douglas R. Wright
Administrator, Chantilly Academy
Assistant Principal, Chantilly High School
Fairfax County Public Schools

Advisory Committee Certification

The New Commonwealth Governor's Academy

Advisory Committee Member Agreement

Key to the success of the New Commonwealth Governor's Academy (Fairfax County Public Schools) is an actively engaged and knowledgeable Advisory Committee of representatives from industry, business, postsecondary and higher education and government.

As a member of the Advisory Committee, I will effectively:

1. Assist in the development of Academy programs; goals and objectives.
2. Contribute to the Academy's awareness of the strategic workforce needs of the region and education/training requirements.
3. Evaluate current classroom and laboratory facilities to assure achievement of learning objectives.
4. Provide stewardship for the oversight of programs and course objectives to assure alignment with postsecondary/higher education and the regional workforce.
5. Provide ongoing evaluation of the programs, courses and co-curricular initiatives to assure achievement of the Academy's critical educational mission.
6. Serve as an Ambassador of the New Commonwealth Governor's Academy to the general community, business/industry and government.

Name: DR. SACHARIA ALBIN

Title: PROFESSOR & CHAIR

School/Institution/Organization: DEPT. OF ENGINEERING NORFOLK STATE UNIVERSITY

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

Allen S

(Signature)

7/9/12

(Date)

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Name: Dr. Carray Banks, Jr.

Title: Department Head, Department of Technology

School/Institution/Organization: Norfolk State University

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Carray Banks Jr. 2/17/2012

(Signature) *(Date)*

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Name: BRUCE A. BOWMAN

Title: DEAN, DIVISION OF SCIENCE, TECHNOLOGY & BUSINESS

School/Institution/Organization: NORTHERN VIRGINIA COMMUNITY COLLEGE

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

Bruce A. Bowman — 16 FEB 2012

(Signature) *(Date)*

Advisory Committee Certification

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Name: Ruthe D. Brown

Title: Director, Dual Enrollment

School/Institution/Organization: NOVA

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

Ruthe D. Brown — 2/17/12

(Signature) *(Date)*

Advisory Committee Certification

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Name: Tony Cuccipiti

Title: Program Manager Technology + Engineering Education

School/Institution/Organization: Fairfax County Public Schools

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

(Signature)

13 Feb 2012

(Date)

Advisory Committee Certification

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Name: Eileen Curtis

Title: President

School/Institution/Organization: Dulles Regional Chamber

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

Eileen Curtis — *(Signature)*

2/16/12 — *(Date)*

Advisory Committee Certification

The New Commonwealth Governor's Academy

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5. Provide ongoing evaluation of the programs, courses and co-curricular initiatives to assure achievement of the Academy's critical values and vision
6. Serve as an Ambassador of the New Commonwealth Governor's Academy to the general community, business/industry and government.

Name: Patricia DeiTos

Title: Curriculum Director, Military to Medicine Program

School/Institution/Organization: Inova Health System

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

(Signature) February 9, 2012 (Date)

Advisory Committee Certification

The New Commonwealth Governor's Academy

Advisory Committee Member Agreement

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5. Provide ongoing evaluation of the programs, courses and co-curricular initiatives to assure achievement of the Academy's critical educational mission.
6. Serve as an Ambassador of the New Commonwealth Governor's Academy to the general community, business/industry and government.

Name: Katherine A. DeRosear

Title: Director of Workforce Development

School/Institution/Organization: Virginia Manufacturers Association

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

Katherine A. DeRosear

(Signature)

2-14-12

(Date)

Advisory Committee Certification

The New Commonwealth Governor's Academy

Advisory Committee Member Agreement

Key to the success of the New Commonwealth Governor's Academy (Fairfax County Public Schools) is an actively engaged and knowledgeable Advisory Committee of representatives from industry, business, postsecondary and higher education and government.

As a member of the Advisory Committee, I will effectively:

1. Assist in the development of Academy programs goals and objectives.
2. Contribute to the Academy's awareness of the strategic workforce needs of the region and education/training requirements.
3. Evaluate current classroom and laboratory facilities to assure achievement of learning objectives.
4. Provide stewardship for the oversight of programs and course objectives to assure alignment with postsecondary/higher education and the regional workforce.
5. Provide ongoing evaluation of the programs, courses and co-curricular initiatives to assure achievement of the Academy's critical educational mission.
6. Serve as an Ambassador of the New Commonwealth Governor's Academy to the general community, business/industry and government.

Name: LINDSAY DILES

Title: Community Relations Rep

School/Institution/Organization: NORTHROP GRUMMAN

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

(Signature)

2/14/12

(Date)

Advisory Committee Certification

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6. Serve as an Ambassador of the New Commonwealth Governor's Academy to the general community, business/industry and government.

Name: Elizabeth Downey

Title: Coordinator, CTE

School/Institution/Organization: FCPS

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

Elizabeth Downey (Signature)

12-14-2012 (Date)

Advisory Committee Certification

The New Commonwealth Governor's Academy

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Name: KEVIN J. DOYLE

Title: DIRECTOR, CYBER PROGRAMS

School/Institution/Organization: SRC, Incorporated

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

Kevin J Doyle
(Signature)

Feb 16, 2012
(Date)

OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

ACQUISITION
TECHNOLOGY
AND LOGISTICS

February 15, 2012

Mr. Douglas Wright
Administrator
Chantilly Academy
4201 Stringfellow Road
Chantilly, Virginia 20151

Dear Mr. Wright:

Thank you for the invitation to participate with your new academic initiative in support of CyberSecurity education and careers at the New Commonwealth Governor's Academy. The Department of Defense has operational organizations that establish, operate, maintain and defend networks and conduct full-spectrum operations in cyberspace.

We hope that your current and future Information Technology – CyberSecurity students will consider joining our government workforce in the future. Congratulations to your students, faculty and mentors on taking two Chantilly Academy CyberPatriot teams all the way to the 2012 National Semi-Finals.

I will serve as your Government Representative Contact on all CyberSecurity issues. As this Representative, we will share our views of CyberSecurity to your Advisory Committee and help enrich your Information Technology – CyberSecurity education program. Additionally in this capacity, I will provide outreach to other Government Agencies to identify guest speakers and their agency's insights into CyberSecurity.

We wish you the best in gaining this new stature within Virginia's K12 educational community and plan to actively contribute to its success. We are indeed honored to be invited to participate along with the numerous colleges and organizations that you have gathered to support this critical information technology and engineering challenge facing our nation. Thank you for considering us among the elite in CyberSecurity.

Sincerely,

Craig Howerter

Craig Howerter
OUSD(AT&L)ARA
CyberSecurity Representative

cc: Mr. Philip D. Rodgers
Joan Ozdogan, Chantilly Academy

Advisory Committee Certification

The New Commonwealth Governor's Academy

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Name: Douglas S. Huneycutt, Sr.

Title: Chief Technologist, Cybersecurity / Net Centric Technologies

School/Institution/Organization: The SI Organization, Inc.

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

Douglas S. Huneycutt, Sr. — 13 February 2012

(Signature) *(Date)*

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6. Serve as an Ambassador of the New Commonwealth Governor's Academy to the general community, business/industry and government.

Name: Ms. Teresa Johnson

Title: Principal

School/Institution/Organization: Chantilly High School, Fairfax County Public Schools

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

Teresa L Johnson 2-24-12

(Signature) *(Date)*

Advisory Committee Certification

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Name: Raymond Kinard

Title: Director, Cyber Academy

School/Institution/Organization: Northrop Grumman Corp.

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(Signature)

02/13/2012

(Date)

Advisory Committee Certification

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Name: Daniel D. Martin

Title: Dean

School/Institution/Organization: NOVA/Manassas Campus

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(Signature) 02/16/12 (Date)

Advisory Committee Certification

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Name: Megan McLaughlin

Title: Workforce development Manager

School/Institution/Organization: Micron Technology

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

Megan McLaughlin — 2/10/12

(Signature) *(Date)*

Advisory Committee Certification

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Name: ___Carlos G. Niederstrasser_____

Title: _____Senior Principal Engineer_____

Area Distribution/Organization: _Orbital Sciences Corporation_____

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

_____ ___15 February 2012_____

(Signature) (Date)

Advisory Committee Certification

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Name: Joan K. Ozdogan

Title: Career Experience Specialist

School/Institution/Organization: Chantilly Academy, Fairfax County Public Schools

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

(Signature)

February 21, 2012

(Date)

Advisory Committee Certification

The New Commonwealth Governor's Academy

Advisory Committee Member Agreement

Key to the success of the New Commonwealth Governor's Academy (Patrick County Public Schools) is an actively engaged and knowledgeable Advisory Committee of representatives from industry, business, postsecondary and higher education and government.

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6. Serve as an Ambassador of the New Commonwealth Governor's Academy to the general community, business/industry and government.

Name: Dr. Charlene Phillips (cphillips@nrcc.edu)

Title: Assistant Division Dean, Computer Science and Information Tech.

School/Institution/Organization: Northern Virginia Community College

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for the distinguished designation.

Dr. Charlene Phillips 2/10/12

(Signature) (Date)

Advisory Committee Certification

The New Commonwealth Governor's Academy

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6. Serve as an Ambassador of the New Commonwealth Governor's Academy to the general community, business/industry and government.

Name: Sharon N. Robertson

Title: Associate Vice President for Academic Services

School/Institution/Organization: Northern Virginia Community College

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

Sharon N. Robertson
(Signature)

2/13/12
(Date)

Advisory Committee Certification

The New Commonwealth Governor's Academy

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Name: Jeff Schlegel

Title: Operations Site Manager – Manassas VA

School/Institution/Organization: Lockheed Martin – MS2

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

Jeff Schlegel 4/12/12

(Signature) (Date)

Advisory Committee Certification

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Name: Zuzana Steen

Title: University & Academic Relations Manager

School/Institution/Organization: Micron Technology, Inc

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

(Signature) 2/10/12 (Date)

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Name: Miljeta Tomovic

Title: Professor and Chair

School/Institution/Organization: Old Dominion University

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(Signature)

2/10/2012

(Date)

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Name: Douglas Wright

Title: Administrator

School/Institution/Organization: Chantilly Academy, Fairfax County Public Schools

My signature below certifies my willingness to be an active member on the Combined Planning and Advisory Committee for the proposed New Commonwealth Governor's Academy described in detail in the accompanying application for this distinguished designation.

Douglas R. Wright
(Signature)

2/23/12
(Date)

Appendix B:
Memorandums
of
Agreement

MEMORANDUM OF AGREEMENT

BETWEEN PARTNERS

AND THE NEW COMMONWEALTH GOVERNOR'S STEM ACADEMY
AT CHANTILLY HIGH SCHOOL

PARTNERS AND THE **NEW COMMONWEALTH GOVERNOR'S STEM ACADEMY AT CHANTILLY HIGH SCHOOL** agree to enter into this Agreement to support the Academy's Career & Technical Education programs that will advance STEM careers. The Academy will provide enhanced opportunities in the areas of Engineering, Engineering Technology and Information Technology, preparing participants for the 21st century work place, advanced technical training or entrance into college or university studies. A major focus of the program will be to significantly increase the development and assessment of workplace readiness skills, "college – going" readiness, industry certifications and work-based learning opportunities that directly correlate to the workforce needs of the region.

MOA TIMEFRAME:

The MEMORADUM OF AGREEMENT period shall be June 1, 2012 through June 30, 2013 and will be extended annually unless modified or terminated by a partner.

PARTNERS' AGREEMENTS:

The New Commonwealth Governor's STEM Academy agrees to:

- Facilitate the mission and workings of the Academy Advisory Committee
- Provide and monitor comprehensive programs of studies in the Engineering Technology, Information Technology, , and Engineering concentrations
- Assure that curriculum is aligned with career pathways that meet the requirements for the Governor's Exemplary Standard Award Program, Workplace Readiness Skills for the Commonwealth of Virginia, and the Virginia Standard or Advanced Diplomas with CTE Seals
- Facilitate the administration of industry certifications exams
- Deliver counseling and other services that promote STEM education, career pathways, educational advancement and employment opportunities
- Provide documentation and information as requested by the Department of Education
- Provide the required equipment, software, and technical support to facilitate instruction

Postsecondary Education Partners: Northern Virginia Community College, Old Dominion University Engineering Technology Program, Norfolk State University College of Science, Engineering and Technology, and future partners agree to:

- Designate an individual who will serve as a contact person to serve as a liaison on the Advisory Committee
- Provide opportunities for Dual Enrollment courses, if articulation agreements exist, for students to earn transferable college credit

Business Partners: Current and future partners agree to:

- Designate an individual who will serve as a contact person to serve as a liaison on the Advisory Committee or in the capacity as a resource contact for the program departments
- Provide subject matter expert resources and opportunities for Academy students to receive real world experiences through project-based learning, field trips, guest speakers, job-shadowing, internships, and mentorships.
- Provide guidance and expertise to staff and/or students to promote STEM related teaching and learning

By signing this agreement both institutions agree to be active partners and agree to abide by this agreement.

The New Commonwealth Governor's STEM Academy PARTNER

Douglas Wright 4/9/12

Academy Administrator Date

Virginia Manufacturers Association

Name of Partner Organization

Alice Scott 4/10/12

Signature Date

Director of Marketing + Member Services

Title

MEMORANDUM OF AGREEMENT

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The New Commonwealth Governor's STEM Academy **PARTNER**

Douglas Wright

Academy Administrator

4/9/12

Date

Northern Virginia Community College

Name of Partner Organization

Signature

4/9/12

Date

President

Title

MEMORANDUM OF AGREEMENT

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The New Commonwealth Governor's STEM Academy **PARTNER**

Douglas Wright

Academy Administrator

4/9/12

Date

The SI Organization, Inc.

Name of Partner Organization

Signature

4/9/2012

Date

Douglas S. Huneycutt, Sr.
Senior Cybersecurity Technologist

Title

MEMORANDUM OF AGREEMENT

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- Deliver counseling and other services that promote STEM education, career pathways, educational advancement and employment opportunities
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- Provide the required equipment, software, and technical support to facilitate instruction

Postsecondary Education Partners: Northern Virginia Community College, Old Dominion University Engineering Technology Program, Norfolk State University College of Science, Engineering and Technology, and future partners agree to:

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Business Partners: Current and future partners agree to:

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- Provide guidance and expertise to staff and/or students to promote STEM related teaching and learning

By signing this agreement both institutions agree to be active partners and agree to abide by this agreement.

The New Commonwealth Governor's STEM Academy PARTNER

Douglas Wright
Academy Administrator

4/9/12
Date

SRC Inc.

Name of Partner Organization

by: Melissa A. Boose
Signature

4/9/2012
Date

Corporate Contract Manager
Title

MEMORANDUM OF AGREEMENT

BETWEEN PARTNERS

AND THE NEW COMMONWEALTH GOVERNOR'S STEM ACADEMY AT CHANTILLY HIGH SCHOOL

PARTNERS AND THE **NEW COMMONWEALTH GOVERNOR'S STEM ACADEMY AT CHANTILLY HIGH SCHOOL** agree to enter into this Agreement to support the Academy's Career & Technical Education programs that will advance STEM careers. The Academy will provide enhanced opportunities in the areas of Engineering, Engineering Technology and Information Technology, preparing participants for the 21st century work place, advanced technical training or entrance into college or university studies. A major focus of the program will be to significantly increase the development and assessment of workplace readiness skills, "college – going" readiness, industry certifications and work-based learning opportunities that directly correlate to the workforce needs of the region.

MOA TIMEFRAME:

The MEMORADUM OF AGREEMENT period shall be June 1, 2012 through June 30, 2013 and will be extended annually unless modified or terminated by a partner.

PARTNERS' AGREEMENTS:

The New Commonwealth Governor's STEM Academy agrees to:

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The New Commonwealth Governor's STEM Academy **PARTNER**

Douglas Wright 4/9/12

Academy Administrator Date

Orbital Sciences Corporation

Name of Partner Organization

Signature __9 April 2012_____

Date

____Sr. Principal Engineer_____

Title

MEMORANDUM OF AGREEMENT

BETWEEN PARTNERS

AND THE NEW COMMONWEALTH GOVERNOR'S STEM ACADEMY AT CHANTILLY HIGH SCHOOL

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The New Commonwealth Governor's STEM Academy **PARTNER**

Douglas Wright
Academy Administrator

4/9/12
Date

Micron Technology

Name of Partner Organization

Signature

4/9/2012
Date

University and Academic Relations Manager
Title

MEMORANDUM OF AGREEMENT

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The New Commonwealth Governor's STEM Academy **PARTNER**

Douglas Wright
Academy Administrator

4/9/12
Date

Northrop Grumman Information Systems

Name of Partner Organization

Lynn Fulmore
Signature

4/9/12
Date

Director, Corporate Citizenship
Title

MEMORANDUM OF AGREEMENT

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The New Commonwealth Governor's STEM Academy **PARTNER**

Douglas Wright
Academy Administrator

4/9/12
Date

Dulles Regional Chamber of Commerce

Name of Partner Organization

Eileen Curtis
Signature

4/9/12
Date

President
Title

MEMORANDUM OF AGREEMENT

BETWEEN PARTNERS

AND THE NEW COMMONWEALTH GOVERNOR'S STEM ACADEMY
AT CHANTILLY HIGH SCHOOL

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The New Commonwealth Governor's STEM Academy **PARTNER**

Douglas Wright — 4/9/12

Academy Administrator — Date

Lockheed Martin Corporation

Name of Partner Organization

Jeff Dellegal — 4/9/2012

Signature — Date

MS2 Operations Site Lead – Manassas, VA

Title

Appendix C:

Letter of Assurance

From Fiscal Agent

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

STATEMENT OF ASSURANCES

The authorized signature on this page certifies to the Virginia Department of Education that the authorized official assures that:

1. The Advisory Committee has reviewed the provisions of *Administrative Procedures Guide for the Establishment of Governor's STEM Academies* outlined in the Guidance Manual, and understands that an implementation proposal will need to address these criteria and/or others approved by the Virginia Board of Education.

2. The Advisory Committee agrees to follow the guidelines set forth in the *Administrative Procedures* Guide for the Establishment of Governor's STEM Academy's document.

3. If the Governor's STEM Academy will be a jointly operated program, an ongoing governing board will be established or maintained to reflect current Board of Education regulations relative to jointly operated schools and programs.

4. A public, government entity will serve as the grant fiscal agent.

Certification by Authorized or Institutional Official:

The applicant certifies that to the best of his/her knowledge the information in this application is correct, that the filing of this application is duly authorized by the partners participating in this process to establish a Governor's STEM Academy, and that the applicant will comply with the statements of assurances.

Jack D. Dale
Typed or Printed Name of Authorized Official

Superintendent of Schools
Title

Signature of Authorized Official

February 24, 2012
Date

Appendix D:

Budget

NEW COMMONWEALTH GOVERNOR'S STEM ACADEMY

BUDGET

A – Direct Costs	TOTAL			
	State Funds	Perkins Funds	Other Funds (Local or grant funds to be described in Budget Narrative)	In-Kind
1. Personnel --- 1000				$36,007.48
2. Employment Benefits --- 2000				$15,771.28
3. Purchased/Contractual Services ---- 3000				
4. Internal Services ---- 4000				
5. Staff Development ---- 5000			$3,000.00	
6. Summer Component Activities ---- 5000				
7. Travel ---- 5000				
8. Contractual Services ---- 5000				
9. Materials and Supplies ---- 6000		$18,000.00	$6,000.00	$10,000.00
10. Equipment ---- 8000				
11. Facilities ---- 8000				
B – Indirect Costs *				
TOTAL		$18,000.00	$9,000.00	$61,778.76

* If recovering indirect costs, the rate must not exceed the federally approved indirect cost rate of the fiscal agent.

Appendix E:
Pathway Programs of Study

Engineering and Technology
Network Systems - Cybersecurity

Northern Virginia Plan of Study

NOVA Division:
Fairfax County Public Schools
School:
New Commonwealth Governor's STEM Academy

Cluster: ***Science, Technology, Engineering & Mathematics*** **Pathways:** ***Engineering and Technology***

This Career Pathway Plan of Study can serve as a guide as learners continue on a career path. Courses listed within this plan are only recommended and should be individualized to meet each learner's educational and career goals.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses	SAMPLE – Occupations Relating to This Pathway:
Graduation Requirements: http://www.doe.virginia.gov/2plus4in2004/index.shtml								**Occupations:** **Aeronautical Engineering Technician** **Air Conditioning Engineering Technician** **Architectural Engineering Technician** **Automotive Engineering Technician** **Bioengineering and Biomedical Engineering Technician** **Civil Engineering Technician** **Computer Engineering Technician** **Construction Engineering Technician** **Electrical Engineering**
MIDDLE	7	1110 English 7 111036 English 7 Honors	3112 Math 7 311136 Math 7 Honors 3130 Algebra I 3135 Algebra II 313036 Algebra I Honors	4115 Life Science 411536 Life Science Honors	2355 US History 1865 – Present 235536 US History 7 Honors	7120 Phys Ed	6150 Keyboarding 6160 Digital Input Technologies 6609 Computer Solutions 8461 Inventions & Innovations 9072 Career Applications Phase III	
MIDDLE	8	1120 English 8 112036 English 8 Honors	3112 Math 8 3130 Algebra I 3135 Algebra II 3143 Geometry 314336 Geometry Honors 313036 Algebra I Honors	4125 Physical Science 412536 Physical Science Honors	2357 Civics & Economics 235736 Civics & Economics Honors	7200 Phys Ed	6150 Keyboarding 6160 Digital Input Technologies 6609 Computer Solutions 8462 Technological Systems 9072 Career Applications Phase III	
Career Assessment: Virginia Wizard..								
SECONDARY	9	1130 English 9 113039 World Civilization I 113036 English 9 Honors	3130 Algebra I 313036 Algebra I Honors 3135 Algebra II 313536 Algebra II Honors 3143 Geometry 314336 Geometry Honors 3184 Computer Science	4310 Biology I 431036 Biology I Honors	2219 World History I 221936 World History 1 Honors 237539 World Civilization I	7300 PE Health I 7405 PE Health II Foreign Language (3 years) 6120 Economics & Personal Finance	8435 Technical Drawing & Design	
SECONDARY	10	1140 English 10 114036 English 10 Honors	3143 Geometry 314336 Geometry Honors 3135 Algebra II 313536 Algebra II Honors 3184 Computer Science 318505 AP Computer Science 3160 Precal with Trig 316036 Precal with Trig Honors 3130 Algebra I 313036 Algebra I Honors 3160DE PreCal DE	4410 Chemistry 441036 Chemistry Honors 451050 Active Physics	2221 World History II 222136 World History II Honors 234004 AP World History 239904 AP Euro Studies		8435 Technical Drawing & Design 8447 Production Systems I	

11	1150 English 11 119605 AP English 115097 English 11 Honors	3135 Algebra II 313536 Algebra II Honors 3184 Computer Science 318505 AP Computer Science 3160 PreCal/Trig 316036 PreCal/Trig Honors 3160DE PreCalculus DE 3154 Discrete Math 319062 Probability Statistics 319204 AP Statistics 317004 AP Calc AB 317704 AP Calc BC 317860 MultiVar Calculus 319800 Matrix Algebra	4310 Biology 431036 Biology Honors 4410 Chemistry 441036 Chemistry Honors 4510 Physics 451036 Physics Honors 4220 Geosystems 422036 Geosystems Honors 457005 AP Physics-B 457004 AP Physics-C 451050 Act Physics 437004 AP Biology 447004 AP Chemistry 4330 Human Anatomy 4260 Astronomy 427004 AP Environmental Science 452026 Eng Phy 435000 Genetics & BioTech 425000 Oceanography	2360 US History 231904 AP US History 234004 AP World History 239904 AP Euro History	8436 Engineering Drawing & Design **DE** EGR 115 Engineering Graphics (2 credits)	8436 Engineering Drawing & Design **DE** EGR 115 Engineering Graphics (2 credits) 8447 Production Systems I	**Technician** **Electromechanical Engineering Technician** **Environmental Engineering Technician** **Industrial Engineering Technician** **Manufacturing Engineering Technician** **Marine Engineering Technician** **Mechanical Engineering Technician** **Nuclear and Radiological Engineering Technician** **Surveying and Geomatics Engineering Technician** **Telecommunications Engineering Technician** **<u>Certificate or 2-Year Degree</u>** ► **AAS Engineering Technology** **AS Engineering Technology** **<u>Bachelor of Science Degree</u>** **Engineering Technology**
12	1160 English 12 1160DE English 12 **DE** 119504 AP English Literature Composition	3135 Algebra II 313536 Algebra II Honors 3184 Computer Science 318505 AP Computer Science 3160 PreCal/Trig 316036 PreCal/Trig Honors 3160DE PreCalculus DE 3154 Discrete Math 319062 Probability Statistics 319204 AP Statistics 317004 AP Calc AB 317704 AP Calc BC 317860 MultiVar Calculus 319800 Matrix Algebra	4310 Biology 431036 Biology Honors 4410 Chemistry 441036 Chemistry Honors 4510 Physics 451036 Physics Honors 4220 Geosystems 422036 Geosystems Honors 457005 AP Physics-B 457004 AP Physics-C 451050 Act Physics 437004 AP Biology 447004 AP Chemistry 4330 Human Anatomy 4260 Astronomy 427004 AP Environmental Science 452026 Eng Phy 435000 Genetics & BioTech 425000 Oceanography	2440 US Government 244504 AP US Government 244567 AP Combined US & Comp Government 234004 AP World History 239904 AP Euro History	8416 Electronic Systems I **DE ETR 113 DC & AC Fundamentals I** 8412 Electronic Systems 2 **DE** ETR 106 Basic Programming/ Electronic Calculations	ETR 113 DC & AC Fundamentals I (4 credits) ETR 106 ETR 106 Basic Programming Applied to Electrical/Electronic Calculations	

Dual Enrolled Courses: College courses in the pathway offered locally for high school and/or college credit	
Related certifications/credentials approved by VDOE and offered locally: Virginia Career Readiness Certification (CRC) and IC^3 Certification (Certiport); Pre-Engineering Assessment (NOCTI); AutoCAD Certifications (Brainbench); Autodesk Application Certification Program (Autodesk); Brainbench Web Design and Development Certifications (Brainbench); Certified SolidWorks Professional (SolidWorks Corporation); Pre-Skills Assessment for Mastercam Certification (NOCTI); CAD Assessment (NOCTI)	**Additional Learning Opportunities:** Student Organization(s): Technology Student Association of America (TSA), FIRST Robotics – Chantilly Robotics 612, and IEEE Student Club of Chantilly Academy. **Work-Based Learning:** X Career Research X Cooperative Education X Internship X Mentorship X Job Shadowing X Student Apprenticeship
Postsecondary: Placement assessments such as COMPASS & SAT II	College Entrance Exams such as ACT & SAT

POSTSECONDARY				
	Pathway: Engineering and Technology	**AAS Engineering Technology** **AS Engineering Technology**	**BS Engineering Technology**	

College: Northern Virginia Community College

POSTSECONDARY - COMMUNITY COLLEGE or APPRENTICESHIP - Determined Locally

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives			
Year 1 1st Semester	If needed ENG 111 College Comp I (3 cr)	MTH 166 Precalculus with Trigonometry (5cr) OR If needed MTH 163 / 164 Precalculus I & II		Social Science Elective (3 cr)	ARC 121 Architectural Drafting I (3cr)	CIV 171 Surveying I (3cr)	If needed ETR 106 Basic Programming Applied to Electrical/Electronic Calculations OR CSC 110 Introduction to Computing (2-3cr)	SDV Elective (1 cr)
Year 1 2nd Semester					ARC 133 Construction Methodology & Procedures I (3cr)	DRF 201 Computer Aided Drafting & Design I (4cr)	MEC 112 Processes of Industry (3cr)	PED 116 Lifetime Fitness and Wellness (1-2cr) *If taken for 1cr, must take one additional PED course
Year 2 1st Semester	SPD Elective (3cr)			HIS 101 History of Western Civilization I (3cr)	CIV 210 Structural Systems (5cr)	If needed EGR 115 Engineering Graphics (2cr)	EGR 130 Statics and Strength of Materials (5cr)	If needed ELECTIVE ETR 113 DC & AC Fundamentals I
Year 2 2nd Semester			PHY 201 General College Physics I (4cr)		ARC 122 Architectural Drafting II (3cr)	DRF 140 Technical Drawing (3cr)	If needed DRF 202 Computer Aided Drafting & Design II (3cr)	MEC 118 Automated Manufacturing Technology (3cr)

Related Industry Certifications Available: ESEP Expert Systems Engineering Professional, CSEP-Asq CSEP w/US DoD Acquisition, CSEP Certified Systems Engineer Professional, ASEP Associate Systems Engineering Professional, Manufacturing Technician Levels 1-4 (Virginia Manufacturers Association)	**Additional Suggested Learning Opportunities:** **Work-Based Learning:** X Registered Apprenticeship X Cooperative Education X Internship X Mentorship

UNIVERSITY

University/College: Old Dominion University, Norfolk State University, Purdue University, Penn State University, Rochester Institute of Technology, Alfred State College, University of Cincinnati, University of Dayton, Brigham Young University, Cal State – Long Beach, Ball State University, Arizona State University, Texas A&M.
Degree or Major: Bachelor of Science Engineering Technology
Number of Articulated CC Credits: **Accept all AAS coursework and enter as junior**

Northern Virginia Plan of Study

NOVA Division:
Fairfax County Public Schools
School:
New Commonwealth Governor's STEM Academy at Chantilly High School

Cluster: ***Information Technology*** Pathway: ***Network Systems - CyberSecurity***

This Career Pathway Plan of Study can serve as a guide as learners continue on a career path. Courses listed within this plan are only recommended and should be individualized to meet each learner's educational and career goals.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses	SAMPLE – Occupations Relating to This Pathway:
Graduation Requirements: http://www.doe.virginia.gov/2plus4in2004/index.shtml								**Possible Occupations** ➢ Network Engineer ➢ CyberSecurity Specialist **Certificate or 2-Year Degree** ➢ ➢ AAS Information Systems Technology ➢ BS Information Technology - CyberSecurity
MIDDLE	7	1110 English 7 111036 English 7 Honors	3112 Math 7 311136 Math 7 Honors 3130 Algebra I 3135 Algebra II 313036 Algebra I Honors	4115 Life Science 411536 Life Science Honors	2354 US History 1865 – Present 235536 US History 7 Honors	7120 Phys Ed	6150 Keyboarding 6160 Digital Input Technologies 6609 Computer Solutions 8461 Inventions & Innovations 9072 Career Applications Phase III	
MIDDLE	8	1120 English 8 112036 English 8 Honors	3112 Math 8 3130 Algebra I 3135 Algebra II 3143 Geometry 34336 Geometry Honors 313036 Algebra I Honors	4125 Physical Science 412536 Physical Science Honors	2357 Civics & Economics 235736 Civics & Economics Honors	7200 Phys Ed	6150 Keyboarding 6160 Digital Input Technologies 6609 Computer Solutions 8462 Technological Systems 9072 Career Applications Phase III	
Career Assessment: Virginia Wizard								
SECONDARY	9	1130 English 9 2375 World Civilization I 11303 English 9 Honors	3130 Algebra I 313036 Algebra I Honors 3135 Algebra II 313536 Algebra II Honors 3143 Geometry 31433 Geometry Honors 3184 Computer Science	4310 Biology I 43103 Biology I Honors	2219 World History I 221936 World History 1 Honors 237539 World Civilization I	7300 PE Health I 7405 PE Health II Foreign Language (3 years) Other Electives to Complement Pathway (Core Academic and CTE): 6120 Economics & Personal Finance		
SECONDARY	10	1140 English 10 11403 English 10 Honors 2375 World Civilization II	3143 Geometry 314336 Geometry Honors 3135 Algebra II 313536 Algebra II Honors 3184 Computer Science 318505 AP Computer	4410 Chemistry 441036 Chemistry Honors 451050 Active Physics	2221 World History II 222136 World History II Honors 234004 AP World History 239904 AP Euro Studies			

		Science 3160 Precal with Trig 316036 Precal with Trig Honors 3130 Algebra I 313036 Algebra I Honors 3160DE PreCal DE			6612 Computer Information Systems **DE** ITE 115 Intro to Computer Applications & Concepts		
11	1150 English 11 1196 AP English 115097 English 11 Honors	3135 Algebra II 313536 Algebra II Honors 3184 Computer Science 318505 AP Computer Science 3160 PreCal/Trig 316036 PreCal/Trig Honors 3160DE PreCalculus DE 3154 Discrete Math 319062 Probability Statistics 319204 AP Statistics 317004 AP Calc AB 317704 AP Calc BC 317860 MultiVar Calculus 319800 Matrix Algebra	4310 Biology 431036 Biology Honors 4410 Chemistry 441036 Chemistry Honors 4510 Physics 451036 Physics Honors 4220 Geosystems 422036 Geosystems Honors 457005 AP Physics-B 457004 AP Physics-C 451050 Act Physics 437004 AP Biology 447004 AP Chemistry 4330 Human Anatomy 4260 Astronomy 427004 AP Environmental Science 452026 Eng Phy 435000 Genetics & BioTech 425000 Oceanography	2360 US History 231904 AP US History 234004 AP World History 239904 AP Euro History	8543 Computer Networking Hardware Operations II **DE** ITN 154 Cisco 1 & ITN 155 Cisco 2 8544 Computer Networking Hardware Operations III **DE** ITN 156 CISCO 3 & ITN 157 Cisco 4 6650 Computer Network Software Operations **DE** ITN 120 Wireless Network Administration 6651 Computer Network Software Operations. Advanced **DE** ITN 260 Network Security Basics	ITE 115 Intro to Computer Applications & Concepts ITN 100 Introduction to Telecommunications (3cr) ITN 154 & 155 CISCO 1 & 2 (4 cr each) ITN 156 CISCO 3 & ITN 157 CISCO 4 (4 cr each)	
12	1160 English 12 1160DE English 12 **DE** 119504 AP English Literature Composition	3135 Algebra II 313536 Algebra II Honors 3184 Computer Science 318505 AP Computer Science 3160 PreCal/Trig 316036 PreCal/Trig Honors 3160DE PreCalculus DE 3154 Discrete Math 319062 Probability Statistics 319204 AP Statistics 317004 AP Calc AB 317704 AP Calc BC 317860 MultiVar Calculus 319800 Matrix Algebra	4310 Biology 431036 Biology Honors 4410 Chemistry 441036 Chemistry Honors 4510 Physics 451036 Physics Honors 4220 Geosystems 422036 Geosystems Honors 457005 AP Physics-B 457004 AP Physics-C 451050 Act Physics 437004 AP Biology 447004 AP Chemistry 4330 Human Anatomy 4260 Astronomy 427004 AP Environmental Science 452026 Eng Phy	2440 US Government 244504 AP US Government 244567 AP Combined US & Comp Government 234004 AP World History 239904 AP Euro History		ITN 120 Wireless Network Administration (3 cr) ITN 260 Network Security Basics (3 cr)	

			435000 Genetics & BioTech 425000 Oceanography				

Dual Enrolled Courses: College courses in the pathway offered locally for high school and/or college credit

Related certifications/credentials approved by VDOE and offered locally:
Virginia Workplace Readiness, Virginia Career Readiness Certification (CRC) and IC^3 Certification (Certiport); Microsoft Office Specialist (MOS) (Microsoft); Oracle Certification Program Examinations (Oracle); Brainbench Software Development Certifications (Brainbench); Brainbench Web Administration Certifications (Brainbench); Java Programming Examination (Cisco Systems); Adobe Certified Associate (Adobe Systems, Inc.); Apple Pro Certification Program (Apple, Inc.); A+ Certifications (2006 Objectives) (CompTIA); Brainbench Systems Administration Certifications (Brainbench); Brainbench Technical Support Certifications (Brainbench); Certified Computer Service Technician (CST) (Electronics Technicians Association, International—ETA)

Additional Learning Opportunities:
Student Organization(s): **AFA CyberPatriot, IEEE Student Club, CyberSecurity Summer Camp.**

Work-Based Learning:
X Career Research X Cooperative Education X Internship X Mentorship
X Job Shadowing X Student Apprenticeship

Postsecondary: Placement assessments such as COMPASS & SAT II

College Entrance Exams such as ACT & SAT

POSTSECONDARY

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY

Pathway: Network Systems, Information Support & Services, Interactive Media, Programming & Software Development	**AAS Information Systems Technology**	**BS Information Technology OR Computer Science**	**MS Information Technology OR Computer Science**

College: Northern Virginia Community College

POSTSECONDARY - COMMUNITY COLLEGE or APPRENTICESHIP - Determined Locally

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives			
Year 1 1st Semester	If needed ENG 111 College Comp I (3 cr)	MTH 151 Math for the Liberal Arts I OR If needed higher level math course (3cr)		Social Science Elective (3 cr)	ITE 105 IT Careers & Cyber Ethics (2cr)	If needed ITE 115 Intro to Computer Applications & Concepts (3cr)	ITP 100 Software Design (3cr)	**If needed** SDV Elective (1 cr)
Year 1 2nd Semester				Social Science Elective (3 cr)	**If needed** ITN 100 Introduction to Telecommunications (3cr) ITE115 prereq.	ITD 256 Advanced Database Management (3cr)	ITE 221 PC Hardware and OS Architecture (3cr)	ITN 171 Unix I (3cr)
Year 2 1st Semester	SPD Elective (3cr)			Humanities/Fine Arts Elective (3cr)	ITP 170 Project Management (3cr)	If needed IT Electives (9cr) ITN 120 and 260		
Year 2 2nd Semester					If needed IT Electives (12-16cr) CISCO courses			PED 116 Lifetime Fitness and Wellness (1-2cr) *If taken for 1cr, must take one additional PED course

Related Industry Certifications Available:	**Additional Suggested Learning Opportunities:**
A+ Computer Hardware Certification, CCNA Cisco Certified Network Academy, CCNP Cisco Certified Network Professional, CCENT Cisco Certified Entry Networking Technician, Certified Fiber Optic Technician, Comp TIA A+, MCP Microsoft Certified Professional, MCP Microsoft Certified Professional + Intenet, MCSE Microsoft Certified Systems Engineer, MOS Microsoft Office Specialist, Network Cabling Specialist, Network+, Oracle Database Administration, Prometric APTC (Authorized Prometric Testing Center), Security+	**Work-Based Learning:** X Registered Apprenticeship X Cooperative Education X Internship X Mentorship

UNIVERSITY	
	University/College: George Mason, Virginia Tech Degree or Major: BS Information Technology Number of Articulated CC Credits: Courses accepted on a case-by-case basis. General Ed courses are not waived and students will enter as lower classman.

Appendix F:

2012–2013

Chantilly Academy Bell Schedule

2012-2013 Chantilly Academy Schedule

Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8
Computer Systems Technology		Computer Systems Technology - Girls Section		Planning	IPR	Computer Systems Technology	
Auto Tech 1 Feeder	Auto Tech 2	Auto Tech 1 Feeder	Auto Tech 2	Planning	IPR	Chantilly all Auto Tech 1	
Auto Collision Feeder	Auto Collision 2	Auto Collision Feeder	Auto Collision 2	Planning	IPR	Chantilly all Auto Collision 1	
Cosmetology 1		Cosmetology 1		Planning	IPR	Cosmetology 2	
Cosmetolgy 1 feeder	Cosmetology 2	Cosmetology 1 feeder	Cosmetology 2	CHS Cos 1	IPR	CHS Cosmetology 1	Planning
Culinary Arts 1		Culinary Arts 1		Planning	IPR	Culinary Arts 2	
ECC 2	ECC 1	ECC 2	ECC 1	Planning	IPR		
Entrepreneurship 1	Entrepreneurship 1		Entrepreneurship 2	Planning	Entrepreneurs	IPR	Entrepreneurship 1
Dental 1 feeder	Dental Careers 1	Dental 1 feeder	Dental Careers 1	Planning	IPR	Dental Careers 2	
			GIS	Planning	IPR		
Criminal Justice 2		Crim. Justice 1 feeder	Crim. Justice 1	Planning	IPR	Crim. Justice 1	Crim. Justice 1
Animal Science 1 and 2		Animal Science 1 and 2		Planning	IPR	Chantilly all Animal Science 1 and 2	
AFJROTC Foundations		AFJROTC Foundations		Planning	IPR	AFJROTC Advanced	
Pharmacy Technician		Pharmacy Technician		Planning	IPR	Chantilly all Pharmacy Tech 1 and 2	
		Oracle (online course)		Planning	IPR	Cisco	Cisco
Medical Assistant		Exploring Health Science Feeder		Planning	IPR	Chantilly all Exploring Health Science	
			Engineering Math	Planning			
Eng. Physics 2	Girls in Eng.	Eng. Physics 2 feeder	Eng. Systems 1	Planning	IPR	Eng. Systems 2	CHS all Eng. Sys 1
Carpentry 1	Carpentry 2	Carpentry 1	Carpentry 2	Planning	IPR	Chantilly all Carpentry 1	
Networking		Networking					
	KEY						
	white - all Chantilly students		Periods 1 & 2 meet from bus arrival (approx 7:40) - 8:45 a.m. block				
	blue - open to CHS and feeder students		Periods 3 & 4 meet from bus arrival (approx. 9:30) - 10:50 Midday block				
	salmon - feeder students only		Periods 7 & 8 meet from bus arrival (approx 11:50) - 1:20 p.m. block				
			** CHS only sections meet from 12:40 - 2:10				
			Double Block sections (1/3 or 2/4) meet from a.m. bus arrival until 10:45				

Appendix G:

Statement of Insurance

FAIRFAX COUNTY PUBLIC SCHOOLS
Risk Management, Office of the Comptroller
Gatehouse Administration Center I
8115 Gatehouse Road
Falls Church, VA 22042-1203

STATEMENT OF INSURANCE/SELF-INSURANCE

This statement shall serve to certify both the accuracy of the information as well as the financial ability of the School Board to meet the obligation imposed by the retention levels.

PROPERTY

Fairfax County Public Schools (FCPS) purchases coverage from The Lexington Insurance Company to protect its property and other property in the care, custody, and control of FCPS with a self-insured retention of $100,000.

LIABILITY

Fairfax County Public Schools (FCPS) funds a liability self-insurance plan and assumes the following risks with a self insured retention of $2,000,000 and excess coverage with a $10,000,000 limit for: comprehensive general, vehicle, and school board legal liability coverages. This plan covers the School Board, its employees, approved volunteers, and certain others. Other persons/organizations cannot become additional insureds under the plan.

INDEMNIFICATION

General counsel to the Fairfax County School Board has concluded that, because school boards in Virginia are immune from tort liability pursuant to the doctrine of sovereign immunity, the School Board cannot contractually assume such liability by way of an indemnification agreement. Without specific statutory authority to do so, the School Board has no legal authority to assume tort liability of another by way of indemnification, or to otherwise waive its sovereign immunity.

ARBITRATION

Fairfax County Public Schools cannot legally enter into any agreement/contract that specifies arbitration as a means of resolving disputes. Virginia law does provide authority to public bodies to enter into agreements that would utilize alternative dispute resolution procedures; however, such procedures would be non-binding. The Fairfax County Board of Supervisors did not adopt this option (for the School Board) into its Purchasing Resolution.

STATEMENT OF RESPONSIBILITY

Any property rented, leased, or in any other manner under the care, custody, and control of FCPS will be treated as though it is FCPS property, barring legal contract language to the contrary. Any questions concerning property coverage or liability, based upon FCPS care, custody, and control of property not owned by FCPS, will be dealt with by FCPS as though the questions arose due to an occurrence or situation involving FCPS-owned property.

Signature: Mary Jane Fick

Mary Jane Fick, Coordinator, Risk Management
571-423-3645

Date: 2/6/12

Appendix H:

2011 – 2012 Chantilly Academy Profile

FAIRFAX COUNTY PUBLIC SCHOOLS

Chantilly Academy: *Excellence in Career & Technical Education*

Profile 2011-2012

Fairfax County Public Schools (FCPS)
4201 Stringfellow Road, Chantilly, VA 20151
www.fcps.edu/chantilly academy
Administrator: Douglas Wright

Advancing Excellence in Career & Technical Education...Chantilly Academy is committed to developing the leaders of tomorrow by preparing all students to meet the high academic, scientific and technical skills, civic and workforce challenges of the 21st century. As the largest of six Career & Technical Education Academies in FCPS, Chantilly Academy enrolls more than 1,300 students annually from 20 FCPS division high schools.

As a CTE learning community, we embrace initiative, innovation, planning, collaboration, and teamwork that result in academic rigor, instructional excellence, outstanding student performance and continuous program improvement. The unique learning opportunities at Chantilly Academy effectively launch students toward successful post-secondary and higher education, and careers with relevant and transferable life skills. The Academy offers specialized electives in Engineering & Scientific Technology, Health & Human Services, and Trade & Industry.

Courses

Air Force JROTC ■ Animal Science ■ Automotive Collision Service ■ Automotive Technology ■ Carpentry ■ Network Design & Engineering/CISCO ■ Computer Systems Technology (A+) ■ Cosmetology ■ Criminal Justice ■ Culinary Arts ■ Dental Careers ■ Early Childhood Careers ■ Engineering Math ■ Engineering Physics 2 ■ Engineering Systems ■ Girls Exploring Engineering ■ Entrepreneurship ■ Exploring Health Sciences ■ Exploring the Language of Medicine ■ Geographic Information Systems ■ Independent Research Engineering ■ IT Seminar ■ Medical Assistant ■ Network Administration ■ Oracle ■ Pharmacy Technician

Student Benefits

- **In-depth, "hands-on" study of career field by experienced subject expert instructors**
- **State of the art technology and lab facilities**
- **National Certifications and Industry Credentials**
- **Articulated and dual enrollment college credits**
- **Career exploration and preparation**
- **Community Service Learning**
- **Internships, job shadows, field trips, career speakers and professional development workshops**
- **Opportunities for career related college scholarships**
- **Career and Technical Student Organizations**
- **Mentorship and career role models**

Academy Highlights

Industry Credentials: Academy courses prepare students for industry credentialing opportunities. Earning an industry credential demonstrates the professional skill level the student has achieved and provides industry-recognized proof that the student is prepared for career-related responsibilities or post secondary education and training.

Examples include: CompTIA A+ Certifications, Oracle PL/SQL Developer Certified Associate, CCENT & CCNA, NOCTI Certifications, Dental Radiology, First Aid and CPR, Blood-borne Pathogens, Certified Pharmacy Technician, I-Car, NASSSA, Virginia State Cosmetology License, National Restaurant Association ServSafe Sanitation Exam, and OSHA-Career Safe.

Students Earn Industry Certifications

2008-2009 – 16 Certification Exams Available; 359 Certifications Awarded.

2009-2010 – 25 Certification Exams Available; 638 Certification Awarded.

2010-2011 – 24 Certification Exams Available; 554 Certifications Awarded.

Articulated College Credits and Dual Enrollments enable students to earn college credit for certain Academy classes. Dual Enrollment agreements are in place with Northern Virginia Community College (NVCC), and James Madison University (JMU). Dual enrollment college credits are available for Entrepreneurship (3 Credits), CISCO (16 credits for Levels 1 & 2), Geographic Information Systems (3 credits). Articulated credits are available for Culinary (Art Institute of Washington, Culinary Institute of America, Stratford and Johnson Wales Universities), Engineering Physics, and Engineering Systems 1 (George Mason University).

Student Population: Academy students are from 20 different FCPS division high schools, bus transportation may be available to the Academy from the following base high schools: Annandale, Centreville, Chantilly, Fairfax, Falls Church, Herndon, Lake Braddock, Langley, Lee, Madison, McLean, Marshall, Mountain View, Oakton, Robinson, South County, South Lakes, Westfield and Woodson.

Strategic Business Partnerships: Thanks to the support of dedicated individuals, community organizations, local businesses, national corporations and post-secondary educational institutions, Chantilly Academy offers programs that are industry relevant and provide a "real-world" bridge to higher education and employment. Partnerships include:

ProFinishes Plus/DuPont; Purdue University- EPICS~High; NVR LLC; Northrop Grumman, Balfour Beatty Construction; The SI Organization; National Reconnaissance Office; Greenbriar West Elementary School; KinderCare; Micron Technology; Lockheed Martin; Orbital Sciences; CVS Pharmacy; Air Force Association Gabriel Chapter; ExxonMobil; SRC Inc.; Rolls-Royce, NA; Associated Builders & Contractors of Virginia; George Washington University School of Engineering & Applied Sciences & School of Medicine and Health Sciences; Inova TDI Inc and Dulles Regional Chamber of Commerce.

Student Services: Dedicated staff supports the individual needs of all Academy students; including an administrator, guidance counselor, career experience specialist, 20 program teachers and a team of five Special Education teachers and one ESOL teachers.

Career Experiences are available for all students; "hands-on" activities in and out of their classroom provide realistic views of future careers. Throughout the 2010-2011 school year, 2,172 students, along with 106 professional businesses and post-secondary education institutions, were engaged in career experiences: internships, job shadows, mock interviews, resume workshops, mentoring, National Engineers Week guest lecturers, Engineering Expo, Health Sciences Symposium, Academy Career Fair, and the ABCs of Credit Workshop.

Scholarships and Honors: Students who become members of Career & Technical student organizations, including SKillsUSA, HOSA, DECA, FCCLA and FIRST Robotics, have access to thousands of dollars in scholarship monies. In 2010-2011, Chantilly Academy students earned a total of $1,374,350 in scholarships.

Outstanding Student Achievements

- SkillsUSA National Champions, Cosmetology team, Entrepreneurship Team Competition.
- Cosmetology students achieved an 80% pass rate on the Virginia Cosmetology License Exam.
- Entrepreneurship student took 1st place in the Pitch George Competition, sponsored by George Washington University.
- Fifty students competed in the SkillsUSA District Leadership Competition and qualified to compete at the State Competition.
- Fourteen Dental Careers students passed the comprehensive Virginia State Radiology Certification Exam.
- Medical Assistant students were awarded 1st Place in the HOSA Bowl Competition qualifying for the HOSA State Competition.
- Sixteen FCCLA students qualified to compete at the FCCLA State Leadership Competition.
- Six Entrepreneurship students placed in the top 3 at the DECA State Leadership Conference and qualified to advance to the International DECA Competition in Orlando, Florida.
- Auto Technology has been named an Official National Automotive Technicians Education Foundation (NATEF) industry certified and accredited program for Brakes, Electrical/Electronic Systems, Engine Performance and Suspension and Steering.
- Air Force JROTC awarded Distinguished Unit Awards; honored VA 2009, 2010 and 2011.
- Cyber Patriot Competition – sixty-nine students participated in the 2011-2102 AFA CyberPatriot Competition. Students from Computer Systems Technology, Oracle, Cisco, Engineering and the AFJROTC programs were mentored by Northrop Grumman experts in information assurance and cyber security. The Gabriel Chapter of the Air Force Association sponsored teams in competition. Two Open Division Teams advanced to the CyberPatriot National Semi-Finals and were recognized at a Federal IT Job Shadow Day program at the US Pentagon.
- Engineering Projects in Community Service – EPICS High/Purdue University partnership with Chantilly Academy. Thirty-three Girls Exploring Engineering students and alumni piloted an engineering service learning project "Radar for the Blind" with the Virginia Association for the Blind.

Virginia Board of Education Agenda Item

Agenda Item: M. **Date:** April 26, 2012

Title	First Review of a Proposal from Roanoke County Public Schools to Establish the Governor's STEM Academy at the Burton Center for Arts and Technology		
Presenter	Dr. Cecil Snead, Director of Instruction, Roanoke County Public Schools Lolita B. Hall, Director, Office of Career and Technical Education Services		
E-mail	csnead@rcs.k12.va.us lb.hall@doe.virginia.gov	**Phone**	(540) 562-3900 (804) 225-2051

Purpose of Presentation:
Other initiative or requirement. Specify below:
First review and acceptance of the Proposal to Establish a Governor's STEM Academy at the Burton Center for Arts and Technology, Roanoke County Public Schools

Previous Review or Action:
No previous review or action.

Action Requested:
Action will be requested at a future meeting. Specify anticipated date below:
Date: May 24, 2012
Action: Final review and approval

Alignment with Board of Education Goals: Please indicate (X) all that apply:

X	Goal 1: Expanded Opportunities to Learn
	Goal 2: Accountability of Student Learning
	Goal 3: Nurturing Young Learners
	Goal 4: Strong Literacy and Mathematics Skills
	Goal 5: Highly Qualified and Effective Teachers and Administrators
	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify: Governor's STEM Academy

Background Information and Statutory Authority:
Goal 1: The Governor's STEM Academy is designed to expand opportunities for the general student population to acquire STEM literacy and other critical skills, knowledge, and credentials that will prepare them for high-demand, high-wage and high-skill careers.

Partnerships establishing academies must include at least one public school division, business and industry, and postsecondary education. On November 29, 2007, the Board of Education approved the criteria to establish a Governor's STEM Academy. Subsequently, on March 19, 2008, the Board approved the standards for the Governor's Career and Technical Education Exemplary Standards Awards Program, which all Career and Technical Academies must implement.

As required by the Board of Education, the State Council of Higher Education for Virginia (SCHEV) has reviewed the attached proposal and recommends that the Board approve the proposal. Staff members of the Virginia Department of Education (DOE) have also reviewed the proposal in the context of the Board's criteria. An executive summary of the proposal is in Attachment A. Attachments B and C are the reports from the reviews by SCHEV and the DOE. Attachment D is the complete proposal.

Currently, there are ten Governor's STEM Academies in Virginia. They are located in Arlington County, Chesterfield County, Halifax County, Hampton City, Loudoun County, Richmond City, Russell County, Stafford County, Suffolk City, and Carroll County.

Summary of Important Issues:
The proposal for the Roanoke County Governor's STEM Academy is conceptualized with partnerships consisting of Roanoke County Public Schools; Virginia Western Community College; Mason Mechanical Labs; Virginia Tech University; Roanoke Regional Partnership; Balzer and Associates, Inc.; Development Initiatives, Inc.; Western Virginia Workforce Development Board; Carilion Biomed Institute; Novozymes; Plastics One; East West DyeCom; General Electric; Wireless Medcare; Lionberger Construction; Precision Steel; Carilion TSG; Hughes Associates; Carilion Physics; Accellent Cardiology; Spectrum Engineers; AECOM; Hill Studios; Salem Specialties, Inc.; Synchrony; Shenandoah Machine & Maintenance Co., Inc.; Graham-White Mfg; Sematco, Inc.; E & W Machine; Valley Machine; J. C. Nordt; WSLS 10; WDBJ 7; Roanoke-Times; Access Advertising, The O'Connor Group; Carter Media; Wheeler Broadcasting; Blue Ridge PBS; Arcet; Overfelt & Son Welding; Lincoln Electric; New Millennium Steel; Thermal Dynamics; Miller Welders; NASCAR; Tread Corporation; Mountain Land Machine; DRP Racing; Berglund Automotive.

The Roanoke County Governor's STEM Academy will provide rigorous academic content within its career and technical education (CTE) instruction concentrating on three career pathways: *Engineering and Technology, Journalism and Broadcasting,* and *Facility and Mobile Equipment Maintenance.*

The first pathway, *Engineering and Technology* is in the Science, Technology, Engineering, and Mathematics (STEM) Cluster. Students will examine technology and engineering fundamentals related to solving real-world problems. They will use the latest CAD software, and multimedia presentation software. They will gain a basic understanding of engineering history and design, using mathematical and scientific concepts through hands-on projects in a laboratory setting as they communicate information in team-based presentations, developing proposals and writing technical reports. Students will be exposed to a variety of specialty fields such as environmental, biomedical, industrial, civil, and mechanical engineering and related career choices that will prepare them for postsecondary education.

The second pathway, *Facility and Mobile Equipment Maintenance* is in the Transportation, Distribution and Logistics Cluster. Individuals in this field are involved in the logistics of all types of transportation from road to rail and air to water. Graduates will be prepared for careers in design, fabrication, assembly, and repair. Students will have an opportunity to research the most efficient, safe, cost-effective and environmentally friendly ways to operate equipment and machinery. In a laboratory setting, students will learn skills in basic maintenance, repair, and servicing of vehicles. Emphasis will be placed on the motor sports industry. Designers and mechanical engineers are an integral part of the motor sport industry. Students will engage in diagnostic and problem-solving experiences and learn about hybrid-fuel technologies. They will have an opportunity to build a drag car.

The third pathway, *Journalism and Broadcasting* is in the Arts, Audio and Video Technology and

Communications Cluster. Students enrolled in this pathway will have the opportunity to apply creativity in a variety of different areas. They will participate in rigorous courses and learn skills for success in television and video production, Web design, technical and news writing, digital image manipulation, publishing, and advertising. Students will be provided opportunities to gather information, prepare stories, and release broadcasts that inform the public about current issues. They will work with high-tech equipment to record and transmit various broadcasts, and produce interactive multimedia products and services.

Impact on Fiscal and Human Resources:
Funding must be provided at the local level.

Timetable for Further Review/Action:
The proposed beginning date for the Governor's STEM Academy at the Burton Center for Arts and Technology, Roanoke County Public Schools, is fall of 2012.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education accept for first review the proposal to establish the Governor's STEM Academy at the Burton Center for Arts and Technology, Roanoke County Public Schools.

Roanoke County Governor's STEM Academy
at the
Burton center for Arts and Technology
Executive Summary
April 9, 2012

Partnership Members:	Roanoke County Public Schools; Virginia Western Community College; Mason Mechanical Labs; Virginia Tech University; Roanoke Regional Partnership; Balzer and Associates, Inc.; Development Initiatives, Inc.; Western Virginia Workforce Development Board; Carilion Biomed Institute; Novozymes; Plastics One; East West DyeCom; General Electric; Wireless Medcare; Lionberger Construction; Precision Steel; Carilion TSG; Hughes Associates; Carilion Physics; Accellent Cardiology; Spectrum Engineers; AECOM; Hill Studios; Salem Specialties, Inc.; Synchrony; Shenandoah Machine & Maintenance Co., Inc.; Graham-White Mfg; Sematco, Inc.; E & W Machine; Valley Machine; J. C. Nordt; WSLS 10; WDBJ 7; Roanoke-Times; Access Advertising, The O'Connor Group; Carter Media; Wheeler Broadcasting; Blue Ridge PBS; Arcet; Overfelt & Son Welding; Lincoln Electric; New Millennium Steel; Thermal Dynamics; Miller Welders; NASCAR; Tread Corporation; Mountain Land Machine; DRP Racing; Berglund Automotive.
Lead Entity:	Burton Center for Arts and Technology
Fiscal Agent:	Roanoke County Public Schools
Contact Person:	Dr. Cecil Snead STEM Academy Coordinator 540-562-3900 csnead@rcs.k12.va.us
Academy Location:	The Governor's STEM Academy at the Burton Center for Arts and Technology 1760 Roanoke Boulevard Salem, Virginia 24153
Number Students:	The Roanoke County Governor's STEM Academy will have the capacity to enroll 226 students, grades 9–12, during the initial school year (2012–2013).
Career Pathways:	Engineering and Technology Facility and Mobile Equipment Maintenance Journalism and Broadcasting
Academy Goals and Description:	The overall goals of the Governor's STEM Academy are to provide students with the 21st-century, STEM-enriched technological skills and knowledge necessary to succeed in postsecondary education and in the world of work through authentic, rigorous, project-based work while building partnerships with parents, community and business leaders to

meet these goals.

Specific Governor's STEM Academy objects include:

- Improve academic achievement of Academy students by increasing academic rigor and relevance within selected pathways.
- Increase completion of dual enrollment courses.
- Provide workplace readiness experiences through strong partnerships with businesses.
- Increase high school graduation rates.
- Reduce dropout rates.
- Increase enrollment and retention in postsecondary education.
- Increase the number of students completing a college and workplace ready curriculum in high school.
- Reduce the number of students requiring remediation in college.
- Increase the number of industry certifications awarded to high school students.
- Increase the number of graduates employed in high-wage, high-skilled careers.

Highlights of the Program:

As a result of participating in the Governor's STEM Academy in the pathways of Engineering and Technology students will:

- Gain a deeper understanding of the skills and knowledge incorporated in their fields of study;
- Benefit from specialized, project-based courses which develop critical-thinking, problem-solving, and decision-making skills, preparing them for the 21st-century world;
- Acquire greater communication skills;
- Develop workplace readiness skills;
- Receive opportunities to earn industry certifications preparing them to be more competitive in the work force and when applying to advanced training schools or postsecondary institutions;
- Obtain meaningful, real-life, hands-on experiences in their career pathway; and
- Profit from opportunities for internships, mentorships, job shadowing, and cooperative education, which provide students with advantages when entering postsecondary education and/or the workplace.

Attachment B

The State Council of Higher Education for Virginia

Review of Governor's STEM Academy Proposal

Name of Lead Entity on Proposal: Burton Center for Arts and Technology, Roanoke Public Schools

Date of Review: 4-16-2012

The State Council of Higher Education for Virginia recommends approval of the: Roanoke County Governor's STEM Academy at the Burton Center for the Arts and Technology.

Peter Blake

Peter Blake
Director
State Council for Higher Education

4/15/12
Date

Virginia Department of Education
Governor's STEM Academy
Proposal Review Checklist

Title of Proposal: Roanoke County Governor's STEM Academy at the Burton Center for Arts And Technology

Lead Entity for Proposal: Burton Center for Arts and Technology, Roanoke County Public Schools

Date of Review: April 5, 2012

Virginia Department of Education
Governor's STEM Academy
Proposal Review Checklist

I. Partnership Capacity

Partnerships desiring to implement a Governor's STEM Academy shall provide the Department of Education with evidence of the following:

Criteria	Documentation			Comments
	Full	Partial	None	
A. An active, ongoing planning committee, including a list of members and signed certifications from each that they are willing and able to serve in that capacity. At a minimum, members must represent K-12 education (superintendent or designee), higher education, and business and industry. All partners must be represented on the committee.	X			
B. An advisory committee, including a list of members and signed certifications from each that they are willing and able to serve in that capacity.	X			
C. A written memorandum of agreement among school divisions, local businesses, postsecondary institutions, and any other partners that outlines ways in which community resources will contribute to the Governor's STEM Academy to broaden the scope of students' educational experiences.	X			
D. A statement of assurances that the Governor's STEM Academy Planning Committee has reviewed provisions of *Administrative Procedures Guide for the Establishment of Governor's STEM Academies* and agrees to follow the guidelines set forth in the document (see appendix).	X			

Criteria	Documentation			Comments
	Full	Partial	None	
E. A statement of assurances that, if applicable, an ongoing Governing Board will be established to reflect current Board of Education regulations relative to jointly operated schools and programs (see appendix).				NA
Comments:				

II. Need/Rationale for the Academy

Partnerships desiring to implement a Governor's STEM Academy shall provide the Department of Education with evidence of the following:

Criteria	Documentation			Comments
	Full	Partial	None	
A. Demonstration of the need/rationale for the Academy. This statement should be concise and state the major reasons to have a Governor's STEM Academy, including need at the state, local and/or regional levels.	X			
B. A description of the enhanced or additional offerings in science, technology, engineering, and/or mathematics (STEM) that will meet the need described above.	X			
C. A fiscal agent that is a public entity, including a certification that the entity is willing and able to serve in that capacity.	X			
Comments:				

III. Program Description

Each Governor's STEM Academy planning committee shall develop cooperatively with local school divisions, business, community, and higher education partners and have available for review and dissemination, a program description that includes:

A. A statement of program goals addressing the following criteria:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Rigorous academic content in career and technical instruction;	X			
2. An emphasis on STEM career pathways;	X			
3. Individualized high school plans to ensure course selections that are aligned with students' transition and career goals after high school;	X			
4. Evidence that graduates will complete a college and work readiness curriculum, minimally at the level specified for Commonwealth Scholars Course of Study (State Scholars Core) with the possibility of pre-approved substitution of equivalent courses where there may be more relevant course selections for a particular career pathway;	X			
5. Evidence that graduates will qualify for the Technical and/or the Advanced Technical Diplomas; and	X			
6. Incorporation of Virginia's Workplace Readiness Skills.	X			
Comments:				

B. A statement of program objectives and performance measures to:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Improve academic achievement of Academy students;	X			
2. Increase completion of dual enrollment courses;	X			
3. Provide workplace readiness experiences for students through strong partnerships with businesses;	X			
4. Increase high school graduation rates;	X			
5. Reduce dropout rates;	X			
6. Increase enrollment and retention in postsecondary education;	X			
7. Increase the proportion of students completing a college and workplace ready curriculum in high school;	X			
8. Reduce the proportion of students requiring remediation in college;	X			
9. Increase the number of industry certifications awarded to high school students; and	X			
10. Increase the number of graduates employed in high-wage, high-demand and high-skill careers.	X			
Comments:				

C. A brief description of the proposed program, including:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Site location;	X			
2. Number of students to be served;	X			
3. Grade levels;	X			
4. General curriculum design;	X			
5. List of courses to be delivered;	X			
6. Description of how/where the courses will be delivered. Courses may be delivered on a high school, technical center or community college campus, online, or in other innovative ways.	X			
7. Designation of full-day or part-day, academic-year program.	X			
Comments:				

D. Evidence of participation in the Governor's Exemplary Standards Award Program for STEM Education

	Documentation			Comments
	Full	Partial	None	
	X			.
Comments:				

E. Program and course descriptions

E.1. At least two well-articulated career pathways must be included that meet the following criteria:

Criteria	Documentation			Comments
	Full	Partial	None	
Pathway #1				
a. Must include opportunities to earn industry credentials, postsecondary certificates, diplomas or associate degrees while in high school and pursue additional industry credentials and academic degrees at the associate, bachelor's and graduate levels. These pathways may be in the same or different career clusters.	X			
b. Must be in a field identified by a statewide authority or organization, such as the Virginia Economic Development Partnership or the Virginia Research and Technology Advisory Commission, as a strategic growth area for Virginia. Examples include biosciences, information technology, automotive technology and motor sports, as well as modeling and simulation and nanotechnology **or**	X			

Criteria	Documentation			Comments
	Full	Partial	None	
c. Must address regional and local work force demand in a high-wage, high-skill field as identified by employers and work force officials.	X			
d. At least one pathway must be in a STEM-related field. This career pathway should drive the innovative capacity of the region and/or state.	X			
Comments:				

Criteria	Documentation			Comments
	Full	Partial	None	
Pathway #2				
a. Each career pathway must include opportunities to earn industry credentials, postsecondary certificates, diplomas or associate degrees while in high school and pursue additional industry credentials and academic degrees at the associate, bachelor's and graduate levels. These pathways may be in the same or different career clusters.	X			
b. Must be in a field identified by a statewide authority or organization, such as the Virginia Economic Development Partnership or the Virginia Research and Technology Advisory Commission, as a strategic growth area for Virginia. Examples include biosciences, information technology, automotive technology and motor sports, as well as modeling and simulation and nanotechnology, or	X			

Criteria	Documentation			Comments
	Full	Partial	None	
c. Must address regional and local work force demand in a high-wage, high-skill field as identified by employers and work force officials.	X			
d. Of the two pathways described, at least one must be in a STEM-related field. This career pathway should drive the innovative capacity of the region and/or the state.	X			
e. Additional career pathways may address one of the areas described above, or an area identified by the partnership as an area of interest, growth, or expansion for students in the service area of the Academy.	X			
Comments:				

E.2 List of all requirements for successful program completion.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

E.3 Academy graduates must achieve one or more of the following benchmarks:

Criteria	Documentation			Comments
	Full	Partial	None	
a. Earn one or more industry certifications or state occupational licenses, and/or demonstrate competencies on an assessment instrument recognized by postsecondary institutions such as CLEP examinations, collaboratively designed or mutually approved end-of-course tests, college placement tests, or student portfolios reviewed by a team of college and high school faculty; **or**	X			
b. Earn at least 9 transferable college credits as defined in the Early College Scholars program (includes dual enrollment, AP and other options); **or**	X			
c. Earn an Associate Degree.	X			
Comments:				

E.4 Significant work-based experience must be included representing additional instruction or training beyond the classroom such as:

Criteria	Documentation			Comments
	Full	Partial	None	
a. Cooperative Education; or	X			
b. Internships; or	X			
c. Job Shadowing; or	X			
d. Mentorships; or	X			
e. Project-based learning; or	X			
f. Service learning; or				
g. A combination of the above.				
Comments:				

F. Length of program and daily schedule: Governor's STEM Academies are defined by program content, not by the location or delivery system of courses. Evidence of the following must be submitted:

Criteria	Documentation			Comments
	Full	Partial	None	
Designation of full-day or part-day, academic-year program.	X			
Comments:				

G. Assurance from the fiscal agent that operating funds and facilities are available to support the Governor's STEM Academy and are adequate to meet the needs of the program

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

H. Materials and equipment to be provided to accomplish program goals and objectives.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

I. Evidence of an internal evaluation process to effect program improvement, including:

Criteria	Documentation			Comments
	Full	Partial	None	
1. A review of the Academy's policies, procedures, and outcomes;	X			
2. A review of the program design and instructional delivery;	X			
3. Consideration of feedback from students, staff, parents, the community, and partnership members; and	X			
4. Annual collection and reporting of data to the Department of Education related to student achievement, goal achievement, and other indicators.	X			
Comments:				

IV. Administrative Procedures

Each Governor's STEM Academy must develop and maintain procedures developed cooperatively with participating partners. There should be evidence of procedures in the four areas that follow.

A. Partnerships - The role of business and industry, public school divisions, and postsecondary institutions in the partnership. The role of workforce and economic development entities should also be included if they are among the partners.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

B. Student recruitment, selection criteria, and admissions.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

C. Code of student conduct and attendance.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

D. Transportation provided by the school division or consortium that is in compliance with all applicable federal and state regulations.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

E. Staff recruitment, selection, and assignment - The Governor's STEM Academy shall hire staff members who meet the Virginia teacher licensure requirements and/or postsecondary faculty qualifications. Where applicable, they must have industry-specific education with training and experience, including industry certification.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

F. Staff development - The program will provide appropriate staff training in addition to staff planning time.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

G. Staff evaluation – Staff will be evaluated according to the human resources policies of the agency or institution employing Academy personnel.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

H. Parent, student and community involvement

Criteria	Documentation			Comments
	Full	Partial	None	
1. Preparation for entering the Academies should begin by eighth grade.	X			
2. Students, parents, teachers, and counselors should work collaboratively to: a. Complete career interest inventories;	X			
b. Prepare academic and career plans outlining an intended course of study in high school;	X			
c. Review multiple postsecondary pathways and the steps required to pursue them;	X			
d. Participate in career assessments to identify areas students should strengthen to qualify for their selected pathways; and	X			
e. Discuss available diplomas, seals, and other recognitions including admission to specialized programs such as Governor's Academies.	X			

Documentation of insurance, budget, and other fiscal information

	Documentation			Comments
	Full	**Partial**	**None**	
Insurance	X			
Budget (from appendix)	X			
Budget Narrative	X			
Other				
Comments:				

Attachment D

Proposal to Establish the

Roanoke County Governor's STEM Academy at the Burton Center for Arts and Technology

Submitted
to the
Virginia Board of Education

April 26, 2012

Table of Contents

Introduction 4
Rationale and Enhancements 5
Science, Technology, Engineering, and Mathematics 5
Transportation, Distribution, and Logistics 7
Arts, Audio/Video Technology, and Communications 8
Partnership Capacity 10
Program Description 11
Statement of Goals 11
Program Objectives and Performance Measures 13
Program Details 17
Governor's Exemplary Standards Award Program for CTE 17
Program and Course Descriptions 17
Length of Program and Daily Schedule 17
Statement of Assurances 18
Materials and Equipment 18
Description of Proposed Program Evaluation 19
Administrative Procedures 20
Partnerships 20
Student Recruitment, Selection Criteria, and Admissions 20
Code of Student Conduct and Attendance 22
Transportation 22
Staff Recruitment, Selection, and Assignment 22
Staff Development 23
Staff Evaluation 23
Parent, Student, and Community Involvement 23
Budget and Documentation of Insurance 24

Appendices 25

Appendix A: Planning Committee Members..... 26

Appendix B: Advisory Committee Members..... 44

Appendix C: List of Partners..... 62

Appendix D: Memorandum of Agreement with Virginia Tech and Virginia Western Community College..... 64

Appendix E: Internship Agreements..... 81

Appendix F: Associate Degree..... 108

Appendix G: Plans of Study..... 110

Appendix H: Student Admission Forms..... 128

Appendix I: Assurance Statements..... 142

Appendix J: Summer Camp Information..... 145

Appendix K: Budget..... 148

Appendix L: Certificate of Insurance..... 150

Introduction

The Roanoke County Governor's STEM Academy will develop and expand offerings for the secondary school population of Roanoke County Public Schools. These offerings will emphasize science, technology, engineering, mathematics (STEM), critical knowledge, critical thinking, and credentials that prepare students for high-demand, high-wage, and high-skill careers to meet the evolving work force trends and needs within the Commonwealth, national, and global markets.

The Roanoke Valley is the hub of Southwest Virginia's health care, retail, manufacturing, and technology industries. Roanoke County Public Schools must provide students with the 21st Century Skills needed to meet these work force demands of the Roanoke Valley. Work force development and area demographics make the Roanoke Valley a key factor in Virginia's economic recovery.

The Roanoke County Governor's STEM Academy will integrate STEM education and training opportunities for career and technical education faculty, academic teachers, and administrators in order to fill the work force demands identified in the following career clusters and pathways:

Career Cluster	Pathway
Science, Technology, Engineering, and Mathematics (STEM)	Engineering and Technology
Transportation, Distribution, and Logistics	Facility and Mobile Equipment Maintenance
Arts, Audio/Video Technology, and Communications	Journalism and Broadcasting

The Roanoke County Governor's STEM Academy will be a part of Roanoke County Public Schools' Burton Center for Arts and Technology. The Roanoke County Governor's STEM Academy will serve as the STEM instructional center for all five high schools, offering two to six credits with an alternating day block schedule.

Rationale and Enhancements

The Roanoke County Governor's STEM Academy will focus on three specific cluster areas – Science, Technology, Engineering, and Mathematics; Transportation, Distribution, and Logistics; and Arts, Audio/Video Technology, and Communications. The selected programs will increase options for Roanoke County students to obtain the knowledge and credentials that will prepare them to successfully transition through postsecondary pathways as they prepare for existing and emerging high-demand, high-wage, and high-skill careers in the Roanoke Valley and across the Commonwealth. The Virginia Employment Commission expects long-term (through 2018) growth of 13 percent in media, 5.28 percent in engineering and architecture, and 20.13 percent in computer and mathematical occupations.

Science, Technology, Engineering, and Mathematics

According to the U.S. Bureau of Labor Statistics, engineering employment should grow about 11 percent through 2016. The highest projected growth areas in engineering are environmental, biomedical, industrial, and civil engineering specialties, ranging from 18 to 25 percent. The U.S. Bureau of Labor Statistics estimates that the median annual salary for engineering technologists is $56,850. The *Occupational Outlook Handbook, 2010–11 Edition,* suggests opportunities will be best for individuals with an associate degree or other

postsecondary training in engineering technology. The report also states, "Prospective engineering technicians should take as many high school science and math courses as possible to prepare for programs in engineering technology after high school." The Roanoke County Governor's STEM Academy and its Center for Engineering will meet local and state criteria as students prepare for high-wage, high-skill occupational areas.

Engineering course offerings will include an introduction to engineering, methods, research, internship, statics, and economics. The Roanoke County Governor's STEM Academy will provide pathways to support students seeking both two-year associate degrees and advanced four-year degrees from institutions such as Virginia Tech.

The Roanoke County Governor's STEM Academy will expand on current partnership avenues including, but not limited to, the C-Tech2 - Computers and Technology at Virginia Tech summer engineering camp, professional development programs for CTE teachers in robotics and mechatronics, and robotics competitions mentored by Virginia Tech staff and students. Students in the Roanoke County Governor's STEM Academy interested in mechatronics and robotics will also draw upon the expertise of faculty at Virginia Western Community College as well as the Virginia Tech Department of Mechanical Engineering.

Graduates of a mechatronic engineering program can work in many industries, including automotive, manufacturing, gas and oil, mining, transport, defense, robotics, aerospace, and aviation. In addition, they have a wide variety of multi-disciplinary skills that will allow them to take traditional engineering positions. Discussions with key industry leaders in the Roanoke Valley, including Optical Cable and Accellent, are crucial in maintaining lab and equipment updates with our mechatronics and robotics program. These partnerships ensure that mechatronics and robotics is a relevant focus in our STEM Academy.

Transportation, Distribution, and Logistics

Virginia hosts six of NASCAR's top series racing events each year and is home to NASCAR venues in Bristol, Richmond, and Martinsville. In addition to the NASCAR venues, Virginia is also home to the South Boston Motor Speedway, Virginia's International Raceway, the AMA Pro Motocross and Extreme Dirt Tracks, the Motor Mile Speedway, The Lonesome Pine Raceway, and the Franklin County Speedway. A report by Dick Dell, the Executive Director for the Advanced Vehicle Research Center in southwest Virginia, noted that "the region has significant assets that support the auto racing industry."

Major Roanoke area employers include auto dealers and body shops seeking employees with upper-level technical skills. Local employment forecasts indicate approximately 2,500 potential positions in related pathway fields over the next six years. Nationally, NASCAR teams alone employ more than 20,000 workers. Through the natural blending of STEM curriculum with the CTE content, graduates of this pathway will be prepared for careers in design, fabrication, assembly, and repair. Our business partners, such as Berglund Automotive, Lincoln Electric, Thermal Dynamics, DRP Racing, and NASCAR, continually advise us that according to the U.S. Department of Labor's *Occupational Outlook Handbook, 2010–11 Edition*, designers and mechanical engineers are an integral part of the motorsports industry during the design stage to improve product reliability and manufacturing efficiency.

In addition to motorsports, data from the Virginia Workforce Connection's occupational profile states that the need for technicians and mechanics is expected to increase by 5 percent over the next seven years and that "technicians and mechanics must continually adapt to changing technology and repair techniques." The report also notes that "... the increasing use of advanced technology in automobiles will also lead to new opportunities for repair technicians,

especially those with specialized skills or certifications. Workers with expertise in certain makes or models of vehicles, or with an advanced understanding of certain systems, such as hybrid-fuel technology, will be in demand." The report also notes a strong need for people with good diagnostic and problem-solving skills. Roanoke County Governor's STEM Academy's motorsports curriculum also supports the skill sets of reparation, electronic diagnostics, and hybrid-fuel technologies. Through the Roanoke County Governor's STEM Academy, students will be afforded a combination of foundational coursework in motorsports, auto service technology, welding, mechatronics, CADD, robotics, and precision machining.

Arts, Audio/Video Technology, and Communications

The Roanoke Valley area is home to more than thirty broadcast and media outlets reaching as far as the Alleghany Highlands, Southside Virginia, and far Southwest Virginia to serve more than 300,000 people. In addition to the broadcast and media outlets, there are numerous advertising agencies and Web-design firms with national and global client bases. With the Virginia Employment Commission expecting long-term growth of 13 percent in media, the Roanoke County Governor's STEM Academy and its Center for Mass Communication are well positioned to meet the work force demands of this highly technical industry.

Students will participate in rigorous courses that teach the necessary skills to be successful in areas such as television and video production, Web design, technical and news writing, digital image manipulation, publishing, and advertising. The internship opportunities with the Roanoke County Governor's STEM Academy's business partners will provide our students real-world experience and training in all of the aforementioned areas. Television stations WSLS and WDBJ; Wheeler Broadcasting radio stations K92, Q99, Star County, and WFIR; the *Roanoke Times* newspaper; Access Advertising; The O'Connor Group; and Carter

Media all allow extended placement of our students for the purposes of training, job shadowing, and gaining hands-on experience in a broad variety of communications and media.

As much as any industry, media continues to evolve in a highly technical direction. According to the *Occupational Outlook Handbook, 2010-11 Edition*, potential employees in the media industry who have extensive training in these new technologies have a significant advantage when competing for jobs. Roanoke County Governor's STEM Academy will offer state-of-the-art equipment and software to ensure students gain proficiency in digital manipulation, program production, and video editing. STEM education and training, ongoing professional development, and partnerships with Virginia Western Community College and Virginia Tech will help our highly-trained faculty stay abreast of industry trends and will keep the program at the forefront of evolving technology.

Throughout the process, the planning committee has identified additional pathways that will afford more STEM opportunities for students. An ongoing analysis of occupational trends will continue with the planning and advisory committees to ensure the relevance of future pathways. A focus on 21st Century Skills development enmeshed with the global landscape will be the foundation for all program development at the Roanoke County Governor's STEM Academy.

Partnership Capacity

Partnerships, both business and higher education, are integral to the success of Roanoke County Governor's STEM Academy at the Burton Center for Arts and Technology (BCAT). With deepening commitments from long-established partners and the fostering of new relationships, STEM Academy students will be exposed to cutting-edge research, the latest technologies, and real-world job shadowing and internships. In addition, students will meet and make connections with potential employers and prominent departmental personnel within institutes of higher education. In addition to the experiences they will offer our students, business partners will also provide materials and financial support to the Academy. Business partners will also be well represented on individual and Academy-wide advisory committees referenced below. It is through this process that the STEM Academy will provide students with the workplace readiness skills needed both locally and globally, now and in the near future.

Planning and advisory committees have been formed to ensure consistent and smooth operation of the Roanoke County Governor's STEM Academy. These committees will develop procedures, policies, and programs in alignment with Roanoke County Public School policy; Governor's Exemplary Standards Award Program; and Governor's Science, Technology, Engineering, and Mathematics Academy guidance manual. The advisory committee will confer as needed to assess the progress and to address challenges that may become evident in the operation of the Academy.

Each of the plans of study pathways will have an advisory board that will meet semiannually to oversee and guide the programs. These advisory boards are composed of educational professionals and industry partners. It is also the task of these boards to consider

requests and address concerns from the board itself, teachers, parents, students, and the community at large.

Cooperative partnerships are invaluable to the Academy and will remain a priority in the planning and growth of the STEM Academy. For planning and advisory committee members and cooperative partnership agreements, including the Virginia Tech College of Engineering articulation agreement and the MOAs with Virginia Western Community College, see Appendices A - E.

Program Description

Statement of Goals

The Roanoke County Governor's STEM Academy will provide rigorous academic content within its career and technical education (CTE) instruction concentrating on three career pathways: Engineering and Technology, Journalism and Broadcasting, and Facility and Mobile Equipment Maintenance. Student learning and achievement will be enhanced through the integration of academics, STEM curriculum, applied technology, and increased participation in career and technical student organization leadership events.

The Academy will include professional development opportunities utilizing integrated lesson plan development between academics, STEM, and CTE staff, along with concentrations on integrated application of mathematics and science. Academic content integration will be facilitated through enrollment opportunities in the Integrative STEM Education graduate program at Virginia Tech. Coursework in STEM Education Foundations, Pedagogy, Trends, Literacy, Research, and Design may be included as part of the certificate or degree program. Faculty and guidance department staff will participate in career cluster professional development

to further facilitate student enrollment. Each of these tools will be used to connect and integrate academic content areas.

Plans of study will be jointly developed with all five high schools to provide cross-disciplinary experiences within the Roanoke County Governor's STEM Academy. As a result of this collaboration, a STEM Curriculum Resource Guide will be developed during the 2012–2013 school year for distribution to the high schools focusing on science, technology, engineering, and mathematics applications. The Roanoke County Governor's STEM Academy will continue to grow and enhance the rigor of career and technical content by expanding certification and licensure offerings; increasing dual enrollment status; increasing workplace experiences and internships; utilizing state-of-the-art technology; and expanding the college and workplace readiness curriculum.

In coordination with Roanoke County Public Schools' guidance services, individualized high school plans are initiated in a variety of ways. Interest surveys and career planning begin early in middle school to help outline course selection in preparation for high school entrance and beyond. A three-step process is outlined within the program of studies, including selecting a career cluster or pathway; deciding upon a diploma type; and choosing courses related to the career pathway and diploma choice. This process ensures that course selection for these individualized high school plans of study help students align with postsecondary transition for their career goals and complete a college and work readiness curriculum for a particular career pathway.

A goal for the Roanoke County Governor's STEM Academy graduates will be to complete rigorous academic content with career and technical college and work readiness curriculum. Students will strive to earn Virginia's Advanced Mathematics and Technology Seal

as well as the Career and Technical Education Seal upon graduation. High school diploma requirements will include up to nine high school CTE course credits that can be earned from the Roanoke County Governor's STEM Academy, including corresponding credentials and license. The Academy will seek to integrate the STEM curriculum so that students may achieve the requirements for an Advanced Diploma. Additionally, three or more CTE elective course options will broaden the traditional high school experience by offering postsecondary opportunities, industry certification, and additional field experience to enhance the students' STEM education and to emphasize STEM career pathways. Completion of this goal will be evidenced through student transcripts, earned diploma seals, and industry certifications.

Each CTE course utilizes Virginia's Workplace Readiness Skills and teachers develop individual class lessons supporting these competencies. Business partners work with program areas to offer enrichment seminars addressing these skills via program area advisory councils. Internships and workplace shadowing experiences offer Academy students reinforcement and mentoring. Each teacher also has access to the Virginia Workplace Readiness Skills Instructional Resources, provided through the Virginia DOE and the CTE Resource Center. Students have the opportunity to take the Workplace Readiness Skills for the Commonwealth assessment.

Program Objectives and Performance Measures

The Roanoke County Governor's STEM Academy will address the program objectives outlined in the Virginia Board of Education's *Establishing a Governor's Science, Technology, Engineering and Mathematics (STEM)Academy: A Guidance Manual.* Baseline data will be collected during the 2012–13 school year. The Roanoke County Governor's STEM Academy goals and performance measures are outlined below.

1. *Improve academic achievement of Academy students by increasing academic rigor and relevance within selected pathways.*

    - Increase the percentage of students taking Algebra II before graduation.
    - Increase the percentage of students taking four years of science and mathematics before graduation.
    - Increase the number of Academy students meeting the requirements of the Advanced Studies Diploma.
    - Within three years, close the achievement gap in mathematics and science between the division averages in Algebra II and Chemistry SOL scores and the Academy mechatronics/robotics and motorsports students. Using the spring 2011 scores as a baseline, mechatronics/robotics and motorsports students scored 7 percent lower in Algebra II and 3 percent lower in Chemistry.
    - Continue SOL incremental growth in Engineering and Mass Communication pathways.

2. *Increase completion of dual enrollment courses.*

    - Each Academy pathway is articulated with a postsecondary institution with a minimum of nine potential dual enrollment credits.
    - Dual enrollment and Advanced Placement course completion within Roanoke County Public Schools has increased by 26 percent since 2009. An increase in student enrollment within these programs is a direct result of the partnership with Virginia Western Community College (VWCC), Virginia Tech, and the Virginia Advanced Study Strategies (VASS). Through continuing partnerships with these entities, the Academy plans to increase the number of Academy students earning dual enrollment or AP credit in the 2013–2014 school year.

3. *Provide workplace readiness experiences through strong partnerships with businesses.*

    - Faculty, advisory board members, and other stakeholders will continue to recruit exceptional business partnerships for student exposure to the work world and prospective careers.

- Work-based experiences will include supervised internships, job shadowing, mentoring, simulations, project-based learning, and guest speakers.
- Students will apply workplace readiness skills and concepts mastered through their CTE programs of study in their workplace internships, job shadowing, and cooperative education experiences.

4. *Increase high school graduation rates.*

- The Roanoke County Public Schools 2010–2011 high school graduation rate was 91.8 percent.
- The Academy will seek to increase the number of Academy participants who will meet the requirements for an Advanced Studies Diploma.

5. *Reduce dropout rates.*

- The Roanoke County Public Schools 2010–2011 dropout rate was 0.67percent.
- The Academy will strive to further reduce the Roanoke County Public Schools dropout rate.

6. *Increase enrollment and retention in postsecondary education.*

- Academy students will have an opportunity to earn at least nine dual enrollment college credits, giving students a community college transcript prior to graduating from high school.
- Academy students may potentially meet all requirements for a transferable Associates Degree prior to high school graduation.
- Academy graduates will take the CTE Completer Follow-Up Report survey to determine successful enrollment and retention in postsecondary institutions one year after high school graduation.
- Academy graduates will participate in senior exit surveys and interviews conducted by the Roanoke County Public Schools' Guidance Department.

7. *Increase the number of students completing a college and workplace ready curriculum in high school.*

    - Increase enrollment in Academy programs annually.
    - Baseline data will be established in the 2012–2013 school year with criteria including diploma type, dual enrollment credit earned, program completer status, and industry credentials earned.
    - Increase the enrollment of nontraditional populations in Academy programs.

8. *Reduce the number of students requiring remediation in college.*

    - Academy students will meet the basic entrance criteria determined by the VCCS.
    - Preparation and remediation sessions will be provided for Academy students who are scoring below acceptable levels in English and mathematics classes.
    - Increase the percentage of students who earn advanced proficiency on the English 11 and Algebra II SOL.

9. *Increase the number of industry certifications awarded to high school students.*

    - Baseline data will be established in the 2012–2013 school year with the criterion to include industry licensure and credentials earned.
    - Increase the percent of Academy students earning industry credentials or licensures to provide well-trained workers to benefit the Southwest Virginia work force and to meet employment needs across the Commonwealth.

10. *Increase the number of graduates employed in high-wage, high-skilled careers.*

    - Academy graduates will be prepared for employment within identified career pathways and related occupations as indicated through U.S. Census and Virginia Employment Commission demographic data collection instruments.

Program Details

The Roanoke County Governor's STEM Academy's primary location will be the Burton Center for Arts and Technology. Core STEM courses within each pathway will be taken at Burton Center, while other required and elective classes will be taken face-to-face at the student's base high school or online through Roanoke County Public Schools Virtual School. Based on current enrollment trends, the anticipated number of students to be served is 226 in grades nine through twelve during 2012–2013. The programs will run on a full-day academic-year schedule.

Governor's Exemplary Standards Award Program for CTE

The Roanoke County Governor's STEM Academy will adhere to the Governor's Exemplary Standards Award Program for Career and Technical Education.

Program and Course Descriptions

Roanoke County Governor's STEM Academy plans of study are attached in Appendix G. These plans of study include all requirements for successful program completion. See Appendix G for industry certifications and dual enrollment and/or AP credits. See Appendix F for early Associates Degree opportunity. CTE course descriptions, along with CTSO affiliations and sample leadership events, are available in Appendix G.

Internships or project-based learning experience are requirements for all Roanoke County Governor's STEM Academy plans of study.

Length of Program and Daily Schedule

Each plan of study is a full-day, academic-year program. The Center for Engineering and the Center for Mass Communication are four-year programs that combine coursework at Burton Center for Arts and Technology and students' base schools. The Motorsports Technology

program and the Mechatronics/Robotics program will be taken at the Burton Center for Arts and Technology. All other courses in the two plans of study will be taken at the base school.

Statement of Assurances

See Appendix I.

Materials and Equipment

Materials and equipment for the Roanoke County Governor's STEM Academy will follow state purchasing guidelines and may be obtained through donations from local industry and higher education partners, local school division funds, state equipment funds, and the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV).

Materials purchased for the Roanoke County Governor's STEM Academy will be obtained through local school division instructional and career and technical education budget funds.

Equipment purchased with state or federal funds will be selected from the state-approved equipment list for CTE programs. Equipment purchased through the Perkins Grant will meet the following applicable regulations.

- R-1 Strengthen the academic and career and technical skills of students participating in career and technical education programs, by strengthening the academic and career and technical education programs, by strengthening the academic and career and technical education components of such programs through the integration of academics with career and technical education programs through a coherent sequence of courses, such as career and technical programs of study described in the section 122©(1)(A) to ensure learning in:
    - A. The core academic subjects
    - B. Career and technical education subjects

- R-2 Link career and technical education at the secondary level and career and technical education at the postsecondary level, including offering the relevant elements of not less than one career and technical program of study
- R-3 Provide students with a strong experience in and understanding of all aspects of an industry, including work-based learning experiences
- R-4 Develop, improve, or expand the use of technology in career and technical education, including (B) providing career and technical education students with the academic and career and technical skills (including mathematics and science knowledge that provides a strong basis for such skills) that lead to entry into the technology fields
- R-7 Initiate, improve, expand, and modernize quality career and technical education programs, including relevant technology

Description of Proposed Program Evaluation

The aforementioned planning and advisory committees, the individual program advisory boards, the divisionwide instructional evaluation process, and various academic and CTE assessments provide feedback and data for internal evaluation of the Roanoke County Governor's STEM Academy. STEM Academy planning and advisory committees will continue to meet regularly throughout the establishment process, and once the Academy is established, a specific and purposeful schedule will be developed. The individual advisory boards will meet annually and confer as needed to ensure fidelity to articulated goals and direction. Roanoke County Public Schools will incorporate its ongoing instructional evaluation process into all STEM Academy programs and applicable courses. This process was initiated by the superintendent two years ago and includes weekly student performance evaluations by school leadership teams shared monthly with a central office governance committee to ensure early and appropriate interventions for struggling students. This process also serves as a professional learning community to aid faculty and staff in the acquisition and use of best practices. In

addition, reports to the Virginia Department of Education, including the CTERS report, and the SEDF report, and the state report card, provide feedback for the internal evaluation process.

Administrative Procedures

Partnerships

As outlined in the Partnership Capacity section on page nine, business and higher education partnerships are the cornerstone for Roanoke County's Governor's STEM Academy at the Burton Center for Arts and Technology. The Academy is being developed in cooperation with its business and higher education partners, and they will continue to guide and give direction as it matures.

Student Recruitment, Selection Criteria, and Admissions

Student recruitment plays an important role in the successful placement of students in their career choice pathway. The Roanoke County Public School System provides comprehensive guidance and information to students and parents to assist students with selecting coursework appropriate for individual career selection. Recruitment for potential STEM Academy students will begin in middle school. Students build individual Academic and Career Portfolios, based on developmental research and surveys of each student's interests, values, and abilities. Guidance personnel work individually with students to assist with career aptitude and interest surveys, and individualized plans of study. These activities lay the foundation for students to select course-appropriate curriculum to help them reach their goals.

Middle school CTE curriculum includes an introduction to Robotics for seventh and eighth graders. Using resources, including the Technology Student Association, Synergistic modules, and First Lego League competitions, students in the Technological Systems course

have opportunities to explore career pathways that promote Academy recruitment. Summer camps are available for rising sixth- through rising eighth-grade students in Robotics and TV Production, held at Burton Center for Arts and Technology (BCAT). See Appendix J for Description and Registration Form.

In the fall of the eighth-grade year, presentations regarding all Specialty Centers, including the STEM Academy programs and other BCAT programs are made in-person to entire eighth-grade classes at each middle school. This is followed by a tour for all eighth graders of BCAT, where they see students taking part in these classes. Additionally, following the tours, there is an evening Open House for all parents and students at BCAT.

Counselors in the individual schools then go to classrooms to present the registration process to all students. Our registration guide is available in print to all eighth-grade students and is posted online in early January. An additional booklet highlights our specialty centers and gives more in-depth information about them. Elective fairs are available at each middle and high school to give the students an opportunity to ask specific questions of representatives of all BCAT programs. PTAs sponsor an evening registration orientation for parents at each middle and high school just prior to the registration process. At any time, counselors and teachers from home schools, as well as BCAT, will meet with parents and students to answer individual questions.

Engineering Center and Mass Communications Center applications require general information, a writing sample, teacher-rating scales, a school counselor record form, and a transcript. Engineering Center applicants also complete a short form entitled Metropolitan Achievement Test (MAT). Applications for Mechatronics/Robotics and Motor Sports Technology programs are also required. A rubric will be used to assist with the objective review

of the applications and the student interviews. Special recruitment for non-traditional students and special-population students will be included. Please see Appendix H for samples of the applications for each of these STEM programs.

Code of Student Conduct and Attendance

Roanoke County Public Schools outline student conduct, attendance requirements, and transportation in the Student Conduct Code publication provided annually to each Roanoke County Public Schools' student. Each student and parent is required to sign an "acknowledgment of receipt" of the publication each school year. This publication would also be issued to students in the Roanoke County Governor's STEM Academy.

Transportation

Transportation to and from Burton Center for Arts and Technology will be provided by Roanoke County Public Schools. Schedules are coordinated with students' base schools.

Staff Recruitment, Selection, and Assignment

The policy, procedures, and regulations for the Governor's STEM Academy at the Burton Center for Arts and Technology (BCAT) will be subsumed under the current Roanoke County Public Schools' policy, procedures, and regulations. The recruiting process is networked throughout our community to attract specialists in each field of special study. Interviews of selected personnel are conducted by the building level administrator at BCAT, the director of instruction, a subject area coordinator, and any other individual deemed necessary to the process. Selections are made based upon the candidate's expertise in the field, licensure requirements, and criteria for acceptance by the Virginia Western Community College (VWCC) and Southern Association of Colleges and Schools (SACS).

Staff Development

Roanoke County Public Schools provide high-quality professional development "to facilitate the successful implementation of instructional programs that promote student achievement at the school and classroom levels" (Policy 5.47). Academy faculty will be provided opportunities to complete industry certifications relevant to the content area and attend STEM and CTE regional, state, and national workshops. In-house training opportunities and consultants will be used as appropriate. Workshops that demonstrate successful CTE/STEM integration techniques will be included, as well as cross trainings with guidance and Academy representatives.

Staff Evaluation

Staff will be evaluated according to Roanoke County Public Schools' licensed employee evaluation procedures. Tenured teachers are to be evaluated annually, alternating between full evaluation and partial evaluation every other year. Untenured teachers are to be evaluated annually.

Parent, Student, and Community Involvement

1. Preparation

Students will have the opportunity in the eighth grade to tour the Academy programs, to meet with faculty and students to discuss the Academy's curriculum and learning environment, and to complete relevant interest and aptitude surveys to help identify career pathway.

2. Collaboration: Students, parents, teachers, and counselors will work collaboratively.

a. Students will complete interest inventories in middle school, and throughout high school, under the guidance of school counselors or classroom instructors who monitor and access individual career pathways identified by the students.
b. Students will work with counselors to create academic and career plans outlining an intended course of study in high school. These career plans will be reviewed annually

prior to course registration and adjusted as needed to meet the needs and interests of the learner.

c. Postsecondary pathways will be reviewed and discussed with the learner's career plan. Where appropriate, program options, including industry certifications and credentialing, career studies, associate or technical college degrees, and advanced college degree programs will be reviewed.
d. Career assessments will be available to students through the guidance department and classroom curriculum to help students identify areas that will strengthen their qualifications for selected pathways.
e. Diplomas, seals, other recognitions, and admission requirements to specialized programs, such as the Governor's Academies, are discussed with the learner and parents through parent-teacher conferences, student registration meetings and guidance programs offered at the school. Information and criteria descriptions are also available in the student registration guide and through the school division's Web site.

Budget

The Governor's STEM Academy has an operating budget of over $350,000. An additional $148,000 has been identified as in-kind contributions. State, local, and federal funds will be used to support activities of the Academy. The majority of the funds will be allocated for personnel and equipment. See Appendix K for the complete budget.

Documentation of Insurance

See Appendix L

Appendices

Appendix A:

Planning Committee Members

Roanoke County Governor's STEM Academy
Planning Committee

Part A

Name	Affiliation	Title
Julian Barnes	RCPS	Coordinator of Science
Dr. Kathy Beard	RCPS	Coordinator of CTE
Linda Bowden	RCPS	Coordinator of Mathematics
Dan Horine	VWCC	Automated Manufacturing Instructor
Fran Kiker	RCPS	Coordinator of Guidance
Joe LeGault	RCPS	Coordinator of English
Dr. Sue Magliaro	Virginia Tech - School of Education	Director
Reedy Mason	Mason Mechanical Labs	Part Owner
Chris Overfelt	RCPS/VWCC	Instructor/Adjunct Faculty
Jim Poythress	VWCC – School of Business, Engineering, and Technology	Dean
Jeannette Rader	VWCC	Career Coach
Eric Salo	RCPS	Director, The Center Mass Communication
Susheela Shanta	Development Initiatives Inc./RCPS	President/Director, The Center for Engineering
Dr. Cecil Snead	RCPS	Director of Instruction, Technology, CTE, and Adult Education
Jason Suhr	RCPS	Principal of BCAT

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: Julian Barnes

Title: Coordinator of Science

Affiliation: RCPS

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Julian J Barnes
Signature

11.29.11
Date

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: Dr. Kathryn H. Beard

Title: Coordinator, Career and Technical Education

Affiliation: Roanoke County Schools

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

K Beard 11/28/11

Signature Date

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: Linda Bowden

Title: Coordinator of Mathematics

Affiliation: RCPS

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Linda W. Bowden — Signature

November 29, 2011 — Date

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: Dan Horine

Title: Program Head, Mechatronics/Energy Management Systems

Affiliation: Virginia Western Community College

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Signature

11-29-11

Date

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: Fran Kiker

Title: Coordinator of Guidance

Affiliation: RCPS

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Fran Kiker
Signature

29 Nov 2011
Date

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: Joe LeGault

Title: Coordinator of English, ESL, and Virtual School

Affiliation: RCPS

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Joe LeGault
Signature

11/29/2011
Date

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: Susan G. Magliaro

Title: Director, School of Education

Affiliation: Virginia Tech

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Susan G. Magliaro
Signature

November 23, 2011
Date

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: J. Reedy Mason

Title: Teacher at Burton Center for the Arts and Technology

Affiliation: Roanoke County Schools

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Signature

November 29, 2011
Date

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: Chris Overfelt

Title: Welding Teacher

Affiliation: RCPS

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Christopher C. Overfelt
Signature

11/28/11
Date

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: James W. Poythress

Title: Dean, School of Business, Engineering, & Technology

Affiliation: Virginia Western Community College

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

James W. Poythress 11/23/11

Signature Date

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: S. Jeanette Rader

Title: Career Coach

Affiliation: Virginia Western Community College

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

S. Jeanette Rader
Signature

11/29/11
Date

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: Eric Salo

Title: Director of the Center for Mass Communications at Burton

Affiliation: RCPS

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Eric Salo

Signature

11/30/11

Date

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: SUSHEELA SHANTA

Title: DIRECTOR - CENTER FOR ENGINEERING

Affiliation: RCPS

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Susheela Shanta
Signature

Nov. 28, 2011
Date

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: Cecil Snead

Title: Director of Secondary Instruction/Technology, CTE & Adult Ed.

Affiliation: RCPS

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Signature _____ Date 11-29-11

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: Jason Suhr

Title: Principal, Burton Center for Arts and Technology

Affiliation: Roanoke County Public Schools Employee

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Signature

11/22/11
Date

Appendix B:

Advisory Committee Members

Roanoke County Governor's STEM Academy
Advisory Committee

Part B.

Name	Affiliation	Title
Craig Balzer	Balzer and Associates Inc.	Chairman of the Board
Julian Barnes	RCPS	Coordinator of Science
Dr. Kathy Beard	RCPS	Coordinator of CTE
Linda Bowden	RCPS	Coordinator of Math
Dr. Brenda Brand	Virginia Tech – Science Education	Associate Professor
Dan Horine	VWCC	Automated Manufacturing Instructor
John M. Hull	Roanoke Regional Partnership	Director of Research
Fran Kiker	RCPS	Coordinator of Guidance
Dr. Betti Kreye	Virginia Tech – Mathematics Education	Clinical Assistant Professor
Dr. Lorraine Lange	RCPS	Superintendent
Joe LeGault	RCPS	Coordinator of English
Dr. Sue Magliaro	Virginia Tech – School of Education	Director
Jim Poythrress	VWCC - School of Business, Engineering, and Technology	Dean
Dr. Cecil Snead	RCPS	Director of Instruction, Technology, CTE, and Adult Education
Jason Suhr	RCPS	Principal of BCAT
Deloris Vest	Western Virginia Workforce Development Board	President

Advisory Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Advisory Committee Member

Name: R. CRAIG BALZER

Title: CHAIRMAN

Affiliation: GENERAL ADVISORY COUNCIL TO CAREER AND TECH ED

My signature below certifies my willingness to actively participate on the Advisory Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

R. Craig Balzer
Signature

12/12/11
Date

Advisory Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Advisory Committee Member

Name: Julian Barnes

Title: Coordinator of Science

Affiliation: RCPS

My signature below certifies my willingness to actively participate on the Advisory Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Julian J. Barnes
Signature

11-29-11
Date

Advisory Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Advisory Committee Member

Name: Dr. Kathryn H. Beard

Title: Coordinator, Career and Technical Education

Affiliation: Roanoke County Schools

My signature below certifies my willingness to actively participate on the Advisory Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Dr Kathryn Beard
Signature

11/22/11
Date

Advisory Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Advisory Committee Member

Name: Linda Bowden

Title: Coordinator of Math

Affiliation: RCPS

My signature below certifies my willingness to actively participate on the Advisory Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Linda W. Bowden — November 29, 2011

Signature — Date

Advisory Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Advisory Committee Member

Name: Brenda Brand

Title: Associate Professor in Science Education

Affiliation: Virginia Tech

My signature below certifies my willingness to actively participate on the Advisory Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Brenda R. Brand
Signature

11/23/2011
Date

Planning Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Planning Committee Member

Name: Dan Horine

Title: Program Head, Mechatronics/Energy Management Systems

Affiliation: Virginia Western Community College

My signature below certifies my willingness to actively participate on the Planning Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Signature _____ Date 11-29-11

Advisory Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Advisory Committee Member

Name: John M. Hull

Title: Director of Research

Affiliation: Roanoke Regional Partnership

My signature below certifies my willingness to actively participate on the Advisory Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

John M. Hull
Signature

11-29-11
Date

Advisory Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Advisory Committee Member

Name: Fran Kiker

Title: Coordinator of Guidance

Affiliation: RCPS

My signature below certifies my willingness to actively participate on the Advisory Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Fran Kiker

Signature

29 Nov 2011

Date

Advisory Committee Certification

Roanoke County STEM Academy at Burton Center for Art and Technology

Advisory Committee Member

Name: Betti Kreye

Title: Clinical Associate Professor

Affiliation: Virginia Tech

My signature below certifies my willingness to actively participate on the Advisory Committee for the proposed Roanoke County STEM Academy at Burton Center for Arts and Technology.

Betti C Kreye
Signature

12-6-11
Date

Advisory Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Advisory Committee Member

Name: Lorraine S. Lange

Title: Superintendent

Affiliation: RCPS

My signature below certifies my willingness to actively participate on the Advisory Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Lorraine S Lange
Signature

11/29/11
Date

Advisory Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Advisory Committee Member

Name: Joe LeGault

Title: Coordinator of Language Arts

Affiliation: RCPS

My signature below certifies my willingness to actively participate on the Advisory Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Joe LeGault

Signature

11/29/2011

Date

Advisory Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Advisory Committee Member

Name: Susan G. Magliaro

Title: Director, School of Education

Affiliation: Virginia Tech

My signature below certifies my willingness to actively participate on the Advisory Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Susan G Magliaro
Signature

November 23, 2011
Date

Advisory Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Advisory Committee Member

Name: James W. Poythress

Title: Dean, School of Business, Engineering, & Technology

Affiliation: Virginia Western Community College

My signature below certifies my willingness to actively participate on the Advisory Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

James W. Poythress
Signature

11/23/11
Date

Advisory Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Advisory Committee Member

Name: Cecil Snead

Title: Director of Secondary Instruction/Technology, CTE & Adult Ed.

Affiliation: RCPS

My signature below certifies my willingness to actively participate on the Advisory Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Signature

11-29-11

Date

Advisory Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Advisory Committee Member

Name: Jason Suhr

Title: Principal, Burton Center for Arts and Technology

Affiliation: Roanoke County Public Schools

My signature below certifies my willingness to actively participate on the Advisory Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Signature _____ Date 11/22/11

Advisory Committee Certification

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Advisory Committee Member:

Name: **Doloris E. Vest**

Title:**President**

Affiliation:

Western Virginia Workforce Development Board
108 N. Jefferson St. Roanoke, VA 24016, 540-767-6149

My signature below certifies my willingness to actively participate on the Advisory Committee for the proposed Roanoke County STEM Academy at The Burton Center for The Arts and Technology.

Doloris E. Vest
Signature

November 29, 2011
Date

Appendix C:

List of Partners

Partnerships

Accellent Cardiology
Access Advertising
AECOM
Arcet
Berglund Automotive
Balzer and Associates, Inc.
Blue Ridge PBS
Carilion Biomed Institute
Carilion Physics
Carilion TSG
Carter Media
Development Initiatives, Inc.
DRP Racing
East West DyeCom
E & W Machine
General Electric
Graham-White Mfg.
Hill Studios
Hughes Associates
J. C. Nordt
Lionberger Construction
Lincoln Electric
Mason Mechanical Labs
Miller Welders
Mountain Land Machine
NASCAR
New Millennium Steel
Novozymes
Overfelt & Son Welding
Plastics One
Precision Steel
Roanoke County Public Schools
Roanoke Regional Partnership
Roanoke-Times
Salem Specialties, Inc.
Synchrony
Sematco, Inc.
Shenandoah Machine & Maintenance Co., Inc.
Spectrum Engineers
The O'Connor Group
Thermal Dynamics
Tread Corporation
Valley Machine
Virginia Tech University
Virginia Western Community College
WDBJ 7
WSLS 10
Western Virginia Workforce Development Board
Wheeler Broadcasting
Wireless Medcare

Appendix D:

Memorandum of Agreement with Virginia Tech and Virginia Western Community College

Guaranteed Admission Agreement Between
Virginia Polytechnic Institute and State University's
College of Engineering
and the
Virginia Community College System

Section 1: General Requirements

In order to meet the requirements of this agreement and be guaranteed admission for a Summer or Fall term, a student must have:

- Completed a transferable engineering Associate Degree[1] including a minimum of 60 semester credit hours of undergraduate college-level study;
- Achieved a cumulative grade point average of not less than 3.0 (in a 4.0 system) at the time of the degree award, at the community college awarding the Associate Degree, as determined by the Virginia Tech Undergraduate Admissions Office[2]; and
- Completed six semester hours of a single foreign language at the college level, or two years of a single foreign language study during high school, or demonstrate proficiency.[3]

Associate Degree holders accepted for transfer under this agreement will not be subject to special requirements beyond those specified as major department, general education, and/or graduation requirements for students who originally enrolled in Virginia Polytechnic Institute and State University as freshmen. Virginia Tech will consider students admitted under this guaranteed admission agreement on the same basis as native students (students who began as freshmen at Virginia Tech) for admission to competitive programs, registration, financial aid, scholarship, student housing, parking, and any other opportunities open to native students with junior standing.

Virginia Tech waives its application fee for students with demonstrated financial need. An interested student should submit a written request, which includes an explanation of financial hardship, to the Virginia Tech Office of Undergraduate Admissions by February 15 prior to the Summer or Fall term of application.

Virginia Community College students who have completed an engineering Associate Degree and have a cumulative GPA of 3.0 (with minimum grades of "B" or better in all engineering, math and science courses) at the time of Associate Degree completion are guaranteed admission to General Engineering at Virginia Polytechnic Institute and State University. Admission to a specific department is subject to space availability and specific departmental entrance requirements. Eligible students will be admitted to alternate engineering majors if the first choice of major is not available.

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[1] Degree must be transferable, not an Associate of Applied Science.
[2] All course grades on the VCCS transcript, including repeated classes, will be re-calculated to determine the overall GPA
[3] Students attending a Virginia community college will be allowed to complete the required foreign language units after enrollment at Virginia Polytechnic Institute and State University. These credits fulfill a university entrance requirement and may not be counted as credits toward graduation requirements.

Graduation credit hour requirements for the various departments of the College of Engineering range from 120 to 136. The College of Engineering will transfer from the community college up to one-half of the credit hours required for graduation. The College of Engineering may require more than two years of course work for the Baccalaureate Degree and will specify major course requirements.

Students without the engineering Associate Degree or with credits or grade point average lower than that specified above may be considered for transfer admission on an individual, competitive basis; however, credit earned does not come under the protection of this agreement. A student who simultaneously receives an Associate Degree in engineering and high school diploma is not eligible for admission via this agreement.

Virginia Tech reserves the right to deny admission to students who have been dismissed or suspended for academic or disciplinary reasons or to those convicted of a felony or a serious misdemeanor impacting the safety of the university community.

Acceptance of course credits for transfer will be evaluated by the College of Engineering on the basis of applicability of the courses to the baccalaureate program. Any advanced standing, Advanced Placement, or International Baccalaureate credits awarded by the VCCS will be re-evaluated by Virginia Tech to determine course equivalency at Virginia Tech.

VCCS transfer students applying to the College of Engineering may be eligible for Lifeline Scholarships administered by Virginia Tech. More information is available at
http://www.finaid.vt.edu/types_of_aid/scholarships/vt-vccs-lifeline/index.html
http://www.finaid.vt.edu/types_of_aid/scholarships/presidential_campus_enrichment/vt-vccs-lifeline.html
The College of Engineering also has a scholarship available to any VCCS graduate with a transferable engineering Associate Degree. The Leo Padis scholarship is awarded by the College of Engineering to students in their first year of study at Virginia Tech; the scholarship award is $1000 ($500/semester) and awarded at the beginning of a fall semester only. This scholarship process requires an application, to be submitted to Virginia Tech no later than June 1 prior to the Summer or Fall term of admission application. Scholarship applications can be obtained from the Transfer Counselors at the VCCS sites offering transferable engineering Associate Degrees, or from the Engineering Department at the same VCCS sites.

SECTION 2: Guaranteed Admission Status

Guaranteed admission status will be granted to any Virginia community college student who has completed an engineering Associate Degree containing the following minimum core:

Subject/hour requirement	VCCS course numbers	VT course numbers
English Composition 6 hours	ENG 111 + 112	ENGL 1105 & 1106
Natural and Physical Science Minimum 12 hours	CHM 111 & PHY 231+232 or PHY 241+242	CHEM 1035 & 1045 and PHYS 2305 & 2306
Mathematics 8 – 18 hours	Required: MTH 173+174 (or 273+274) or 175+176+ 177+178 Additional preferred courses: MTH 177or 285; MTH 277; & MTH 279 or 291	MATH 1205, 1206, 1224 (and preferably 1114, 2214 & 2224)
Social Sciences 6 hours	Any transferable equivalent.	6 semester hours
Humanities 6 hours	Any transferable equivalent.	6 semester hours
		Total= 38-48 semester hours of General Education*
Engineering Minimum 16 hours	Course numbers vary by site.	Preferably include transferable equivalents (determined at the time the course is taken) of ENGE 1024 + 1104/1114[3]; remainder of required hours to be equivalent based on student's choice of major, but to include any of the following: CSC 1114 or 2505; ECE 1574, 2004 or 3054; ENGE 2314 or 2324; ESM 2104, 2304 or 2204; ISE 2014; or ME 3114

*These 38-48 semester hours will be applied toward the fulfillment of the university's and the College of Engineering's general education requirements. Completion of a native engineering Associates Degree (all college credits earned solely from VCCS schools) will guarantee completion of the Virginia Tech Liberal Education (general education) component of the undergraduate curriculum. While a non-native degree does not impact guaranteed admission under this agreement, Virginia Tech will guarantee completion of the Virginia Tech Liberal Education component of the undergraduate curriculum only for students with a native transfer engineering associate degree. Virginia Tech considers any AP, Advanced Standing, Military credit, or CLEP as part of a native degree.

[3] Transferability of ENGE 1024, 1104 & 1114 is determined on a college-by-college basis (not as a blanket approval for all VCCS colleges). Prospective transfers should consult the *Transfer Guide* (available on-line at www.vt.edu) to see if equivalents exist at their site.

Remaining credits will be accepted by the College of Engineering and may or may not satisfy the requirements of the degree program into which the student transfers. Subsequent graduation from the College of Engineering, therefore, is not assured within a two-year period of full-time study.

Remedial, developmental, and/or vocational courses (including drafting and engineering technology courses) will not be counted for academic credit in transfer.

All courses completed at the community college and offered for transfer credit to the university must be passed with a grade of C or better (for purposes of complying with this agreement, guaranteeing admission, all grades in engineering, math and science courses should be "B" or better).

SECTION 3: Nontraditional Credit

The evaluation of nontraditional credit will be the same for transfer and non-transfer students.

SECTION 4: Publication of Requirements

All requirements for admission to the university should be set forth with precision and clarity. The University catalog will include a description of this articulation agreement in both the Engineering and Admissions sections.

Checksheets, with graduation requirements for each engineering major, will be available in the Office of the Associate Dean for Engineering Academic Affairs. Checksheets are available to VCCS faculty and advisors through the Registrar's website at http://www.registrar.vt.edu/registration/degree_checksheet.php

SECTION 5: Terms of Articulation Agreement

The terms of this articulation agreement shall be effective with the academic year beginning August 2011 and apply only to the College of Engineering. It shall be reviewed every two years at the Virginia Tech Engineering Articulation Conference.

Virginia Tech will provide tracking data annually on the performance of students enrolling in the College of Engineering under this agreement, to include comparison with native-to-Virginia Tech students. The specific data elements and the timing of the report will be determined by the institutional research staffs at VCCS and Virginia Tech.

SECTION 6: Agreement Withdrawal

Either party to this agreement (the Virginia Community College System and Virginia Polytechnic Institute and State University's College of Engineering) may withdraw from this agreement by providing written notice to the appropriate parties. The following must be notified two years in advance of their intention to withdraw: Virginia Polytechnic Institute and State University Provost, Dean of the College of Engineering, and the Vice Chancellor of Academic Services & Research of the Virginia Community College System.

Agreed to this 14th day of February 2012.

Signed:

Richard Benson Dean, College of Engineering Virginia Polytechnic Institute and State University	Daniel Wubah Vice President and Dean for Undergraduate Education Virginia Polytechnic Institute and State University	Glenn DuBois Chancellor for Virginia Community College System

VIRGINIA WESTERN
COMMUNITY COLLEGE

WE'LL TAKE YOU THERE

VICE PRESIDENT OF ACADEMIC STUDENT AFFAIRS

July 15, 2011

Dr. Cecil Snead
Director of Instruction
Roanoke County Public Schools
5937 Cove Road
Roanoke, Virginia 24019

Dear Dr. Snead:

I have enclosed the 2011-2012 dual enrollment contract between Roanoke County Public Schools and Virginia Western Community College for dual classes to be offered at William Byrd High School, Cave Spring High School, Hidden Valley High School, Glenvar High School, Arnold Burton Center for Arts and Technology, Northside High School, and for those classes being taught through the Virginia Western Academy for Advanced Technology.

Immediately following the title page of the contract is an additional page of contract provisions. These provisions outline the duties and responsibilities of the dual enrollment instructors along with various due dates for enrolling students into our student information system and for checking class rosters and for entering grades by the dual enrollment instructors. Also, please note the attachments at the end of the contract.

As soon as you have reviewed and signed the contract, please return it to me as soon as possible at my address listed below, and make a copy of the contract for your school system files.

Virginia Western Community College looks forward to a successful partnership with Roanoke County Public Schools during the 2011-2012 school year. Please call me at 857-7235 if you have any questions.

Sincerely yours,

William A. Salyers, Jr.
Coordinator, Dual Enrollment
Virginia Western Community College
POB 14007
Roanoke, VA 24038

DUAL ENROLLMENT CONTRACT

between

VIRGINIA WESTERN COMMUNITY COLLEGE

and

ROANOKE COUNTY PUBLIC SCHOOLS

for

2011-2012

Please note that the information contained on the next page of this agreement provides additional contract provisions which are essential to Virginia Western's ability to manage its student information system (PeopleSoft) in a manner which allows for efficient, accurate, and timely processing of student information within the parameters of this new system.

As a result, although this information has been disseminated to counseling coordinators in each school, it remains the responsibility of the Roanoke County Public Schools to insure that instructors conform to the mandates set forward in these provisions as well as those outlined in its dual enrollment contract and subsequent attachments.

ADDITIONAL CONTRACT PROVISIONS
2011-2012

Virginia Western Community College is in the process of preparing documentation for the SACS reaffirmation process in order to maintain the institution's accreditation. Over the course of the last few years, the Southern Association of Colleges and Schools (SACS) has focused more of its attention on dual enrollment programs offered through community colleges. As a result, SACS has become even more stringent in its expectation of the accountability of dual enrollment programs and instructors in the accreditation process.

Since some members of your faculty teach dual enrolled courses sponsored in partnership with Virginia Western Community College, these instructors are also adjunct faculty to the college, and, as such, come under the same guidelines and requirements as any other faculty member who teaches on campus at VWCC.

Over the years, however, the institution has experienced varying degrees of success in securing various forms of documentation, which are requested in written form from your dual faculty for each semester a dual class is taught. A listing of these materials follows:

1. A course outline or syllabus for each semester the course is taught and which is clearly labeled with the instructor's name, course title (both yours and VWCC's), and the semester the course is being offered.

2. A copy of each semester's final examination.

3. Samples of student writing given by instructors—especially those in any college- level English classes, but any class which requires a student essay in any subject area.

4. Student evaluations of dual faculty are mailed to each instructor by the colleges' academic divisions for distribution and completion by students in each dual class. These student evaluations are mailed to each dual instructor and should be submitted to students to complete, so the instructor can mail them back to the division office in the addressed, return envelope by the due date indicated by the division.

5. A link to the Dual Enrollment web page provides additional information for instructors:

   http://www.virginiawestern.edu/student_life/for_dual_enrollment/

Each of these items is enumerated in two yearly communications which are mailed to dual enrollment instructors in August –before the beginning of the fall semester, and in December—before the beginning of the spring semester. Needless to say, we have some very diligent instructors who return all of the documentation requested, but we have quite a few who return part of the documentation we require, and some who do not return any.

Each item listed on this previous page is used in the instructor evaluation process conducted for dual enrollment instructors by the academic divisions at Virginia Western and are essential in maintaining the requirements of the Virginia Community College System as well as those of the Southern Association of Colleges and Schools.

In order to ensure the college is in compliance with all requirements of both agencies, and to ensure the efficacy of our dual instructors, we need your assistance in encouraging your dual enrollment instructors to submit these materials in a timely fashion and according to the timeline set forward in our communications. Please communicate these requirements to your dual instructors.

over, please .....

Because our student information system, registration procedures, enrollment deadlines, and census dates are prescribed for dual enrollment classes by our student information system, PeopleSoft, the following procedures need to be followed by teachers, guidance coordinators, and school administrators:

FALL, 2011

1. Dual enrollment class rosters for fall 2011 classes will need to be ready for pickup at the guidance coordinator's office in each school **no later than Tuesday, September 13, 2011. Class rosters must have the name of the class listed on the roster as well as the instructor's name. Finally, a student's EMPL ID number, which was issued by Virginia Western's on line application process must appear on the roster next to the name of each student enrolled in each dual enrollment class.** Since some students in dual enrollment classes are not taking these classes for dual enrollment credit, instructors will need to mark through the names of these students on their class rosters so our Admissions staff will know which students should be registered for classes and which students should not be registered. Any student who has not paid your school system for the class(es) should be dropped from the roster; otherwise, your school system will be charged for any student whose name appears on the roster.

2. **Dual enrollment class grades for fall 2011 will need to be entered into our student information system by going to http://www.virginiawestern.edu/ and finding MY VWCC at upper left hand corner of the web page. Grades must be entered no later than Friday, February 3, 2012 by each instructor who teaches a dual enrollment class.** Grades are required to be reviewed by each instructor's supervisor or guidance coordinator to insure they are correct and complete before being entered.

SPRING, 2012

1. Dual enrollment class rosters for spring 2012 classes will need to be ready for pickup at the guidance coordinator's office in each school **no later than Wednesday, February 8, 2012. Class rosters should have the name of the class listed on the roster as well as the instructor's name. Finally, a student's EMPL ID number, which was issued by Virginia Western's on line application process must appear on the roster next to the name of each student enrolled in each dual enrollment class.** Since some students in dual enrollment classes are not taking these classes for dual enrollment credit, instructors will need to mark through the names of these students on their class rosters so our Admissions staff will know which students should be registered for classes and which students should not be registered. Any student who has not paid your school system for the class(es) should be dropped from the roster; otherwise, your school system will be charged for any student whose name appears on the roster.

2. **Dual enrollment class grades for spring 2012 will need to be entered into our student information system by going to http://www.virginiawestern.edu/ and finding MY VWCC at upper left hand corner of the web page. Grades must be entered no later than Friday, June 15, 2012 by each instructor who teaches a dual enrollment class.** Grades are required to be reviewed by each instructor's supervisor or guidance coordinator to insure they are correct and complete before being entered

PLEASE NOTE: It would be extremely helpful if these pages were included in a memorandum under your name and sent to each guidance coordinator in your school system that has responsibility for dual enrollment procedures.

DUAL ENROLLMENT CONTRACT

between

VIRGINIA WESTERN COMMUNITY COLLEGE

and

ROANOKE COUNTY PUBLIC SCHOOLS

The purpose of this agreement is to set out the terms and conditions upon which courses will be offered under the "Virginia Plan for Dual Enrollment between Virginia Public Schools and Community Colleges" established by the Secretary of Education, the VCCS Chancellor and the Superintendent of Public Instruction in January, 2005. The purpose of this offering is to allow high school students to take college-level courses and receive both college credit and high school credit towards graduation.

Each part does hereby agree to the following:

1. Under this agreement, Virginia Western Community College will make available college-level courses to students of Roanoke County Public Schools for the 2011-2012 academic year.

The courses to be offered will be established by mutual agreement of both parties for the fall and spring semesters. **A LISTING OF THE COURSES CAN BE FOUND AS <u>ATTACHMENT I</u> AT THE END OF THIS CONTRACT.**

This agreement is tentative until registration for the course(s) is completed and is subject to adequate student enrollment as determined by the college. The college and Roanoke County Public Schools reserve the right to cancel any class sections or add sections, not later than the census date for the class as determine by the college.

2. Tuition and Fees

The Roanoke County School Board agrees to pay to Virginia Western Community College the state mandatory tuition and any mandatory fee established by the State Board for Community Colleges and in effect at the time the classes begin plus any per credit hour fees established by the Virginia Western Community College Board. Virginia Western Community College will bill Roanoke County Public Schools on a semester basis for tuition charges incurred under this agreement for a specific academic semester. Virginia Western Community College will bill Roanoke County Public Schools within 30 days after the commencement of classes on a semester basis for tuition charges incurred under this agreement for a specific academic semester.

2011-2012 Tuition & Fees*

(Fees include: Instruction for dual enrollment classes, administrative expenses, room utility costs and any maintenance of facilities.)

***Virginia Resident - $129.09 per credit**

***NOTE: Tuition and Fees may be subject to change.**

If a student drops a course before the cut-off dates shown below, Roanoke County Public Schools will not be billed for the student.

Cut-Off Dates for Registering or Dropping Students Without Penalty

Fall Semester 2011 – by Friday, September 30, 2011
Spring Semester 2012 – by Friday, February 24, 2011

3. Textbooks

The college reserves the right to determine the textbooks used in dual enrollment courses. Providing dual enrollment textbooks in all classes being offered is the responsibility of Roanoke County Public Schools.

4. Payment for Other Services

Tuition fees will be reimbursed to Roanoke County Public Schools at the rate of 75% of the total cost of these tuition and fees. **AN EXAMPLE OF HOW TUITION FEES WILL BE REIMBURSED APPEARS AT THE END OF THIS CONTRACT AS ATTACHMENT II.**

5. Faculty

a. Selection

(1) Authority to Select/Hire

The selection and supervision of instructional faculty for all community college courses covered by this agreement will be the responsibility of Virginia Western Community College. Roanoke County Public Schools may recommend qualified teachers who are interested in teaching in the dual enrollment program to Virginia Western Community College for consideration. Each faculty member teaching in the dual enrollment program shall be a member of the college's full- or part-time faculty or an employee of Roanoke County Public Schools.

(2) Dual enrollment course faculty must meet the minimum credential requirements set forth by Form VCCS-29 and the Southern Association of Colleges and Schools. **FORM VCCS-29 CAN BE FOUND AS <u>ATTACHMENT III</u> AT THE END OF THIS CONTRACT.**

b. Payment

If the instructor for dual enrollment course(s) is employed full time by Roanoke County Public Schools and the course(s) are part of the assigned teaching workload, the college will reimburse Roanoke County Public Schools for the services of its employee in lieu of direct compensation to the faculty member. If, however, the college employs an instructor that is not affiliated with Roanoke County Public Schools, the college will compensate the faculty member directly. Reimbursement and/or payment of faculty salaries directly will be in accordance with the Virginia Community College system approved lecturer rates depending on the qualifications of the instructor and will occur no later than the end of the semester of the course.

c. Faculty Responsibilities

Instructors will be expected to conform to college policies such as verifying class rosters, reporting student progress to the college at mid-semester, taking attendance, and providing final grades at the end of the semester.

All faculty teaching dual enrollment courses will be required to attend faculty orientation and other in-service programs as agreed upon by both parties.

6. Students

a. Selection and Eligibility to Participate in Dual Enrollment Program

(1) In order to be eligible to participate in the Dual Enrollment Program, high school students must have permission of their parent or guardian to participate, be recommended by their high school principal or guidance counselor to cross register, and meet any course prerequisites.

(2) Students must meet admission and course placement requirements of Virginia Western Community College. Requirements for admission include the completion of an application for admission to the college, any transcript request forms, the completion and receipt of satisfactory scores on the college's COMPASS placement tests when required (or exemption

certificates), signed permission forms from high school principals, and INS documentation for students who are not United States citizens.

(3) Exceptions to the policies established in 6.a.(1) and 6.a.(2) regarding student eligibility may be made on a case-by-case basis with the approval of the public school superintendent and appropriate community college officials.

7. College Administrative Responsibilities

a. The college, through its instructor(s), will provide the appropriate Roanoke County Public School officials with progress reports on each student from time to time as shall be agreed by the contracting school system and the college. Release of progress reports by the college shall be conditional upon receipt of a proper authorization for the release of grades by the college to Roanoke County Public Schools conforming to the requirements of the US DOE FERPA regulations. At the conclusion of each college academic term, the student will receive a college grade for each course in which he/she was registered and such grades will become part of the student's permanent college record.

b. A record will be maintained by the college for each student in the Dual Enrollment Program as part of the permanent college record maintained by the college's Admissions and Records offices. Transcripts will be sent to college/universities upon student request.

c. The college will provide a minimum of 800 minutes of instruction (to include testing and evaluation) for each lecture credit or lab contact hour per semester to Roanoke County Public School students enrolled in college courses under this agreement.

8. High School Administrative Responsibilities

Roanoke County Public Schools will follow the procedures outlined on the dual enrollment calendar. **THE CALENDAR FOR THE 2011-2012 ACADEMIC YEAR CAN BE FOUND AS <u>ATTACHMENT IV</u> AT THE END OF THIS CONTRACT.**

Class rosters for each dual enrollment class offered by Roanoke County Public Schools will be verified by the instructor on the college's web site under: **MY VWCC** and any discrepancies in student enrollments will be reported to Bill Salyers at bsalyers@virginiawestern.edu within two weeks of the **START DATE** of the dual enrollment calendar for each semester. During this two week period, students may be added to a class or dropped from a class without penalty to the student or cost to the school system. After the **LAST OFFICIAL DATE THAT STUDENTS MAY BE REGISTERED OR DROPPED FROM A DUAL ENROLLMENT CLASS, NO INSTRUCTORS WILL BE ALLOWED TO DROP OR ADD STUDENTS FROM A CLASS. ROANOKE COUNTY**

PUBLIC SCHOOLS WILL BE CHARGED FOR ALL STUDENTS REGISTERED FOR A CLASS AFTER THE LAST OFFICIAL DATE FOR DROPPING AND ADDING STUDENTS HAS EXPIRED—SEE ATTACHMENT IV FOR SPECIFIC DATES.

Once the drop/add period has expired, instructors may **WITHDRAW** students from a dual enrollment class **BY THE LAST OFFICIAL DATE TO WITHDRAW STUDENTS—SEE ATTACHMENT IV FOR SPECIFIC DATES. A STUDENT WILL BE WITHDRAWN FROM A DUAL ENROLLMENT CLASS WITH A 'W' WHICH WILL APPEAR ON THE STUDENT'S PERMANENT COLLEGE TRANSCRIPT.**

Dual Enrollment Program instructors will need to process their grades for each student by the official **DEADLINE** date for entering grades into each instructor's **MY VWCC** account. See **ATTACHMENT IV** for specific dates.

9. Award of Credit

College and high school credit will be awarded to the participating high school student upon successful completion of the course.

10. Course Standards

a. Course Equivalency, Evaluation, and Assessment

Assessment has long been recognized in Virginia as an important aspect of an effective instructional program. All dual enrollment arrangements developed and implemented under the auspices of the Virginia Plan for Dual Enrollment shall include a formal mechanism for evaluation. Virginia Western Community College has the responsibility to ensure that all dual enrollment courses taught are equivalent to other instruction offered by the college, specifically in terms of course objectives, components of the syllabi, level and rigor of content, evaluation of students, textbooks, student outcomes and assessment, and faculty evaluation.

b. Modification of Policies

Modifications of on-campus policies, procedures, and rules appropriate to the high school setting may be agreed to by the parties in writing before each term begins.

c. Student Performance

Virginia Western Community College reserves the right to advise the student, parents, and the school system when the student does not have

sufficient skills or abilities to continue in the courses selected after the first semester of enrollment in the Dual Enrollment Program.

11. Agreement Contacts

Contact persons for this agreement are:

Dr. Cecil Snead, Director of Instruction, Roanoke County Public Schools
Mr. Bill Salyers, Jr., Coordinator, Dual Enrollment, Virginia Western CC

12. Transferability

Normally, academic courses intended for transfer with a grade of "C" or above will transfer to institutions of higher education. However, no guarantee can be made regarding transferability to all colleges and universities. Community college occupational/technical course credits earned are applicable to specific curricula and are intended to prepare students for employment in those areas. While some of these courses may be accepted for transfer, no unified policy on the transfer of VCCS courses exists. Students should be advised to consult with transfer institutions in order to determine if their courses will be accepted for transfer.

13. Virginia Western Community College reserves the right to enroll other students under this agreement when courses are offered on campus or sites not at the high school. Non-dual enrollment students are not allowed in dual classes offered in the high school.

14. Each party will be responsible for liability coverage of its employees and agents In fulfilling its responsibilities under this agreement, to the extent authorized by law.

15. If either party wishes to terminate this agreement, a written notice must be provided within 30 days of the requested termination date. Termination will not take place until dual enrollment courses in progress are completed.

16. Neither Virginia Western Community College nor Roanoke County Public Schools shall unlawfully discriminate on the basis of face, nationality, ethnicity, religion, gender, age, or disability in any undertaking pursuant to this agreement.

17. Northing herein shall be construed as a waiver of the sovereign immunity of the

Commonwealth of Virginia nor the assumption of any liability contrary to the laws and statutes of Virginia.

SIGNATURES

Roanoke County Public Schools

By _____ Date 8/11/12
Dr. Lorraine Lange
Superintendent

By _____ Date 8-2-11
Dr. Cecil Snead
Direction of Instruction

Virginia Western Community College

By _____ Date 7-29-11
Dr. Robert H. Sandel
President

By _____ Date 7/18/11
Dr. Tresia B. Samani, Vice President
Academic and Student Affairs

By _____ Date 7/18/11
Ms. Cheryl Miller,
Vice President of Financial
and Administrative Services

Appendix E:

Internship Agreements

Engineering Internship Agreement – Spring 2011

Student's Name Ben Brisley | Program Engineering

School Burton Center for Arts & Technology | School Division Roanoke County Schools

Internship Site Hill Studio PC | Address 1760 Boulevard, Salem, VA

Job Title Student Intern | On-job Supervisor David Hill, ASLA

Marshal Merillion - Zapp

***PURPOSE:** The purpose of this agreement is to provide a way of recording the terms of the student's internship and to outline the responsibilities of all parties involved with that internship to comply with local, federal and state requirements.

STUDENT INTERNS agree to:

1. Attend school and work regularly. The student intern will notify the school and employer by a designated time on any day absent. When a student is absent, he/she is **not** permitted to work that day unless advance permission has been given by the teacher-coordinator.

2. Perform internship responsibilities efficiently.

3. Show honesty, punctuality, courtesy, a cooperative attitude, proper health and grooming habits, appropriate dress, and a willingness to learn.

*4. Conform to the rules and regulations, including all safety requirements, of the internship site.

5. Furnish the teacher-coordinator with necessary information about their internship and complete promptly all necessary reports.

6. Consult the teacher-coordinator about any difficulties arising at the internship site or related to the internship program.
7. Check and respond to all messages (email and text) from teacher and mentor in a timely fashion. Check Blackboard for announcement every day. Keep teacher and mentor informed on a regular basis.

MENTORS agree to:

1. Provide students the opportunity to receive on-the-job experiences. Students will attend the internship site on Tuesdays, Thursdays and every other Friday from 8:00 to 10:30 at a minimum to complete a minimum of 70 hours. Tentative dates for 2011 are attached.

2. Provide varied occupational experiences which expose students to as many aspects of the operation as possible.

*3. Assist students in completing job-related projects and provide available instructional materials and occupational guidance.

*4. Adhere to federal and state regulations regarding labor laws, safety regulations, and other applicable legislation.

5. Consult the coordinator as soon as possible regarding work-related problems.

6. Continue with interns throughout the semester, provided their job and school performances remain satisfactory.

7. Provide time for consultation with the teacher-coordinator to evaluate students' on-the-job performance.

Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

PARENTS/GUARDIANS agree to:

1. Support the internship method of education and encourage competent participation of student interns.

*2. Assume responsibility for the safety of students from the time they leave home or school until they report to the job and from the time they leave the job until they arrive at home or at school.

3. Be responsible for transportation of students to and from the internship site.

4. Cooperate with all rules and policies of the school and internship site.

5. Be aware that students are not allowed to report to the training station on days they are absent from school unless they receive permission from the teacher-coordinator.
6. Be aware that students will be evaluated by mentors as well as teachers.

TEACHER-COORDINATORS agree to:

*1. Provide related classroom instruction, including safety procedures.

*2. Assume responsibility for initiating and developing individual internship experiences.

*3. Cooperate with internship sites in developing appropriate training activities related to student interns' career interests.

*4. Make periodic visits to internship sites to observe student interns, consult with internship mentors, and assist student interns with any problems.

5. Assist in evaluation of student interns.

6. Provide mentors with current information concerning students' progress in school.

Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

Signatures:

Student 1/19/11 (Sign) (Date) **Parent/Guardian** 1/18/11 (Sign) (Date)

School Administrator 1/10/11 (Sign) (Date) **Employer/Mentor** (Sign) (Date)

Teacher/ Coordinator 1/13/11 (Sign) (Date)

Internship dates for 2011

January – ~~13~~, 20, 25, 27, 28
February – 3, 4, 8, 10, 15, 17, 18, 22, 24
March – 1, 3, 4, 8, 10, 15, 17, 22, 24, 29, 31
April – ~~5~~, 7, 8, 12, 14, 19, 21
May 3, 5, 10, 12, 13, 17, 19, 20

Engineering Internship Agreement – Spring 2011

Student's Name Jeffrey Camper | Program Engineering

School Burton Center for Arts & Technology | School Division Roanoke County Schools

Internship Site Spectrum PC | Address 1760 Boulevard, Salem, VA

Job Title Student Intern | On-job Supervisor _____

***PURPOSE:** The purpose of this agreement is to provide a way of recording the terms of the student's internship and to outline the responsibilities of all parties involved with that internship to comply with local, federal and state requirements.

STUDENT INTERNS agree to:

1. Attend school and work regularly. The student intern will notify the school and employer by a designated time on any day absent. When a student is absent, he/she is **not** permitted to work that day unless advance permission has been given by the teacher-coordinator.
2. Perform internship responsibilities efficiently.
3. Show honesty, punctuality, courtesy, a cooperative attitude, proper health and grooming habits, appropriate dress, and a willingness to learn.

*4. Conform to the rules and regulations, including all safety requirements, of the internship site.

5. Furnish the teacher-coordinator with necessary information about their internship and complete promptly all necessary reports.
6. Consult the teacher-coordinator about any difficulties arising at the internship site or related to the internship program.
7. Check and respond to all messages (email and text) from teacher and mentor in a timely fashion. Check Blackboard for announcements every day. Keep teacher and mentor informed on a regular basis.

MENTORS agree to:

1. Provide students the opportunity to receive on-the-job experiences. Students will attend the internship site on Tuesdays, Thursdays and every other Friday from 8:00 to 10:30 at a minimum to complete a minimum of 70 hours. Tentative dates for 2011 are attached.
2. Provide varied occupational experiences which expose students to as many aspects of the operation as possible.

*3. Assist students in completing job-related projects and provide available instructional materials and occupational guidance.

*4. Adhere to federal and state regulations regarding labor laws, safety regulations, and other applicable legislation.

5. Consult the coordinator as soon as possible regarding work-related problems.

*6. Continue with interns throughout the semester, provided their job and school performances remain satisfactory.

7. Provide time for consultation with the teacher-coordinator to evaluate students' on-the-job performance.

Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

PARENTS/GUARDIANS agree to:

1. Support the internship method of education and encourage competent participation of student interns.

*2. Assume responsibility for the safety of students from the time they leave home or school until they report to the job and from the time they leave the job until they arrive at home or at school.

3. Be responsible for transportation of students to and from the internship site.

4. Cooperate with all rules and policies of the school and internship site.

5. Be aware that students are not allowed to report to the training station on days they are absent from school unless they receive permission from the teacher-coordinator.
6. Be aware that students will be evaluated by mentors as well as teachers.

TEACHER-COORDINATORS agree to:

*1. Provide related classroom instruction, including safety procedures.

*2. Assume responsibility for initiating and developing individual internship experiences.

*3. Cooperate with internship sites in developing appropriate training activities related to student interns' career interests.

*4. Make periodic visits to internship sites to observe student interns, consult with internship mentors, and assist student interns with any problems.

5. Assist in evaluation of student interns.

6. Provide mentors with current information concerning students' progress in school.

Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

Signatures:

Student (Sign) 1/17/11 (Date) **Parent/Guardian** (Sign) 1/17/11 (Date)

School Administrator (Sign) 1/18/11 (Date) **Employer/Mentor** (Sign) 1/20/11 (Date)

Teacher/ Coordinator (Sign) 1/13/11 (Date)

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January – 18, 20, 25, 27, 28
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March – 1, 3, 4, 8, 10, 15, 17, 22, 24, 29, 31
April – 5, 7, 8, 12, 14, 19, 21
May 3, 5, 10, 12, 13, 17, 19, 20

Engineering Internship Agreement – Spring 2011

Student's Name · David Vieth | Program Engineering

School Burton Center for Arts & Technology | School Division Roanoke County Schools

Internship Site Spectrum PC | Address 1760 Boulevard, Salem, VA

Job Title Student Intern | On-job Supervisor _____

***PURPOSE:** The purpose of this agreement is to provide a way of recording the terms of the student's internship and to outline the responsibilities of all parties involved with that internship to comply with local, federal and state requirements.

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2. Perform internship responsibilities efficiently.
3. Show honesty, punctuality, courtesy, a cooperative attitude, proper health and grooming habits, appropriate dress, and a willingness to learn.

*4. Conform to the rules and regulations, including all safety requirements, of the internship site.

5. Furnish the teacher-coordinator with necessary information about their internship and complete promptly all necessary reports.
6. Consult the teacher-coordinator about any difficulties arising at the internship site or related to the internship program.
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1. Provide students the opportunity to receive on-the-job experiences. Students will attend the internship site on Tuesdays, Thursdays and every other Friday from 8:00 to 10:30 at a minimum to complete a minimum of 70 hours. Tentative dates for 2011 are attached.
2. Provide varied occupational experiences which expose students to as many aspects of the operation as possible.

*3. Assist students in completing job-related projects and provide available instructional materials and occupational guidance.

*4. Adhere to federal and state regulations regarding labor laws, safety regulations, and other applicable legislation.

5. Consult the coordinator as soon as possible regarding work-related problems.
6. Continue with interns throughout the semester, provided their job and school performances remain satisfactory.
7. Provide time for consultation with the teacher-coordinator to evaluate students' on-the-job performance.

***Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry*.**

PARENTS/GUARDIANS agree to:

1. Support the internship method of education and encourage competent participation of student interns.

*2. Assume responsibility for the safety of students from the time they leave home or school until they report to the job and from the time they leave the job until they arrive at home or at school.

3. Be responsible for transportation of students to and from the internship site.

4. Cooperate with all rules and policies of the school and internship site.

5. Be aware that students are **not** allowed to report to the training station on days they are absent from school unless they receive permission from the teacher-coordinator.
6. Be aware that students will be evaluated by mentors as well as teachers.

TEACHER-COORDINATORS agree to:

*1. Provide related classroom instruction, including safety procedures.

*2. Assume responsibility for initiating and developing individual internship experiences.

*3. Cooperate with internship sites in developing appropriate training activities related to student interns' career interests.

*4. Make periodic visits to internship sites to observe student interns, consult with internship mentors, and assist student interns with any problems.

5. Assist in evaluation of student interns.

6. Provide mentors with current information concerning students' progress in school.

*Meets requirements of the ***Work-Training Student Learner Agreement, Virginia Department of Labor and Industry***

Signatures:

Student David Vieth 1-19
(Sign) (Date)

Parent/Guardian 1-17-11
(Sign) (Date)

School Administrator A McClung 1/20/11
(Sign) (Date)

Employer/Mentor 1/20/11
(Sign) (Date)

Teacher/ Coordinator Shanta 1/13/11
(Sign) (Date)

Internship dates for 2011

January – 20, 25, 27, 28
February – 3, 4, 8, 10, 15, 17, 18, 22, 24
March – 1, 3, 4, 8, 10, 15, 17, 22, 24, 29, 31
April – 5, 7, 8, 12, 14, 19, 21
May 3, 5, 10, 12, 13, 17, 19, 20

Engineering Internship Agreement – Spring 2011

Student's Name Brandon Amos Program Engineering

School Burton Center for Arts & Technology School Division Roanoke County Schools

Internship Site Sunapsys Address 1760 Boulevard, Salem, VA

Job Title Student Intern On-job Supervisor Mack McGhee

*PURPOSE: The purpose of this agreement is to provide a way of recording the terms of the student's internship and to outline the responsibilities of all parties involved with that internship to comply with local, federal and state requirements.

STUDENT INTERNS agree to:

1. Attend school and work regularly. The student intern will notify the school and employer by a designated time on any day absent. When a student is absent, he/she is **not** permitted to work that day unless advance permission has been given by the teacher-coordinator.

2. Perform internship responsibilities efficiently.

3. Show honesty, punctuality, courtesy, a cooperative attitude, proper health and grooming habits, appropriate dress, and a willingness to learn.

*4. Conform to the rules and regulations, including all safety requirements, of the internship site.

5. Furnish the teacher-coordinator with necessary information about their internship and complete promptly all necessary reports.

6. Consult the teacher-coordinator about any difficulties arising at the internship site or related to the internship program.
7. Check and respond to all messages (email and text) from teacher and mentor in a timely fashion. Check Blackboard for announcement every day. Keep teacher and mentor informed on a regular basis.

MENTORS agree to:

1. Provide students the opportunity to receive on-the-job experiences. Students will attend the internship site on Tuesdays, Thursdays and every other Friday from 8:00 to 10:30 at a minimum to complete a minimum of 70 hours. Tentative dates for 2011 are attached.

2. Provide varied occupational experiences which expose students to as many aspects of the operation as possible.

*3. Assist students in completing job-related projects and provide available instructional materials and occupational guidance.

*4. Adhere to federal and state regulations regarding labor laws, safety regulations, and other applicable legislation.

5. Consult the coordinator as soon as possible regarding work-related problems.

6. Continue with interns throughout the semester, provided their job and school performances remain satisfactory.

7. Provide time for consultation with the teacher-coordinator to evaluate students' on-the-job performance.

Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

PARENTS/GUARDIANS agree to:

1. Support the internship method of education and encourage competent participation of student interns.

*2. Assume responsibility for the safety of students from the time they leave home or school until they report to the job and from the time they leave the job until they arrive at home or at school.

3. Be responsible for transportation of students to and from the internship site.

4. Cooperate with all rules and policies of the school and internship site.

5. Be aware that students are **not** allowed to report to the training station on days they are absent from school unless they receive permission from the teacher-coordinator.
6. Be aware that students will be evaluated by mentors as well as teachers.

TEACHER-COORDINATORS agree to:

*1. Provide related classroom instruction, including safety procedures.

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*4. Make periodic visits to internship sites to observe student interns, consult with internship mentors, and assist student interns with any problems.

5. Assist in evaluation of student interns.

6. Provide mentors with current information concerning students' progress in school.

Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

Signatures:

Student Brandon Pope 1/13/11 (Sign) (Date)

Parent/Guardian Sandra Amos 1/13/11 (Sign) (Date)

School Administrator A McClung 1/12/11 (Sign) (Date)

Employer/Mentor [illegible] 1/20/2011 (Sign) (Date)

Teacher/ Coordinator Shanta 1/13/11 (Sign) (Date)

Internship dates for 2011

January – 18, 20, 25, 27, 28
February -- 3, 4, 8, 10, 15, 17, 18, 22, 24
March – 1, 3, 4, 8, 10, 15, 17, 22, 24, 29, 31
April – 5, 7, 8, 12, 14, 19, 21
May 3, 5, 10, 12, 13, 17, 19, 20

Engineering Internship Agreement – Spring 2011

Student's Name Ryan King .Program Engineering

School Burton Center for Arts & Technology School Division Roanoke County Schools

Internship Site OCC Address 1760 Boulevard, Salem, VA

Job Title Student Intern On-job Supervisor Dan

*PURPOSE: The purpose of this agreement is to provide a way of recording the terms of the student's internship and to outline the responsibilities of all parties involved with that internship to comply with local, federal and state requirements.

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3. Show honesty, punctuality, courtesy, a cooperative attitude, proper health and grooming habits, appropriate dress, and a willingness to learn.

*4. Conform to the rules and regulations, including all safety requirements, of the internship site.

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7. Check and respond to all messages (email and text) from teacher and mentor in a timely fashion. Check Blackboard for announcement every day. Keep teacher and mentor informed on a regular basis.

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*4. Adhere to federal and state regulations regarding labor laws, safety regulations, and other applicable legislation.

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6. Continue with interns throughout the semester, provided their job and school performances remain satisfactory.

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Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

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4. Cooperate with all rules and policies of the school and internship site.

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5. Assist in evaluation of student interns.

6. Provide mentors with current information concerning students' progress in school.

Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

Signatures:

Student _____ (Sign) 1/13 (Date) **Parent/Guardian** Freda M. King (Sign) 1/13/11 (Date)

School Administrator A M Cling (Sign) 1/10/11 (Date) **Employer/Mentor** _____ (Sign) 1/20/11 (Date)

Teacher/ Coordinator _____ (Sign) 1/13/11 (Date)

Internship dates for 2011

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May 3, 5, 10, 12, 13, 17, 19, 20

Engineering Internship Agreement – Spring 2011

Student's Name Alex Petzen | Program Engineering

School Burton Center for Arts & Technology | School Division Roanoke County Schools

Internship Site OCC | Address 1760 Boulevard, Salem, VA

Job Title Student Intern | On-job Supervisor Anthony Rice

*PURPOSE: The purpose of this agreement is to provide a way of recording the terms of the student's internship and to outline the responsibilities of all parties involved with that internship to comply with local, federal and state requirements.

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5. Assist in evaluation of student interns.

6. Provide mentors with current information concerning students' progress in school.

Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

Signatures:

Student _____ 1/20/11 (Sign) (Date) **Parent/Guardian** _____ 1/13/11 (Sign) (Date)

School Administrator _____ 1/10/11 (Sign) (Date) **Employer/Mentor** _____ 01-20-11 (Sign) (Date)

Teacher/ Coordinator _____ 1/13/11 (Sign) (Date)

Internship dates for 2011

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May 3, 5, 10, 12, 13, 17, 19, 20

Engineering Internship Agreement – Spring 2011

Student's Name Devon Wells | Program Engineering

School Burton Center for Arts & Technology | School Division Roanoke County Schools

Internship Site Carilion TSG | Address 1760 Boulevard, Salem, VA

Job Title Student Intern | On-job Supervisor Chris Riha

***PURPOSE:** The purpose of this agreement is to provide a way of recording the terms of the student's internship and to outline the responsibilities of all parties involved with that internship to comply with local, federal and state requirements.

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6. Provide mentors with current information concerning students' progress in school.

Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

Signatures:

Student _____ 1/18/11 (Sign) (Date) **Parent/Guardian** _____ 1/18/11 (Sign) (Date)

School Administrator _____ 1/10/11 (Sign) (Date) **Employer/Mentor** _____ 1/20/11 (Sign) (Date)

Teacher/ Coordinator _____ 1/13/11 (Sign) (Date)

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Engineering Internship Agreement – Spring 2011

Student's Name Rhys Dodd Program Engineering

School Burton Center for Arts & Technology School Division Roanoke County Schools

Internship Site Novozymes Address 1760 Boulevard, Salem, VA

Job Title Student Intern On-job Supervisor Seth D'Imperio

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Signatures:

Student _____ (Sign) 1/17/11 (Date) **Parent/Guardian** _____ (Sign) 1/17/11 (Date)

School Administrator _____ (Sign) 1/10/11 (Date) **Employer/Mentor** _____ (Sign) 1·20·11 (Date)

Teacher/ Coordinator _____ (Sign) 1/13/11 (Date)

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May 3, 5, 10, 12, 13, 17, 19, 20

Engineering Internship Agreement – Spring 2011

Student's Name Shakaysha Bumpas Program Engineering

School Burton Center for Arts & Technology School Division Roanoke County Schools

Internship Site Novozymes Address 1760 Boulevard, Salem, VA

Job Title Student Intern On-job Supervisor Seth D'Imperio

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6. Provide mentors with current information concerning students' progress in school.

Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

Signatures:

Student SBumpas 1/18/11 (Sign) (Date) **Parent/Guardian** (Sign) 18JAN11 (Date)

School Administrator AMcClung 1/10/11 (Sign) (Date) **Employer/Mentor** (Sign) 1/20/11 (Date)

Teacher/ Coordinator SShante 1/13/11 (Sign) (Date)

Internship dates for 2011

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May 3, 5, 10, 12, 13, 17, 19, 20

Engineering Internship Agreement – Spring 2011

Student's Name Maya Shende	Program Engineering
School Burton Center for Arts & Technology	School Division Roanoke County Schools
Internship Site Dr. Muelenaer's office	Address 1760 Boulevard, Salem, VA
Job Title Student Intern	On-job Supervisor Dr. Muelenaer

***PURPOSE:** The purpose of this agreement is to provide a way of recording the terms of the student's internship and to outline the responsibilities of all parties involved with that internship to comply with local, federal and state requirements.

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Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

Signatures:

Student Maya Shende 1/18/11 (Sign) (Date) **Parent/Guardian** 1/18/11 (Sign) (Date)

School Administrator A McClung 1/10/11 (Sign) (Date) **Employer/Mentor** (Sign) (Date) 1/20/2011

Teacher/ Coordinator Susheela Shante 1/13/11 (Sign) (Date)

Internship dates for 2011

January – ~~18~~, 20, 25, 27, 28
February -- 3, 4, 8, 10, 15, 17, 18, 22, 24
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April – ~~5~~, 7, 8, 12, 14, 19, 21
May 3, 5, 10, 12, 13, 17, 19, 20

Engineering Internship Agreement – Spring 2011

Student's Name Cooper Tyree

Program Engineering

School Burton Center for Arts & Technology

School Division Roanoke County Schools

Internship Site GE

Address 1760 Boulevard, Salem, VA

Job Title Student Intern

On-job Supervisor M. Lester Childs - ANDREW GROTH

***PURPOSE:** The purpose of this agreement is to provide a way of recording the terms of the student's internship and to outline the responsibilities of all parties involved with that internship to comply with local, federal and state requirements.

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5. Consult the coordinator as soon as possible regarding work-related problems.

6. Continue with interns throughout the semester, provided their job and school performances remain satisfactory.

7. Provide time for consultation with the teacher-coordinator to evaluate students' on-the-job performance.

Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

PARENTS/GUARDIANS agree to:

1. Support the internship method of education and encourage competent participation of student interns.

*2. Assume responsibility for the safety of students from the time they leave home or school until they report to the job and from the time they leave the job until they arrive at home or at school.

3. Be responsible for transportation of students to and from the internship site.

4. Cooperate with all rules and policies of the school and internship site.

5. Be aware that students are **not** allowed to report to the training station on days they are absent from school unless they receive permission from the teacher-coordinator.
6. Be aware that students will be evaluated by mentors as well as teachers.

TEACHER-COORDINATORS agree to:

*1. Provide related classroom instruction, including safety procedures.

*2. Assume responsibility for initiating and developing individual internship experiences.

*3. Cooperate with internship sites in developing appropriate training activities related to student interns' career interests.

*4. Make periodic visits to internship sites to observe student interns, consult with internship mentors, and assist student interns with any problems.

5. Assist in evaluation of student interns.

6. Provide mentors with current information concerning students' progress in school.

Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

Signatures:

Student _____ (Sign) _____ (Date) **Parent/Guardian** _____ (Sign) 1/13/11 (Date)

School Administrator _____ (Sign) 1/10/11 (Date) **Employer/Mentor** _____ (Sign) 1/20/11 (Date)

Teacher/ Coordinator _____ (Sign) 1/13/11 (Date)

Internship dates for 2011

January – 18, 20, 25, 27, 28
February -- 3, 4, 8, 10, 15, 17, 18, 22, 24
March – 1, 3, 4, 8, 10, 15, 17, 22, 24, 29, 31
April – 5, 7, 8, 12, 14, 19, 21
May 3, 5, 10, 12, 13, 17, 19, 20

Engineering Internship Agreement – Spring 2011

Student's Name Karcy Grove | Program Engineering

School Burton Center for Arts & Technology | School Division Roanoke County Schools

Internship Site Novozymes | Address 1760 Boulevard, Salem, VA

Job Title Student Intern | On-job Supervisor Seth D'Imperio

***PURPOSE:** The purpose of this agreement is to provide a way of recording the terms of the student's internship and to outline the responsibilities of all parties involved with that internship to comply with local, federal and state requirements.

STUDENT INTERNS agree to:

1. Attend school and work regularly. The student intern will notify the school and employer by a designated time on any day absent. When a student is absent, he/she is **not** permitted to work that day unless advance permission has been given by the teacher-coordinator.
2. Perform internship responsibilities efficiently.
3. Show honesty, punctuality, courtesy, a cooperative attitude, proper health and grooming habits, appropriate dress, and a willingness to learn.

*4. Conform to the rules and regulations, including all safety requirements, of the internship site.

5. Furnish the teacher-coordinator with necessary information about their internship and complete promptly all necessary reports.
6. Consult the teacher-coordinator about any difficulties arising at the internship site or related to the internship program.
7. Check and respond to all messages (email and text) from teacher and mentor in a timely fashion. Check Blackboard for announcements every day. Keep teacher and mentor informed on a regular basis.

MENTORS agree to:

1. Provide students the opportunity to receive on-the-job experiences. Students will attend the internship site on Tuesdays, Thursdays and every other Friday from 8:00 to 10:30 at a minimum to complete a minimum of 70 hours. Tentative dates for 2011 are attached.
2. Provide varied occupational experiences which expose students to as many aspects of the operation as possible.

*3. Assist students in completing job-related projects and provide available instructional materials and occupational guidance.

*4. Adhere to federal and state regulations regarding labor laws, safety regulations, and other applicable legislation.

5. Consult the coordinator as soon as possible regarding work-related problems.
6. Continue with interns throughout the semester, provided their job and school performances remain satisfactory.
7. Provide time for consultation with the teacher-coordinator to evaluate students' on-the-job performance.

Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

PARENTS/GUARDIANS agree to:

1. Support the internship method of education and encourage competent participation of student interns.

*2. Assume responsibility for the safety of students from the time they leave home or school until they report to the job and from the time they leave the job until they arrive at home or at school.

3. Be responsible for transportation of students to and from the internship site.

4. Cooperate with all rules and policies of the school and internship site.

5. Be aware that students are not allowed to report to the training station on days they are absent from school unless they receive permission from the teacher-coordinator.
6. Be aware that students will be evaluated by mentors as well as teachers.

TEACHER-COORDINATORS agree to:

*1. Provide related classroom instruction, including safety procedures.

*2. Assume responsibility for initiating and developing individual internship experiences.

*3. Cooperate with internship sites in developing appropriate training activities related to student interns' career interests.

*4. Make periodic visits to internship sites to observe student interns, consult with internship mentors, and assist student interns with any problems.

5. Assist in evaluation of student interns.

6. Provide mentors with current information concerning students' progress in school.

Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

Signatures:

Student Harvey Moore 1/19/11 (Sign) (Date) **Parent/Guardian** Kathleen Moore 1-18-11 (Sign) (Date)

School Administrator A McClung 1/20/11 (Sign) (Date) **Employer/Mentor** 1-20-11 (Sign) (Date)

Teacher/ Coordinator [illegible] 1/13/11 (Sign) (Date)

Internship dates for 2011

January – [illegible], 20, 25, 27, 28
February -- 3, 4, 8, 10, 15, 17, 18, 22, 24
March – 1, 3, 4, 8, 10, 15, 17, 22, 24, 29, 31
April – 5, 7, 8, 12, 14, 19, 21
May 3, 5, 10, 12, 13, 17, 19, 20

Engineering Internship Agreement – October 2011 – May 2012

Student's Name Troy Philpott | Program Engineering

School Burton Center for Arts & Technology | School Division Roanoke County Schools

Internship Site Balzer & Associates | Address 1760 Boulevard, Salem, VA

Job Title Student Intern | On-job Supervisor Craig Balzer

*PURPOSE: The purpose of this agreement is to provide a way of recording the terms of the student's internship and to outline the responsibilities of all parties involved with that internship to comply with local, federal and state requirements.

STUDENT INTERNS agree to:

1. Attend school and work regularly. The student intern will notify the school and employer by a designated time on any day absent. When a student is absent, he/she is not permitted to work that day unless advance permission has been given by the teacher-coordinator.

2. Perform internship responsibilities efficiently.

3. Show honesty, punctuality, courtesy, a cooperative attitude, proper health and grooming habits, appropriate dress, and a willingness to learn.

*4. Conform to the rules and regulations, including all safety requirements, of the internship site.

5. Furnish the teacher-coordinator with necessary information about their internship and complete promptly all necessary reports.

6. Consult the teacher-coordinator about any difficulties arising at the internship site or related to the internship program.
7. Check and respond to all messages (email and text) from teacher and mentor in a timely fashion. Check Blackboard for announcements every day. Keep teacher and mentor informed on a regular basis.
8. Complete diligently & submit time sheets and journals to the teacher as per instructions provided on Blackboard.
9. Students will attend class at Burton on B days when they are not scheduled to be at internship.

MENTORS agree to:

1. Provide students the opportunity to receive on-the-job experiences. Students will attend the internship site on B-days (projected dates provided at the end of this document) which are alternating days between 8:00AM and 11:00AM at a minimum to complete a minimum of 70 hours.

2. Provide varied occupational experiences which expose students to as many aspects of the operation as possible.

*3. Assist students in completing job-related projects and provide available instructional materials and occupational guidance.

*4. Adhere to federal and state regulations regarding labor laws, safety regulations, and other applicable legislation.

5. Consult the coordinator as soon as possible regarding work-related problems.

6. Continue with interns throughout the academic year, provided their job and school performances remain satisfactory.

7. Provide time for consultation with the teacher-coordinator to evaluate students' on-the-job performance.

*Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry*

PARENTS/GUARDIANS agree to:

1. Support the internship method of education and encourage competent participation of student interns.

*2. Assume responsibility for the safety of students from the time they leave home or school until they report to the job and from the time they leave the job until they arrive at home or at school.

3. Be responsible for transportation of students to and from the internship site.

4. Cooperate with all rules and policies of the school and internship site.

5. Be aware that students are not allowed to report to the training station on days they are absent from school unless they receive permission from the teacher-coordinator.
6. Be aware that students will be evaluated by mentors as well as teachers.

TEACHER-COORDINATORS agree to:

*1. Provide related classroom instruction, including safety procedures.

*2. Assume responsibility for initiating and developing individual internship experiences.

*3. Cooperate with internship sites in developing appropriate training activities related to student interns' career interests.

*4. Make periodic visits to internship sites to observe student interns, consult with internship mentors, and assist student interns with any problems.

5. Assist in evaluation of student interns.

6. Provide mentors with current information concerning students' progress in school.

Meets requirements of the *Work-Training Student Learner Agreement, Virginia Department of Labor and Industry

Signatures:

Student _____ (Sign) 11/7/11 (Date) **Parent/Guardian** Patsia Philpott (Sign) 11/7/11 (Date)

School Administrator _____ (Sign) 11/17/11 (Date) **Employer/Mentor** _____ (Sign) VICE PRESIDENT (Date) 11/7/11

Teacher/ Coordinator _____ (Sign) 11/17/11 (Date)

Internship dates for 2011-2012
November 7, 10, 14, 18, 22, 28, 30
December 2, 8,12,14,16
January 3, 5, 9, 11,17, 23, 25, 27, 31
February 2,7,9, 13, 17, 21, 23, 27 29
March 2, 6, 8, 12, 20, 22, 26, 28, 30
April 3, 5, 17, 19, 23, 27
May 1, 3, 7, 11, 15, 17

NOTE: If there are any school closings, then our schedule will change beyond that date and I will update the schedule at that time.

Appendix F:

Associate Degree

ASSOCIATES DEGREE AVAILABLE THROUGH
VIRGINIA WESTERN COMMUNITY COLLEGE
AND
ROANOKE COUNTY PUBLIC SCHOOLS

A Roanoke County student may earn an associate's degree through Virginia Western Community College by taking dual enrollment courses and AP courses (a 3 or better must be achieved on the AP College Board exam before VWCC credit is awarded). Most courses may be taken through the student's normal high school schedule with few exceptions where VWCC requires that some classes be taken on the VWCC campus during weekend courses, online courses, or a hybrid of both weekend and online courses. A detailed separate brochure is available in your school's guidance office if a student is interested. Please contact your child's guidance counselor for the brochure and more specific information.

Appendix G:

Plans of Study

Roanoke County Governor's STEM Academy

CTE Course Descriptions (9th – 12th grade)
CTESO Affiliations and Sample Leadership Events
Dual Enrollment Linkage (Virginia Community College System)

Pathway 1

Cluster: Science, Technology, Engineering & Mathematics
Pathway: Engineering and Technology
Goal: Advance Diploma

STATE COURSE ID	STATE COURSE NAME	Course Description	CTESO Sample Leadership co-curricular activities	VA Community College Course ID for Dual Enrollment
8450	Engineering Explorations I	This is the first course of a possible four-course pathway that will enable students to examine technology and engineering fundamentals related to solving real-world problems. Students will be exposed to a variety of engineering specialty fields and related careers to determine whether they are good candidates for postsecondary educational opportunities in engineering. Students will gain a basic understanding of engineering history and design, using mathematical and scientific concepts. Students will participate in hands-on projects in a laboratory setting as they communicate information through team-based presentations, proposals, and technical reports.	TSA	
8435	Technical Drawing and Design	This laboratory-oriented course provides a basic background of skills and an understanding of the broad scope of technical drawing (drafting). Students will use both traditional and computerized equipment. The latest CAD software will be used. This course is recommended for students planning careers in engineering, architecture, drafting, or technology. Students will participate in TSA activities.	TSA & Sample co-curricular activities CAD Engineering Design Technology Bowl	DRF 201
6612	Computer	Microsoft Office Students apply problem-solving skills to real-life situations through MS Office basic and advanced word processing, spreadsheet, database,	FBLA & Sample co-curricular activities	AST 101 & AST 140

	Information Systems	and multimedia presentation software, and through integrated software activities. This course covers the competencies needed to take MOS certification exams. By passing an exam a student will obtain a verified credit. Students may participate in Cooperative Office Education and earn an additional unit of credit. Students will participate in FBLA activities.	Computer Applications Job Interview Word Processing	
8452	Engineering Concepts and Processes III	This is the third of a possible four-course pathway that will enable students to examine technology and engineering fundamentals related to solving real-world problems. This course focuses on building an engineering team, working with case studies, managing projects, applying logic and problem-solving skills, delivering formal proposals and presentations, and examining product and process trends. In addition, students continue to investigate a variety of engineering specialty fields and related careers to determine whether they are good candidates for postsecondary educational opportunities in engineering. (*Engineering Methods*)	TSA & Sample co-curricular activities CAD Engineering Design Technology Bowl	Eng 120 & 124
6120	Economics and Personal Finance	Students learn how to navigate the financial decisions they must face and to make informed decisions related to career exploration, budgeting, banking, credit insurance, spending taxes, saving, investing, buying/leasing a vehicle, living independently, and inheritance. This finance course is required for graduation beginning with the class of 2014.	FBLA & Sample co-curricular activities Banking & Financial Systems Business Ethics Economics	FIN 107
8453	Engineering Practicum IV	This is the fourth course of a possible four-course pathway that will enable students to examine technology and engineering fundamentals related to solving real-world problems. To do so, students examine ethics and intellectual property and design a practicum project, a culmination of knowledge and skill they gained in the previous engineering courses. In addition, students continue to investigate a variety of engineering specialty fields and related careers to determine whether they are good candidates for postsecondary educational opportunities in engineering. (*Engineering Research)*	TSA & Sample co-curricular activities CAD Engineering Design Technology Bowl	
8491	Advanced Engineering II	To learn the applications and design process of engineering, students form engineering teams and select a group design problem. Each team uses communications, graphics, mathematics, and community resources to solve problems. Each team learns appropriate information in order to complete a project. Projects may be models, systems, or products that creatively solve an engineering problem.	TSA & Sample co-curricular activities Cyberspace Pursuit Career Comparisions	

8465	Technology Studies I	Engineering Economy presents economic analysis of engineering alternatives. Studies include economic and cost concepts, calculating economic equivalence, comparing alternatives, replacement economy, economic optimization in design and operation, depreciation, and after-tax analysis. Dual enrollment with Virginia Western will be offered. *(Engineering Economy)*	FBLA & Sample co-curricular activities Banking & Financial Systems Business Ethics Economics	ENG 206
8498	Technology Education Dual Enrollment	This course introduces mechanics of vector forces and space, scalar mass and time, including S.I. and U.S. customary units. Statics teaches equilibrium, free-body diagrams, moments, couples, distributed forces, centroids, moments of inertia analysis of two-force and multi-force members and friction and internal forces. Dual enrollment with Virginia Western will be offered. *(Engineering Mechanics Statics)*	TSA & Sample co-curricular activities Cyberspace Pursuit Career Comparisons	ENG 140

Possible Industry Certifications:

- AutoCad Certification (Certiport)
- Workplace Readiness Skills for the Commonwealth Examination
- Microsoft Office Specialist (MOS)
- W!SE Financial Literacy
- The National Career Readiness Certificate

Completer Sequences

8452 Engineering Concepts and Processes III *and* 8453 Engineering Practicum IV

CTE-Student Organization Affiliations:
TSA
FBLA

Pathway 2

Cluster: Science, Technology, Engineering & Mathematics
Pathway: Engineering and Technology
Goal: Standard Diploma

STATE COURSE ID	STATE COURSE NAME	Course Description	CTESO Sample Leadership co-curricular activities	VA Community College Course ID for Dual Enrollment
6612	Computer Information Systems	Students are introduced to a broad range of computer technology including Web page design, programming, graphics, computer applications, networking, internet fundamentals and computer maintenance/ upgrading/troubleshooting. Teamwork and communication skills are emphasized. This course covers the competencies needed to take the associated certification exam. By passing the exam a student will obtain a verified credit. Students will participate in FBLA activities.	FBLA & Sample co-curricular activities Business Skills and Knowledge Entrepreneurship Management Decision Making	
8435	Technical Drawing and Design	This laboratory-oriented course provides a basic background of skills and an understanding of the broad scope of technical drawing (drafting). Students will use both traditional and computerized equipment. The latest CAD software will be used. This course is recommended for students planning careers in engineering, architecture, drafting, or technology. Students will participate in TSA activities.	TSA & Sample co-curricular activities CAD Engineering Design Technology Bowl	DRF 201
8539	Precision Machining Technology I	Students will obtain the core skills needed to become Engineering Technicians that include: • Automation Operations and Programmable Controllers • Basic Component Adjustments • Gauging, Indexing, Sorting, Queuing and Torque • Servicing Robotic Assembly units • Multiple Station Control • Mechanical Fabrication • Pneumatics and Hydraulics • Program will include a Dual Enrollment option with VWCC • Program will include cooperative education or internship options (Mechatronics I)	SkillsUSA	

8436	Engineering Drawing and Design	Engineering Drawing provides students with the opportunity to experience the graphic language of industry for engineers, manufacturers, and technicians. It provides experiences with greater depth in drawing problems, skills, and techniques. Emphasis is placed on interpretation of industrial prints, ability to use handbooks and other resource materials, and adherence to established standards for drafting. An important aspect of this course is the application of drafting principles to typical engineering drawing and design problems. Students will participate in TSA activities.	TSA & Sample co-curricular activities CAD Engineering Design Manufacturing Prototype Technology Bowl	DRF 202 & DRF 203
8540	Precision Machining Technology II	Students will build upon the core skills developed in Precision Machining Technology I (Mechatronics) that are needed to become Engineering Technicians including: • D.C. and A.C. Circuits • Technical Computer Applications including basic exposure to the use of AutoCad and Inventor • Introduction to Engineering Design and applications using VEX Robots • Mechanisms • Applied Hydraulics and Pneumatics • Introduction to Electronics • Applied Technology • Principles and Applications of Robotics • Intro to Basic Computer Integrated Manufacturing • Materials and Processes of Manufacturing • Automated Manufacturing Systems • Introduction to Problem Solving in Technology • Orientation to Engineering *(Mechatronics II)*	Skills USA	
6120	Economics and Personal Finance	Students learn how to navigate the financial decisions they must face and to make informed decisions related to career exploration, budgeting, banking, credit insurance, spending, taxes, saving, investing, buying/leasing a vehicle, living independently, and inheritance. This finance course is required for graduation beginning with the class of 2014.	FBLA & Sample co-curricular activities Banking & Financial Systems Business Ethics Economics	FIN 107
8437	Architectural Drawing & Design	Architectural Drawing is offered as a personal use class to students who wish to further their knowledge in the field of architecture. This laboratory-oriented course provides students with the opportunity to learn more about financing, designing, drawing plans, dimensioning, and making prints for a home of the	TSA & Sample co-curricular activities Architectural Model CAD	DRF 202

		student's choice. It provides information helpful for the homeowner and is especially beneficial to the future architect, interior designer, or home builder. Students will participate in TSA activities.	Technology Bowl	
8541	Precision Machining Technology III	Students apply industrial safety and environmental protection; planning, management, and performance of machining jobs; quality control; process improvement; general maintenance; engineering drawings and sketches; and application of measurements; metalworking theory; properties of materials; and principles of CNC. Precision Machining Technology programs may be certified by NTMA (National Tooling and Machining Association), the certifying agency for the National Institute for Metalworking Skills (NIMS). The cooperative education method is available for this course. Students combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year. *(Mechatronics III)*	Skills USA	

Possible Industry Certifications:

AutoCad Certification (Certiport)
Workplace Readiness Skills for the Commonwealth Examination
Microsoft Office Specialist (MOS)
W!SE Financial Literacy

Completer Sequences

6612 Computer Information Systems ***and*** 6120 Economics and Personal Finance
8435 Technical Drawing and Design ***and*** 8436 Engineering Drawing and Design
8539 Precision Machining Technology I ***and*** 8540 Precision Machining Technology II

CTE-Student Organization Affiliations:
TSA
FBLA
Skills USA

Pathway 3

Cluster: Transportation, Distribution, and Logistics
Pathway: Facility and Mobile Equipment Maintenance

STATE COURSE ID	STATE COURSE NAME	Course Description	CTESO Sample Leadership co-curricular activities	VA Community College Course ID for Dual Enrollment
8506	Automotive Technology I	Auto Service Technology I is designed to develop mental and manipulative skills relating to basic auto repair operations and the safety procedures for this field of work. Included in this course of study are auto servicing, brake systems, and electrical systems. Training in Auto Service Technology I includes studying theory from text as well as the study and disassembly of nonfunctional and functional automotive assemblies. Text and activities are designed to prepare the student for the ASE certification test. A certification test registration cost is required. By passing the test, a student can obtain up to 2 verified credits. Participation in SkillsUSA student organization activities is required.	T & I - SkillsUSA	AUT 265
8435	Technical Drawing and Design	This laboratory-oriented course provides a basic background of skills and an understanding of the broad scope of technical drawing (drafting). Students will use both traditional and computerized equipment. The latest CAD software will be used. This course is recommended for students planning careers in engineering, architecture, drafting, or technology. Students will participate in TSA activities	TSA & Sample co-curricular activities CAD Engineering Design Technology Bowl	DRF 201
8175	Sports, Entertainment, and Recreation Marketing	This introductory course helps students develop a thorough understanding of fundamental marketing concepts and theories as they relate to the sports, entertainment, and recreation industries. Students will investigate the components of branding, sponsorships and endorsements, as well as promotion plans needed for sports, entertainment and recreation events. The course also supports career development skills and explores career options. Academic skills (mathematics, science, English, and history/social science) related to the content are a part of this course. The cooperative education method is available for this course. Students combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year.	DECA & Sample co-curricular activities Sports and Entertainment Marketing Business Services Creative Marketing	

8509	Motorsports Technology I	Instruction will be provided in the principles of race car fabrication and all facets of the racing industry. The course will also include chassis preparation, racing protocol, and regulatory compliance. Business aspects of the motorsports industry will also be taught. The class will build some type of drag car. Students will also get to work on the school drag car which is a 1928 Roadster Super Comp Car. Students will learn to use metal shaping equipment such as the English wheel, bead roller tubing bender, and sheet metal brake. Some types of welding such as GMAW & GTAW are taught. Chassis fabrication is the most useful part of building a car. Participation in SkillsUSA student organization activities is required. Students are required to purchase 24-hour accident insurance and to purchase proper clothing and safety attire. Students will need to buy a class work shirt, welding helmet, and welding gloves at a cost of $70. Students must also have work gloves, steel-toed boots, blue jeans (no frayed edges), cotton t-shirt, long sleeve cotton work shirt, and other materials. Participation in SkillsUSA student organization activities is required.	Trade & Industry SkillsUSA	MTS 130 & 125
8672	Welding I	Emphasis is placed on SMAW and GMAW – Oxy Fuel cutting and safety in the shop. This is the first 360 hours of the 1,000 hours that must be completed to take the American Welding Society Entry Level I Certification. This course covers the competencies needed to take the associated certification test. Students must take and pass the AWS certification test in order to receive program completer certification. A certification test registration cost may be required. By passing the test, a student can obtain up to 2 verified credits. Participation in SkillsUSA student organization activities is required. Students must purchase the following: welding helmet and lens, welding gloves, work gloves, steel-toed boots, blue jeans—no frayed edges, cotton t-shirt, long sleeve cotton work shirt, and other materials.		WEL 121
6120	Economics and Personal Finance	Students learn how to navigate the financial decisions they must face and to make informed decisions related to career exploration, budgeting, banking, credit insurance, spending, taxes, saving, investing, buying/leasing a vehicle, living independently, and inheritance. This finance course is required for graduation beginning with the class of 2014.	FBLA & Sample co-curricular activities Banking & Financial Systems Business Ethics Economics	FIN 107
8510	Motorsports Technology II	Instruction will be provided in the principles of race car fabrication and all facets of the racing industry. The course will also include chassis	Trade & Industry SkillsUSA	MTS 126, 131

		preparation, racing protocol, and regulatory compliance. Business aspects of the motorsports industry will also be taught. The class will build some type of drag car. Students will also get to work on the school drag car which is a 1928 Roadster Super Comp Car. Students will learn to use metal shaping equipment such as the English wheel, bead roller tubing bender, and sheet metal brake. Some types of welding such as GMAW & GTAW are taught. Chassis fabrication is the most useful part of building a car. Participation in SkillsUSA student organization activities is required. Students are required to purchase 24-hour accident insurance and to purchase proper clothing and safety attire. Students will need to buy a class work shirt, welding helmet, and welding gloves at a cost of $70. Students must also have work gloves, steel-toed boots, blue jeans (no frayed edges), cotton t-shirt, long sleeve cotton work shirt, and other materials. Participation in SkillsUSA student organization activities is required.		
8539	Precision Machining Technology I	Students will obtain the core skills needed to become Engineering Technicians that include: • Automation Operations and Programmable Controllers • Basic Component Adjustments • Gauging, Indexing, Sorting, Queuing and Torque • Servicing Robotic Assembly units • Multiple Station Control • Mechanical Fabrication • Pneumatics and Hydraulics • Program will include a Dual Enrollment option with VWCC • Program will include cooperative education or internship options (Mechatronics I)	Trade & Industry Skills USA	
8511	Motorsports III	Instruction will be provided in the principles of race car fabrication and all facets of the racing industry. The course will also include chassis preparation, racing protocol, and regulatory compliance. Business aspects of the motorsports industry will also be taught. The class will build some type of drag car. Students will also get to work on the school drag car which is a 1928 Roadster Super Comp Car. Students will learn to use metal shaping equipment such as the English wheel, bead roller tubing bender, and sheet metal brake. Some types of welding such as GMAW & GTAW are taught. Chassis fabrication is the most useful part of building a car. Participation in SkillsUSA student organization activities is required. Students are required to purchase 24-hour accident insurance and to purchase proper clothing and safety attire. Students will need to buy a class work shirt, welding helmet, and welding gloves at a cost of $70. Students must also have work gloves,	Trade & Industry Skills USA	MTS 132, 135

		steel-toed boots, blue jeans (no frayed edges), cotton t-shirt, long sleeve cotton work shirt, and other materials. Participation in SkillsUSA student organization activities is required.		
8130	Advanced Marketing (Cooperative Education Option available)	Advanced Marketing enables students to develop competencies needed to advance in full-time employment in marketing. Students develop advanced competencies in several of the same areas studied in Marketing and, in addition, develop competencies in the areas of supervision, merchandising, market research, and management. Students combine classroom instruction with continuous, on-the-job training during the school year supervised by the marketing coordinator. On-the-job training during summer months also may be counted if supervised by the marketing coordinator with a training agreement and plan. Students will participate in DECA activities.	DECA & Sample co-curricular activities Business Services Business Law and Ethics Professional Selling	

Possible Industry Certifications:

Workplace Readiness Skills for the Commonwealth Examination
W!SE Financial Literacy

Completer Sequences

8175 Sports, Entertainment, and Recreation Marketing ***and*** 8130 Advanced Marketing
8509 Motorsports Technology I ***and*** 8510 Motorsports Technology II

CTE-Student Organization Affiliations:

TSA
FBLA
Skills USA
DECA

Pathway 4

Cluster: Arts, Audio/Video Technology & Communications
Pathway: Journalism & Broadcasting

STATE COURSE ID	STATE COURSE NAME	Course Description	CTESO Sample Leadership co-curricular activities	VA Community College Course ID for Dual Enrollment
8688	Television and Media Production I	Students will study the history and development of television, radio, and print media. Areas of study will include ethics, responsibilities, marketing, public speaking, and career opportunities associated with the media profession. Students will be given hands-on experience with video, audio, multimedia/Web, and print production. Media related field trips and guest speakers will be used to provide students an understanding of the industry. Students will complete a mass media project during the year. Project plans will be reviewed and approved by a committee of media professionals. (History of Mass Communications)	Trade & Industry Skills USA	BCS 140
6612	Computer Information Systems	Microsoft Office Students apply problem-solving skills to real-life situations through MS Office basic and advanced word processing, spreadsheet, database, and multimedia presentation software, and through integrated software activities. This course covers the competencies needed to take MOS certification exams. By passing an exam a student will obtain a verified credit. Students may participate in Cooperative Office Education and earn an additional unit of credit. Students will participate in FBLA activities.	FBLA & Sample co-curricular activities Computer Applications Job Interview Word Processing	AST 101 & AST 140
8689	Television and Media Production II	This is the second course in the 4-year sequence of mass communications study. Students will delve further into the role media plays in both shaping and reflecting culture. Students will develop skills in copywriting, reporting, script writing, public speaking, and editing by producing video, radio, newspaper, and magazine reports. Projects will include development of keyboarding, desktop publishing, digital and film photography, graphic design, and audio/video production skills. Topics in the legal, ethical, and	Trade & Industry Skills USA	BCS 110

		economic fundamentals of communication/media will be explored. Field trips will continue to be a critical part of the instructional process. Students will complete a variety of mass media projects throughout the year. (Media Production I)		
6120	Economics and Personal Finance	Students learn how to navigate the financial decisions they must face and to make informed decisions related to career exploration, budgeting, banking, credit insurance, spending, taxes, saving, investing, buying/leasing a vehicle, living independently, and inheritance. This finance course is required for graduation beginning with the class of 2014.	FBLA & Sample co-curricular activities Banking & Financial Systems Business Ethics Economics	FIN 107
8690	Television and Media Production III	This is the third course in the 4-year sequence of mass communications study. Students will delve further into the roll media plays in both shaping and reflecting culture. Students will develop skills in copywriting, reporting, script writing, public speaking, and editing by producing video, radio, newspaper, and magazine reports. Projects will include development of keyboarding, desktop publishing, digital and film photography, graphic design, and audio/video production skills. Topics in the legal, ethical, and economic fundamentals of communication/media will be expanded. Field trips based on the various areas of the industry will continue to be a critical part of the instructional process. Students will create a personal portfolio of work in an area of choice within the field of mass media.	Trade & Industry Skills USA	BCS 117
6630	Design, Multimedia, and Web Technologies	Students develop proficiency in designing and creating desktop-published projects, multimedia presentations/projects, and Web sites, using industry-standard application software. Students apply principles of layout and design in completing projects. Students create portfolios that include a résumé and a variety of desktop-published, multimedia, and Web-site projects produced in the course. The cooperative education method is available for this course. In this method, classroom instruction is combined with on-the-job training in an approved position, supervised continuously throughout the school year, to broaden the students' educational experiences.	FBLA & Sample co-curricular activities Computer Applications Job Interview Word Processing	AST 253
8801	Trade and Industrial Education Dual Enrollment	This is the fourth course in the 4-year sequence of mass communications study. Students will continue their study of the role media plays in both shaping and reflecting culture. Using the foundational skills learned in Media Production I & II, students will hone skills in copywriting, reporting, script writing, public speaking, and editing by producing video, radio, newspaper, and magazine reports. Students will select one area of the industry, and with the guidance of the instructor, develop a related project.	Technology Education	BCS 198

		Further exploration of topics in the legal, ethical, and economic fundamentals of communication/media will occur. Field trips will continue to be a critical part of the instructional process. Students will complete a variety of mass media projects throughout the year. (Applied Media Production)		
WBL3	Work-Based Learning Internship	This course must be taken along with Applied Media Production. Students will work with the instructor to identify the student's primary area of interest and skill within the industry. Students will be placed in a community business for an internship experience to take place throughout the school year. The student must complete 140 hours. The course instructor will supervise all student placements and work closely with industry mentors to assess student progress and further develop student skills. In addition, students will spend 40 hours in classroom seminars focused on job and employment related skills. Seminar includes study of postgraduate opportunities. (Media Production Internship)		BCS 190

Possible Industry Certifications:

Workplace Readiness Skills for the Commonwealth Examination
W!SE Financial Literacy
Adobe Certified Associate
Microsoft Office Specialist

Completer Sequences

8688 Television and Media Production I ***and*** 8689 Television and Media Production II
6612 Computer Information Systems ***and*** 6630 Design, Multimedia, and Web Technologies

CTE-Student Organization Affiliations:

FBLA
Skills USA

Roanoke STEM Academy
Plan of Study

Student Name: _____
School: _____
Date: _____
Career Goal: _____

Cluster: Arts, Audio/Video Technology & Communications

Pathway: Journalism & Broadcasting

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

	Diploma Type						Diploma Recognition							
Secondary Education Goal		Standard		Advanced		Modified		*Early College Scholars*		*Governor's Seal*		*CTE Diploma Seal*		*Adv Math & Tech Seal*
Post Secondary Goal:		4 – Year College/University		2-Year Community College			2- Year Technical/Trade School			Military/Branch _____		Other _____		
Career Prep Planning Resources		PSAT		SAT		ACT		ASVAB		Career Assessment Instrument: VA Wizard		Other:_____		

EARNED INDUSTRY CERTIFICATIONS			
WRS	DATE	Adobe Certified Associate	DATE

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities *Recommended not required	Recommended Career and Technical Courses Source: Administrative Planning Guide http://www.cteresource.org/apg/ *Recommended not required	SAMPLE – Occupations Relating to This Pathway: http://www.doe.virginia.gov/instruction/career_technical/career_clusters/sample_plans_study/index.shtml http://www.careerclusters.org http://www.cteresource.org/cpg/
Graduation Requirements: http://www.doe.virginia.gov/instruction/graduation/index.shtml								Art Director - Audio-Video Operator - Broadcast News Analyst - Broadcast Technician - Design Director - Editor - Journalist - Layout/page Designer - Photojournalist - Producer - Public Relations Director - Publisher - Radio and Television Announcer - Reporter - Researcher - Station Manager - Technical Writer - Webmaster - Writer
MIDDLE	7	1110 - Pre AP English 7	3111 – Math 7	4115 – Life Science	2354 – Pre AP US History: 1865 to Present			
MIDDLE	8	1120 - Pre AP English 8	3112 - Math 8 or 3130 - Algebra I	4125 – Physical Science	2357 - Pre AP Civics and Economics	Foreign Language*		
SECONDARY	9	1130 - Pre AP English 9	3130 - Algebra I or 3143 - Geometry	4210 - Earth Sciences	2210 - Pre-AP World Geography or 2215 - Pre AP World History to 1500	7300 - Health and PE 9 Foreign Language*	8688 - Television and Media Production I *(DE BCS 140)* 6612 - Computer Information Systems *(DE AST 101 & AST 140 and CLEP – ITE 115)*	
SECONDARY	10	1140 - Pre AP English 10	3143 - Geometry or 3135 - Algebra II	4310 – Pre AP Biology *(CLEP - BIO 101-102)*	2380 - AP World History or 2216 - Pre AP World History from 1500	7400 - Health and PE 10 Foreign Language*	8689 – Television and Media Production II *(DE BCS 110)* 6120 - Economics & Personal Finance *(DE FIN 107)*	
SECONDARY	11	1196 - AP English 11 *(Eng 111 – 112)*	3135 - Algebra II or 3162 - Pre-Calculus	4410 - Chemistry *(CLEP - CHM 111-112)*	2319 - AP US History *(DE HIS 121-122)*	Foreign Language*	8690 - Television and Media Production III *(DE BCS 117)* 6630 - Design, Multimedia, and Web Technologies *(DE – AST 253)*	
SECONDARY	12	1195 - AP English 12 *(Eng 243-244)*	3192 - AP Statistics or 3162 - Pre-Calculus or 3177 - AP Calculus AB or 3160 - College Math	4570 - AP Physics or 4470 - AP Chemistry or 4370 - AP Biology	2245 - AP Government and Politics		8801 – Trade and Industrial Education Dual Enrollment *(DE BCS 198)* WBL3 - Work-based Learning Internship *(DE BCS 190)*	

High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

List related certifications/credentials approved by VDOE and offered locally: http://www.cteresource.org/apq (Go to Certification – License Section)	College Credit or College Readiness for this pathway may be determined through:	Additional Learning Opportunities:
		CTSO Organization(s): ☐ DECA ☒ FBLA ☐ FCCLA ☐ FFA ☐ FEA ☐ HOSA ☒ SkillsUSA ☐ TSA
• Workplace Readiness Skills for the Commonwealth • WISE Financial Literacy • Adobe Certified Associate • Microsoft Office Specialist	• Dual Enrollment HS Courses • Placement Assessments such as COMPASS & SAT II • College Entrance Exams such as ACT & SAT	Work-Based Learning: ☒ Career Research ☒ Cooperative Education ☒ Internship ☒ Mentorship ☒ Job Shadowing ☒ Service Learning Project ☐ Student Apprenticeship

POSTSECONDARY - COMMUNITY COLLEGE or APPRENTICESHIP - Determined Locally

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY

Individual plans must include locally agreed upon courses at the postsecondary level (See page 2)

Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree	Postgraduate Degree
Journalism & Broadcasting	Liberal Arts (AS) 60 cr	(Determined locally)	(Determined locally – optional)

POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives			
Year 1 1st Semester	ENG 111 (AP) SDV 100	MTH 151 (CLEP)	BIO 101 (CLEP)	HIS 121 (DE)	BCS 140 (DE) CST 100	BCS 110 (DE)	BCS 117 (DE)	BSC 198 (DE)
Year 1 2nd Semester	ENG 112 (AP)	MTH 152	BIO 102 (CLEP)	HIS 122 (DE)	BCS 190 (DE)	AST 140 (DE)	AST 253 (DE)	AST 101 (DE)
Year 2 1st Semester	ENG 243 (AP)	MTH 157 (AP)	PHY 201 (AP)	PLS 211 (DE)	HLT/PED	ITE 115 (CLEP)	SPA 101 (CLEP)	FIN 107 (DE)
Year 2 2nd Semester	ENG 244 (AP)		PHY 202 (AP)	PLS 212 (DE)	HLT/PED		SPA 102 (CLEP)	

College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

Related Industry Certifications Available:	Additional Suggested Learning Opportunities:
	Work-Based Learning: ☐ Cooperative Education ☐ Internship ☐ Mentorship ☐ Job Shadowing ☐ Service Learning Project ☐ Registered Apprenticeship

UNIVERSITY

University/College:
Degree or Major:
Number of Articulated CC Credits:

Notes:

Roanoke STEM Academy
Plan of Study

Student Name: _____
School: _____
Date: _____
Career Goal: _____

Cluster: Transportation, Distribution, and Logistics

Pathway: Facility and Mobile Equipment Maintenance

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

	Diploma Type						Diploma Recognition							
Secondary Education Goal	■	Standard		Advanced		Modified		*Early College Scholars*		*Commonwealth Scholars*	■	*CTE Diploma Seal*		*Adv Math & Tech Seal*
Post Secondary Goal:		4 – Year College/University	■	2-Year Community College	■		2- Year Technical/Trade School			Military/Branch _____		Other _____		
Career Prep Planning Resources	■	PSAT	■	SAT		ACT		ASVAB		Career Assessment Instrument: ■ VA Wizard		Other:_____	EARNED INDUSTRY CERTIFICATIONS: WRS _____ DATE	W!SE Financial Literacy _____ DATE

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses Administrative Planning Guide http://www.cteresource.org/apg/ *Recommended not required
Graduation Requirements: http://www.doe.virginia.gov/instruction/graduation/index.shtml							
MIDDLE	7	1110 – English 7	3111 – Math 7	4115 – Life Science	2354 – US History: 1865 to Present		
MIDDLE	8	1120 – English 8	3112 - Math 8	4125 – Physical Science	2357 – Civics and Economics		8463 - Technological Systems* 6451 - Keyboarding*
SECONDARY	9	1130 - English 9	3130- Algebra I	4210 - Earth Sciences	2210 - World Geography or 2215 - Pre AP World History/Geography to 1500	7300 - Health and PE 9	8435 - Technical Drawing and Design *(DE – DRF 201)* 8506 – Automotive Technology I *(DE –AUT 265)** 8175 -Sports, Entertainment, and Recreation Marketing
SECONDARY	10	1140 - English 10	3143 - Geometry	4310 - Biology	2380 - AP World History or 2216 - Pre AP World History/Geography 1500 to Present	7400 - Health and PE 10	8509 - Motorsports Technology I *(DE MTS 130, 125)* 8672 - Welding I *(DE – WEL 121)*
SECONDARY	11	1150 - English 11	3184 - Computer Math or 3134 - Algebra, Functions and Data Analysis or 3135 - Algebra II	4410 – Chemistry or 4340 – Ecology	2360 - US & Virginia History		8510 - Motorsports Technology II *(DE MTS 126, 131)* 8539 - Precision Machining Technology I 6120 - Economics & Personal Finance *(DE FIN 107)*
SECONDARY	12	1160 - English 12 *(DE – ENG 243-244)*	3134 - Algebra, Functions and Data Analysis or 3135 - Algebra II	4410 – Chemistry or 4340 – Ecology or 4510 – Physics	2440 - US/VA Government		8511 - Motorsports Technology III *(DE MTS 132, 135)* 8130 - Advanced Marketing*

SAMPLE – Occupations Relating to This Pathway:
http://www.doe.virginia.gov/instruction/career_technical/career_clusters/sample_plans_study/index.shtml
http://www.careerclusters.org
http://www.cteresource.org/cpg/

Aerospace Engineering/Operations Technician
- Aircraft Body/Bonded Structure Repairer
- Aircraft Mechanic/Service Technician
- Automotive Body/Related Repairer
- Automotive Glass Installer/Repairer
- Automotive Service Technician/ Mechanic
- Avionics Technician
- Bus/Truck Mechanic
- Collision Repair Technician
- Diesel Engine Specialist
- Diesel Service Technician
- Electrical/Electronic Installer/Repairer
- Electrical/Electronic Technician
- Facility Maintenance Manager/ Engineer
- Industrial Electrician
- Industrial Equipment Mechanic
- Motorboat Mechanic
- Off-Road Equipment Technician
- Rail Locomotive/Car Mechanic/ Repairer
- Service Manager
- Service Writer
- Ship Mechanic/Repairer
- Small Engine Mechanic
- Stationary Engineer

High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

List related certifications/credentials approved by VDOE and offered locally: http://www.cteresource.org/apg (Go to Certification – License Section)	College Credit or College Readiness for this pathway may be determined through:	Additional Learning Opportunities:
• Workplace Readiness Skills for the Commonwealth • W!SE Financial Literacy	• Dual Enrollment HS Courses • CLEP Examinations • Placement Assessments such as COMPASS & SAT II • College Entrance Exams such as ACT & SAT	CTSO Organization(s): ☒ DECA ☒ FBLA ☐ FCCLA ☐ FFA ☐ FEA ☐ HOSA ☒ SkillsUSA ☒ TSA **Work-Based Learning:** ☒ Career Research ☒ Cooperative Education ☒ Internship ☒ Mentorship ☒ Job Shadowing ☐ Service Learning Project ☐ Student Apprenticeship

POSTSECONDARY - COMMUNITY COLLEGE or APPRENTICESHIP - Determined Locally

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY

Individual plans must include locally agreed upon courses at the postsecondary level (See page 2)

Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree	Postgraduate Degree
Facility and Mobile Equipment Maintenance	Motorsports Fabrication and Set Up Technology – Career Studies Certificate (29 credit hours) *Courses recommended but not required for certificate	(Determined locally)	(Determined locally – optional)

POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives			
Year 1 1st Semester	ENG 111 (AP)*	MTH 115*	HLT/PED*	HIS 121 (DE)*	MTS 130 (DE)	MTS 135 (DE)	MTS 210	SDV 108
Year 1 2nd Semester	ENG 112 (AP)*	MTH 116*	PHY 201 (AP)*	HIS 122 (DE)*	MTS 131 (DE)	MTS 295	MTS 211	
Year 2 1st Semester	ENG 243 (AP)*	MTH 157 (AP)*	PHY 202 (AP)*	PLS 211 (DE)*	MTS 132 (DE)	MTS 290	MTS 298	
Year 2 2nd Semester	ENG 244 (AP)*	MTH 151 (CLEP)*	AST 101 (DE)*	PLS 212 (DE)*				

College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

Related Industry Certifications Available:	Additional Suggested Learning Opportunities:
	Work-Based Learning: ☐ Cooperative Education ☐ Internship ☐ Mentorship ☐ Job Shadowing ☐ Service Learning Project ☐ Registered Apprenticeship

UNIVERSITY

University/College:
Degree or Major:
Number of Articulated CC Credits:

Notes:

Appendix H:

Student Admission Forms

COMPLETE IN BLACK OR BLUE INK ONLY.

Application and Registration
Burton Center for Arts & Technology
1760 Boulevard, Salem, VA 24153
(540) 562-3900 ext. 29010 Fax 857-5061
Website: www.rcs.k12.va.us/arbtc
E-mail: msteele@rcs.k12.va.us

Name _____ Base School _____
Last First Middle

Birth Date _____ Age _____ Male/Female _____

Grade Next Year _____ E-mail _____

Address _____ Home # _____ Cell # _____
Street City Zip

Rank your top 3 choices for BCAT

1st _____

2nd _____

3rd _____

Due to the number of students applying, students are not guaranteed their first choice of class.

_____
Student's Signature Date

_____
Parent's/Guardian's Signature Date

Next Year's Classes at Base School

_____

_____

_____

_____

_____

NOTE: You must have passed five credit producing courses and be enrolled in five credit courses or their equivalent to participate in all Virginia High School League activities.

Career Objective _____

Educational Goal _____

I live with: (Circle one) Dad and Mom / Dad / Mom / Dad & Stepmother / Mother & Stepfather / Guardian / Other _____

Father's Name _____

Work Place _____

Work Phone _____

Cell Phone # _____

Mother's Name _____

Work Place _____

Work Phone _____

Cell Phone # _____

NOTE: FILLING OUT THIS APPLICATION DOES NOT GUARANTEE YOUR 1ST CHOICE AT BURTON.

Roanoke County Public Schools does not discriminate with regard to race, color, national origin, sex, or handicapping condition in an educational and/or employment policy or practice. Questions and/or complaints should be addressed to the Assistant Superintendent of Administration/Title IX Coordinator at (540) 562-3900 ext. 10121 or the Associate Director of Pupil Personnel Services/ 504 Coordinator at (540) 562-3900 ext. 10182.

Date _____

Roanoke County Public Schools

CENTER FOR MASS COMMUNICATIONS

APPLICATION PACKET

The Center for Mass Communications provides a four-year course of study for students interested in participating in extensive experiences in television, radio, and print media. From classroom studies of the history and development of mass communications, to hands-on experience with video and television, audio and radio, as well as multimedia and web applications, students will gain a rich understanding of many professions possible in the communications field.

If you are interested in being a part of this unique and exciting initiative, please complete the following application packet.

NAME: _____

The completion and submission of this application by the due date noted below is the sole responsibility of the student applicant.

All student completed applications and materials are to be submitted to the school's ***guidance coordinator*** *by*

Monday, December 5, 2011.

ROANOKE COUNTY PUBLIC SCHOOLS
Center for Mass Communications
Student Application Checklist

This checklist is included in the application packet to guide students in the completion of the Center for Mass Communications application. The completion of the application is the responsibility of the applicant.

_____ **Step 1: Complete the following application packet items:**

- _____ APPLICATION COVER SHEET
- _____ STUDENT APPLICATION - GENERAL INFORMATION
- _____ WRITING SAMPLE
- _____ COUNSELOR RECORD FORM (Only complete top of form)

Deliver all items listed above to your guidance coordinator.

_____ **Step 2: Complete the top of and distribute RATING SCALES**

- _____ 7th or 8th grade Social Studies Teacher
- _____ 7th or 8th grade English Teacher
- _____ Technology or Arts Teacher

_____ **Step 3: Follow up with teachers** to ensure **RATING SCALES** have been completed and sent to your school counselor.

Give all completed application materials to your Guidance Coordinator by Monday, December 5, 2011.

If you have questions, see the **Guidance Coordinator** at the school where you attend.

Cave Spring Middle	Joan Farley
Glenvar Middle	Dr. Kristi Snow
Hidden Valley Middle	Lisa Childress
Northside Middle	Terrie Bigler
William Byrd Middle	Lubeth Jones

STUDENT APPLICATION - GENERAL INFORMATION
Center for Mass Communications

(To be completed by student)

Student ID #:_____ School: _____ Grade: _____

Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Home Phone: _____ Date of Birth: _____ Gender: _____

Name of Parent/Guardian: _____

Daytime phone number:_____

The decision to apply to the Center for Mass Communications is my own. I would like to participate fully in the program and I verify that the responses contained in this application are my own.

_____ _____
Student Signature Date

I give permission for the guidance counselor to release my child's transcript to the Center for Mass Communications Selection Committee for use solely in the selection process.

_____ _____
Parent/Guardian Signature Date

Roanoke County Public Schools does not discriminate with regard to race, color, national origin, sex, or handicapping condition in an educational and/or employment policy or practice. Questions and/or complaints should be addressed to the Deputy Superintendent/Title IX Coordinator at (540) 362-3900 ext. 10121 or the Director of Pupil Personnel Services/504 Coordinator at (540) 562-3900 ext. 10182.

WRITING SAMPLE

Center for Mass Communications

(To be completed by student)

The Selection Committee would like to get to know you better through a writing sample. Please answer the following on your own paper and submit your writing sample as a part of your application packet. All writing samples must be typed or word-processed using a 12-point font and double spacing.

Prompt:

Imagine yourself as a television reporter. You have discovered through a secret informant that the hospital where he or she is employed is overbilling the patients. Would you reveal the identity of the informant if it meant bringing the hospital to justice? This course of action would most certainly mean that the informant would lose his or her job.

Limit your response to 500 words or less.

The Selection Committee will evaluate your essay based on the following criteria:

Ideas & Content (50%)	Does the essay respond to the prompt? Is the essay creative in the response? Does the essay include relevant, detailed elaboration? Does the writer exhibit an understanding of the ethical issues involved in investigative journalism?
Organization (25%)	Does the essay have a strong introduction? Is the essay clearly organized, with well-transitioned paragraphs?
Conventions (25%)	Does the writer use proper writing conventions (spelling, punctuation, capitalization, grammar, etc.)?

GUIDANCE COUNSELOR RECORD FORM
Center for Mass Communications

Student Name: _____

Current School: _____

Current Grade: _____

School Counselor's Name: _____

School Counselor,

Please collect all student application packets for the Center for Mass Communications that are turned in to you and check to make sure all required items are included. Please include a copy of the student's seventh- and eighth-grade transcripts in the student's application packet. Send all documents, along with this cover sheet to Joe LeGault, Coordinator of English and ESL.

Thank you!

Guidance Coordinators: Please submit all completed application packets to Joe LeGault, English / ESL Coordinator, by Wednesday, December 14, 2011.

For Guidance Coordinator use only:

_____ APPLICATION COVER SHEET
_____ STUDENT APPLICATION - GENERAL INFORMATION
_____ WRITING SAMPLE
_____ GUIDANCE COUNSELOR RECORD FORM
_____ RATING FORMS
_____ TRANSCRIPTS

RATING SCALE
Center for Mass Communications

Teacher -- This is a time sensitive document. Please complete this rating scale immediately and return directly to the Guidance Coordinator at the school where the applicant attends school. Thank you.

Applicant's Name: _____ Teacher's Name: _____

Students interested in mass communications typically display some if not all of the following characteristics. Please help us understand this student by checking the column that best characterizes this student's behaviors and/or aptitudes.

This student demonstrates	Never	Rarely	Occasionally	Frequently	Always
1. a strong interest in English and Social Sciences.	☐	☐	☐	☐	☐
2. the ability to grasp new concepts easily.	☐	☐	☐	☐	☐
3. motivation and desire to be challenged academically.	☐	☐	☐	☐	☐
4. technological talents (i.e. computers).	☐	☐	☐	☐	☐
5. persistence in understanding a challenging topic.	☐	☐	☐	☐	☐
6. clear, logical thinking and questioning skills.	☐	☐	☐	☐	☐
7. good planning and organizational skills.	☐	☐	☐	☐	☐
8. the ability to recognize relationships and patterns between ideas or experiences.	☐	☐	☐	☐	☐
9. keen and insightful observations.	☐	☐	☐	☐	☐
10. follow-through behavior when not necessarily interested in a topic or problem.	☐	☐	☐	☐	☐
11. behavior that requires little direction from teachers.	☐	☐	☐	☐	☐
12. an inquisitive spirit or a willingness to take risks. Curiosity.	☐	☐	☐	☐	☐
13. the ability to adapt, improve, or modify objects or ideas.	☐	☐	☐	☐	☐
14. an ability to clearly articulate ideas.	☐	☐	☐	☐	☐
15. an openness in accepting constructive criticism.	☐	☐	☐	☐	☐
16. an ability to work well in a team.	☐	☐	☐	☐	☐
17. people skills, adaptability, social skills.	☐	☐	☐	☐	☐
18. a willingness to be open minded.	☐	☐	☐	☐	☐

_____ _____ _____

Teacher Signature Date Subject Taught

Roanoke County Public Schools

CENTER FOR ENGINEERING

APPLICATION PACKET

The Center for Engineering offers a four-year advanced curriculum integrating math, science and technology as a study of the profession of engineering. The Center's curriculum focuses on the development of the theoretical understandings of the engineering discipline and on the practical skills and understandings necessary for any engineer.

If you are interested in being a part of this unique and exciting initiative, please complete the following application packet.

NAME: _____

The completion and submission of this application by the due date noted below is the sole responsibility of the student applicant.

All student completed applications and materials are to be submitted to the school's ***guidance coordinator*** *by*

Monday, December 5, 2011

ROANOKE COUNTY PUBLIC SCHOOLS
Center for Engineering
Student Application Checklist

This checklist is included in the application packet to guide students in the completion of the Center for Engineering application. The completion of the application is the responsibility of the applicant.

_____ **Step 1: Complete the following application packet items:**

- _____ APPLICATION COVER SHEET.
- _____ STUDENT APPLICATION - GENERAL INFORMATION.
- _____ WRITING SAMPLE.
- _____ RECORD FORM (Only complete top of form)

Deliver all items listed above to your guidance coordinator.

_____ **Step 2: Complete the top of and distribute RATING SCALES**

- _____ Current Math Teacher
- _____ Current Science Teacher

_____ **Step 3: Follow up** with teachers to ensure **RATING SCALES** have been completed and sent to your school counselor.

_____ **Step 4:** Your school counselor will give ALL application packet items and RATING SCALES to the **Guidance Coordinator** BY **Monday, December 5, 2011.**

If you have any questions, see the **Guidance Coordinator** at your school:

Cave Spring Middle School	Joan Farley
Glenvar Middle School	Dr. Kristine Snow
Hidden Valley Middle School	Lisa Childress
Northside Middle School	Terrie Bigler
William Bryd Middle School	Lubeth Jones

Roanoke County Public Schools does not discriminate with regard to race, color, national origin, sex, or handicapping condition in an educational and/or employment policy or practice. Questions and/or complaints should be addressed to the Deputy Superintendent/Title IX Coordinator at (540) 562-3900 ext. 10121or the Director of Pupil Personnel Services/504 Coordinator at (540) 562-3900 ext. 10181.

STUDENT APPLICATION
GENERAL INFORMATION
Center for Engineering

Student Name:_____ Grade:_____

School:_____ Student ID Number:_____

School Counselor Name:_____

Student Address:_____

City:_____ State: _____ Zip Code:_____

Home Phone:_____ Date of Birth:_____ Gender:_____

Name of Parent/Guardian: _____

Daytime phone number:_____

The decision to apply to the Center for Engineering is my own. I would like to participate fully in the program and I verify that the responses contained in this application are my own.

I understand that completion of or current enrollment in Algebra I is a pre-requisite for the program. I further understand that if I am not enrolled in Geometry as an 8th grader, I **MUST** take Geometry in summer school before admission **OR** take it as a 9th grader at my home school in addition to Algebra II at the Engineering Center.

_____ _____

Student Signature Date

I give permission for the school counselor to release my child's transcript to the Center for Engineering Selection Committee for use solely in the selection process. I also give permission for the Roanoke County Public Schools to administer the School and College Ability Test to my child as part of the application process.

_____ _____

Parent/Guardian Signature Date

WRITING SAMPLE
Center for Engineering

(To be completed by student)

The Selection Committee would like to get to know you better through a writing sample. Please answer the following on your own paper and submit your writing sample as a part of your application packet. All writing samples must be typed or word-processed using a 12-point font and double spacing.

Prompt:

Consider your future career as a professional engineer. Describe one creative technical invention that you may patent and explain who this invention would benefit. Please include as much detail as possible (for example, materials used, the design, how it works, estimated cost, etc.) needed in the production of your invention. Limit your response to 600 words or less.

The Selection Committee will evaluate your essay based on the following criteria: (Graphics are acceptable but not included in the evaluation of your essay.)

Ideas & Content (50%)	Does the essay respond to the prompt? Is the essay creative in the response? Does the essay include relevant, detailed elaboration? Does the writer exhibit an understanding of today's technology?
Organization (25%)	Does the essay have a strong introduction? Is the essay clearly organized, with well-transitioned paragraphs?
Conventions (25%)	Does the writer use proper writing conventions (spelling, punctuation, capitalization, grammar, etc.)?

SCHOOL COUNSELOR RECORD FORM
Center for Engineering

Student Name: _____

School: _____

Grade: _____

Counselor's Name: _____

School Counselor,

Please collect all student application packets for the Center for Engineering that are submitted to you and check that all required items are included. Please include a copy of the student's seventh- and eighth-grade transcripts in the student's application packet. Give the completed application packets to your Guidance Coordinator.

Thank you!

Guidance Coordinators must submit all completed application packets to Linda Bowden, Math Coordinator, by Friday, December 14, 2011.

FOR GUIDANCE COORDINATOR USE: APPLICATION CONTENTS

_____ Application Cover Sheet

_____ Student Application – General Information

_____ Writing Sample

_____ Rating Forms

_____ Transcripts

RATING SCALE
Center for Engineering

Teacher -- This is a time sensitive document. Please complete this rating scale immediately and return it to the student's school counselor: _____.

Applicant's Name: _____ Teacher's Name: _____

Students interested in engineering typically display some if not all of the following characteristics. Please help us understand this student by checking the column that best characterizes this student's behaviors and/or aptitudes.

This student demonstrates:	Never	Very Rarely	Occasionally	Frequently	Always
1. a strong interest in math and science.	☐	☐	☐	☐	☐
2. the ability to grasp new concepts easily.	☐	☐	☐	☐	☐
3. motivation and desire to be challenged academically.	☐	☐	☐	☐	☐
4. technological talents (i.e. computers, calculators, etc.).	☐	☐	☐	☐	☐
5. persistence in understanding a challenging topic.	☐	☐	☐	☐	☐
6. clear, logical thinking and questioning skills.	☐	☐	☐	☐	☐
7. good planning and organizational skills.	☐	☐	☐	☐	☐
8. the ability to recognize relationships and patterns between ideas or experiences.	☐	☐	☐	☐	☐
9. keen and insightful observations.	☐	☐	☐	☐	☐
10. follow-through behavior when interested in a topic or problem.	☐	☐	☐	☐	☐
11. behavior that requires little direction from teachers.	☐	☐	☐	☐	☐
12. an inquisitive spirit or a willingness to take risks.	☐	☐	☐	☐	☐
13. the ability to adapt, improve, or modify objects or ideas.	☐	☐	☐	☐	☐
14. an ability to clearly articulate ideas.	☐	☐	☐	☐	☐
15. an openness in accepting constructive criticism.	☐	☐	☐	☐	☐
16. an ability to work well in a team.	☐	☐	☐	☐	☐

_____ _____ _____

Teacher Signature Date Subject Taught

Appendix I:

Assurance Statement

Roanoke County STEM Academy at The Burton Center for The Arts and Technology

Statement of Assurances

The signature on this page certifies the following to the Virginia Department of Education:

1. The planning committee has reviewed the provisions of *Administrative Procedures Guide for the Establishment of Governor's Career and Technical Academies* outlined in the Guidance Manual, and understands that the implementation proposal addresses these criteria and others approved by the Virginia Board of Education.
2. The planning committee agrees to follow the guidelines set forth in the *Administrative Procedures Guide for the Establishment of Governor's Career and Technical Academies.*
3. If the Roanoke County STEM Academy at The Burton Center for The Arts and Technology will be a jointly operated program, an ongoing governing board will be established and maintained to reflect current Board of Education regulations relative to jointly operated schools and programs.
4. Roanoke County Schools will serve as the grant fiscal agent.

Certification by Authorized Institutional Official:

The applicant certifies that to the best of his or her knowledge the information in this application is correct, that the filing of this application is duly authorized by the partners participating in this process to establish a Governor's Career and Technical Academy, and that the applicant will comply with the above statement of assurances.

Dr. Lorraine Lange, Superintendent, Roanoke County Schools

Lorraine Lange — 11/22/11

Signature — Date

The Roanoke County Governor's STEM Academy
Roanoke County Public Schools

STATEMENT OF OPERATING FUNDS AND FACILITIES ASSURANCE

The authorized signature on this page certifies to the Virginia Department of Education that the authorized official assures that:

1. Operating funds and facilities are available to support the Governor's STEM Academy.
2. Operating funds and facilities are available to adequately support the needs of the programs at The Roanoke County Governor's STEM Academy.

Certification by Authorized or Institutional Official:

The applicant certifies that to the best of her knowledge the information in this application is correct, that the filing of this application is duly authorized by the partners participating in this process to establish a Governor's STEM Academy, and that the applicant will comply with the above statement of assurances.

Lorraine S. Lange
Printed Name of Authorized Official

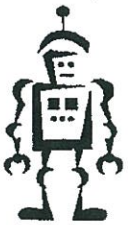
Superintendent
Title

Lorraine S. Lange
Signature of Authorized Official

11/23/11
Date

Appendix J:

Summer Camp Information

June 13-16 Robotics	June 13-16 Triple Threat	June 13-16 TV Production	July 18- 21 Sculpture
 Center for Engineering Instructor: Suzanne Nicewonder	 Center for Performing Arts Instructor: Carol Webster	 Center for Mass Communication Instructor: Eric Salo	 Center for Visual Arts and Museum Studies
Projects using Lego Mindstorm Robots, CAD and Inventor programs will give students a chance to explore technology as it is used in the Center for Engineering.	Students will work in acting, dancing, and singing. The camp will culminate in a talent showcase similar to presentations done by students in the Performing Arts Specialty Center.	Students will explore the steps of television production and work together to film, edit, and produce a program similar to projects done by students in the Mass Communication Specialty Center.	Students will work with professional art materials to create sculptures similar to projects done by students in the Visual Arts and Museum Studies Specialty Center.

For rising 6th, 7th, and 8th graders

Camps run 8:00 A.M. - 12:00 P.M. Monday through Thursday

(Robotics second session 12:30 pm to 4:30 pm)

Burton Center for Arts & Technology campus, 1760 Boulevard, Salem, VA 24153

Fee for each program is $75 (check or money order)

Each program is limited to twenty students accepted on a first-come, first-served basis.
Transportation is not provided for the program.
For more information, contact Kim Simmons at (540) 562-3900 x 10259.

---------- Detach Here to return completed registration form – Retain information portion for reference ----------

Summer Camp Registration Form

Name:
Grade for 2011-12 school year:
Home Address:

Select camp(s) to register for:

____ Robotics - Session I	June 13-16	M-TH 8-11:45	Select ONE Robotics Session Only
____ Robotics - Session II	June 13-16	M-TH 12:45-4:30	
____ Triple Threat	June 13-16	M-TH 8-12	
____ Television Production	June 13-16	M-TH 8-12	
____ Sculpture	July 18-21	M-TH 8-12	

Parent/Guardian names	Home #
	Cell #s
Name of emergency contact if parent cannot be reached:	Home #
	Cell #s
Medical conditions, allergies, dietary restrictions, and other conditions or circumstances that program staff should be aware of:	

I, _____ (print parent/guardian name), give permission and accept financial responsibility for my child to participate in this program and to receive medications, health procedures, and medical care as needed in an emergency.

_____

Parent Signature and Date

Mail this registration form with a check or money order for $75 per program payable to Roanoke County Public Schools (No cash or credit cards will be accepted) to:

Kim Simmons
Roanoke County Public Schools
5937 Cove Rd.
Roanoke, VA 24019

Deadline for registration is May 13th, 2011.
Confirmation of enrollment will be sent out by May 20th, 2011.

For rising 6th, 7th, and 8th graders

Camps run 8:00 A.M. - 12:00 P.M. Monday through Thursday

(Robotics second session 12:45 pm to 4:30 pm)

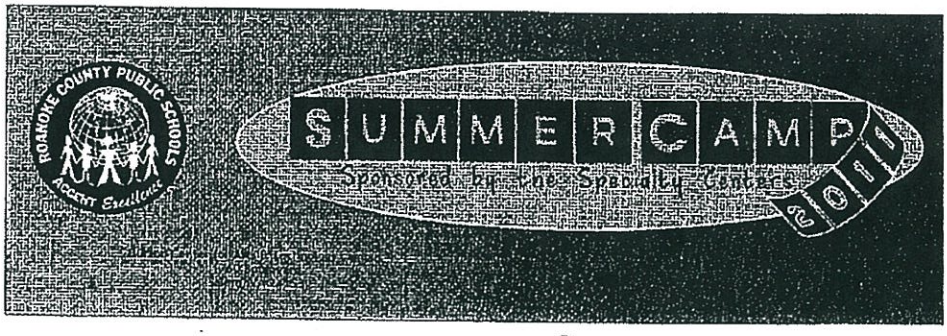
Burton Center for Arts & Technology campus

Fee for each program is $75

Each program is limited to twenty students accepted on a first-come, first-served basis.
Transportation is not provided for the program.

Department of Instruction
5937 Cove Road, NW
Roanoke, Virginia 24019

Non-Profit Org
U.S. POSTAGE
PAID
Permit #78
Roanoke, VA



Appendix K:

Budget

ROANOKE COUNTY PUBLIC SCHOOLS
GOVERNOR'S STEM ACADEMY AT THE BURTON CENTER FOR ART AND TECHNOLOGY

BUDGET

A – Director Costs	TOTAL			
	State Funds	Perkins Funds	Other Funds (Local or grant funds to be described in Budget Narrative)	In-Kind
1. Personnel --- 1000	$0.00	$240.00	$150,945.82	$28,462.90
2. Employment Benefits --- 2000	$0.00	$20.00	$16,020.00	$0.00
3. Purchased/Contractual Services ---- 3000	$0.00	$8,300.00	$20,681.00	$0.00
4. Internal Services ---- 4000	$0.00	$0.00	$0.00	$0.00
5. Staff Development ---- 5000	$0.00	$1,500.00	$0.00	$0.00
6. Summer Component Activities ---- 5000	$0.00	$0.00	$1,000.00	$0.00
7. Travel ---- 5000	$0.00	$500.00	$1,000.00	$0.00
8. Contractual Services ---- 5000	$0.00	$0.00	$0.00	$0.00
9. Materials and Supplies ---- 6000	$0.00	$0.00	$6,000.00	$0.00
10. Equipment ---- 8000	$0.00	$59,000.00	$84,000.00	$120,000.00
11. Facilities ---- 8000	$0.00	$0.00	$0.00	BCAT - Market Value
B – Indirect Costs *	$0.00	$0.00	$0.00	$0.00
TOTAL	$0.00	$69,560.00	$279,646.82	$148,462.90

If recovering indirect costs, the rate must not exceed the federally approved indirect cost rate of the fiscal agent.

Appendix L:

Certificate of Insurance

CERTIFICATE OF INSURANCE

ISSUE DATE 11/28/2011

PRODUCER

Vaco Risk Management Programs
308 Market St., SE
Suite 1 & 2
Roanoke, VA 24011-

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

COMPANY LETTER A Virginia Association of Counties Group Self-Insurance Risk Pool

COMPANY LETTER B

COMPANY LETTER C

COMPANY LETTER D

COMPANY LETTER E

INSURED

Roanoke County Public Schools
5937 Cove Road
Roanoke, VA 24019

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS MADE X OCCUR OWNER'S & CONTRACTOR'S PROT. X 0 RETENTION	VA-RO-077C-12	07/01/2011	07/01/2012	GENERAL	$ 10,000,000
					PRODUCTS-COMP/OP	$ 10,000,000
					PERSONAL & ADV. INJURY	$ 10,000,000
					EACH OCCURRENCE	$ 10,000,000
					FIRE DAMAGE (Any one fire)	$ 500,000
					MED. EXPENSE (Any one person)	$ 5,000
A	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS HIRED AUTOS NON-OWNED AUTOS GARAGE LIABILITY X 0 RETENTION	VA-RO-077C-12	07/01/2011	07/01/2012	COMBINED SINGLE LIMIT	$ 10,000,000
					BODILY INJURY (Per person)	$
					BODILY INJURY (Per accident)	$
					PROPERTY DAMAGE	$
	EXCESS LIABILITY UMBRELLA FORM OTHER THAN UMBRELLA FORM				EACH OCCURRENCE	$
					AGGREGATE	$
A	OTHER					
	Property	VA-RO-077C-12	07/01/2011	07/01/2012	$10,000 Ded/Blanket per schedule on file	
	Auto Physical Damage	VA-RO-077C-12	07/01/2011	07/01/2012	$250 Comprehensive $ 500 Collision	
	Crime	VA-RO-077C-12	07/01/2011	07/01/2012	$1,000,000 Blanket, $250 Deductible	
	School Leaders	VA-RO-077C-12	07/01/2011	07/01/2012	$2,500 Ded $ 1,000,000 Limit	

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

CERTIFICATE HOLDER

Roanoke County Public Schools
5937 Cove Road
Roanoke, VA 24019

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 90 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE Carol Jordan

Virginia Board of Education Agenda Item

Agenda Item: N **Date:** April 26, 2012

Title	First Review of a Proposal from Chesapeake Public Schools to Establish the Grassfield High School Governor's STEM Academy		
Presenter	Karen D. Black, Technology Academy Coordinator, Grassfield High School, Chesapeake City Public Schools Lolita B. Hall, Director, Office of Career and Technical Education Services		
E-mail	Karen.Black@cpschools.com lb.hall@doe.virginia.gov	**Phone**	(757) 558-4493 (804) 225-2051

Purpose of Presentation:
Other initiative or requirement. Specify below:
First review and acceptance of the Proposal to Establish a Governor's STEM Academy at Grassfield High School, Chesapeake City Public Schools

Previous Review or Action:
No previous review or action.

Action Requested:
Action will be requested at a future meeting. Specify anticipated date below:
Date: May 24, 2012
Action: Final review and approval

Alignment with Board of Education Goals: Please indicate (X) all that apply:

X	Goal 1: Expanded Opportunities to Learn
	Goal 2: Accountability of Student Learning
	Goal 3: Nurturing Young Learners
	Goal 4: Strong Literacy and Mathematics Skills
	Goal 5: Highly Qualified and Effective Teachers and Administrators
	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify: Governor's STEM Academy

Background Information and Statutory Authority:
Goal 1: The Governor's STEM Academy is designed to expand opportunities for the general student population to acquire STEM literacy and other critical skills, knowledge, and credentials that will prepare them for high-demand, high-wage and high-skill careers.

Partnerships establishing academies must include at least one public school division, business and industry, and postsecondary education. On November 29, 2007, the Board of Education approved the criteria to establish a Governor's STEM Academy. Subsequently, on March 19, 2008, the Board approved the standards for the Governor's Career and Technical Education Exemplary Standards

Awards Program, which all Career and Technical Academies must implement.

As required by the Board of Education, the State Council of Higher Education for Virginia (SCHEV) has reviewed the attached proposal and recommends that the Board approve the proposal. Staff members of the Virginia Department of Education (DOE) have also reviewed the proposal in the context of the Board's criteria. An executive summary of the proposal is in Attachment A. Attachments B and C are the reports from the reviews by SCHEV and the DOE. Attachment D is the complete proposal.

Currently, there are ten Governor's STEM Academies in Virginia. They are located in Arlington County, Chesterfield County, Halifax County, Hampton City, Loudoun County, Richmond City, Russell County, Stafford County, Suffolk City, and Carroll County.

Summary of Important Issues:
The proposal for the Grassfield High School Governor's STEM Academy is conceptualized with partnerships consisting of Chesapeake City Public Schools; Old Dominion University; Tidewater Community College; James Madison University; City of Chesapeake Economic Development; Lockheed Martin Center for Innovation; NASA Langley Research Center; and D.T. Read Steel Company, Inc.

Through communications, leadership, and state-of-the-art technology, students enrolled in the proposed Academy will receive academic and technical training in three career pathways that will provide them a competitive edge in a variety of post-high school choices. The first pathway, *Engineering and Technology* is in the Science, Technology, Engineering, and Mathematics (STEM) Cluster. Students will participate in in-depth research to provide solutions to various technical problems within different fields, and will actively engage in applying mathematical concepts and scientific principles through engineering-design experiences. Students will be introduced to the career choices in engineering and technology areas such as Aerospace Engineering, Civil Engineering, Environmental Engineering, Chemical Engineering, Biomedical Engineering, Digital Technology and will participate in coursework that will prepare them for postsecondary education.

The second pathway, *Programming and Software Development* is in the Information Technology Cluster. Students enrolled in this pathway require a solid foundation in mathematics and science as well as high-level technical skills. Students will be provided opportunities to design, develop, and produce interactive multimedia products and services. They will explore the use of modeling, simulation, and game development software to solve real-world problems. These activities will include evaluating and testing engineering designs, modeling geospatial data, observing and analyzing physics simulations, programming games for educational purposes, and creating visualization systems with 3D models.

The third pathway, *Marketing Management* is in the Marketing Career Cluster. This pathway prepares students for careers in advertising, public relations, sales and planning. Students will learn about the transfer of goods and services and e-commerce in a global economy for businesses and for individual consumers.

Impact on Fiscal and Human Resources:
Funding must be provided at the local level.

Timetable for Further Review/Action:
The proposed beginning date for Grassfield High School Governor's STEM Academy, Chesapeake City Public Schools, is fall of 2012.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education accept for first review the proposal to establish Grassfield High School Governor's STEM Academy, Chesapeake City Public Schools.

The Governor's STEM Academy
at the
Grassfield High School
Executive Summary
April 06, 2012

Partnership Members:	Chesapeake City Public Schools; Old Dominion University, Tidewater Community College, James Madison University, City of Chesapeake Economic Development, Lockheed Martin Center for Innovation, NASA Langley Research Center, and D. T. Read Steel Company, Inc.
Lead Entity:	Grassfield High School
Fiscal Agent:	Chesapeake City Public Schools
Contact Person:	Mrs. Karen Black Technology Academy Coordinator 757 558-4493 Karen.Black@cpschools.com
Academy Location:	The Grassfield High School Governor's STEM Academy 2007 Grizzly Trail Chesapeake, VA 23323
Number Students:	The Grassfield High School Governor's STEM Academy will have the capacity to enroll 240 students, grades 9–12. During the initial school year (2012–2013) applications will be accepted for 60 students.
Career Pathways:	Engineering and Technology Marketing Management Programming and Software Development
Academy Goals and Description:	The overall goals of the Governor's STEM Academy are to provide students with STEM enriched 21st-century technological skill and knowledge necessary to succeed in postsecondary education and the work force. Specific Governor's STEM Academy objectives include: • Improve academic achievement of Academy students • Increase Standards of Learning (SOL) scores and pass advanced rates for all mathematics and science courses. • Increase completion of dual enrollment courses.

- Increase the number of industry certifications awarded to high school students.
- Increase the number of students completing a college and career ready curriculum in high school.
- Provide work-based learning experiences through strong partnerships with business and industry.
- Increase high school graduation rates.
- Reduce dropout rates.
- Increase enrollment and retention in postsecondary education.
- Reduce the number of students requiring remediation in college.
- Increase the number of graduates employed in high-wage, high-skilled careers.

Highlights of the Program: As a result of participating in the Governor's STEM Academy in the clusters of Science, Technology, Engineering & Mathematics; Information Technology; and Marketing students will:

- Gain a deeper understanding of the skills and knowledge incorporated in their fields of study;
- Benefit from specialized, project-based courses which develop critical-thinking, problem-solving, and decision-making skills, preparing them for the 21st-century world;
- Acquire greater communication skills;
- Develop workplace readiness skills;
- Receive opportunities to earn industry certifications preparing them to be more competitive in the work force and when applying to advanced training schools or postsecondary institutions;
- Obtain meaningful, real-life, hands-on experiences in their career pathway; and
- Profit from opportunities for internships, mentorships, job shadowing, and cooperative education, which provide students with advantages when entering postsecondary education and/or the workplace.

Attachment B

The State Council of Higher Education for Virginia

Review of Governor's STEM Academy Proposal

Name of Lead Entity on Proposal: Grassfield High School

Date of Review: April 5, 2012

The State Council of Higher Education for Virginia recommends approval of the Grassfield High School Governor's STEM Academy.

Peter Blake
Director
State Council for Higher Education

4/5/12
Date

Virginia Department of Education
Governor's STEM Academy
Proposal Review Checklist

Title of Proposal: The Grassfield High School Governor's STEM Academy

Lead Entity for Proposal: Grassfield High School, Chesapeake Public Schools

Date of Review: April 5, 2012

Virginia Department of Education
Governor's STEM Academy
Proposal Review Checklist

I. Partnership Capacity

Partnerships desiring to implement a Governor's STEM Academy shall provide the Department of Education with evidence of the following:

Criteria	Documentation			Comments
	Full	Partial	None	
A. An active, ongoing planning committee, including a list of members and signed certifications from each that they are willing and able to serve in that capacity. At a minimum, members must represent K-12 education (superintendent or designee), higher education, and business and industry. All partners must be represented on the committee.	X	.		.
B. An advisory committee, including a list of members and signed certifications from each that they are willing and able to serve in that capacity.	X			
C. A written memorandum of agreement among school divisions, local businesses, postsecondary institutions, and any other partners that outlines ways in which community resources will contribute to the Governor's STEM Academy to broaden the scope of students' educational experiences.	X			
D. A statement of assurances that the Governor's STEM Academy Planning Committee has reviewed provisions of *Administrative Procedures Guide for the Establishment of Governor's STEM Academies* and agrees to follow the guidelines set forth in the document (see appendix).	X			

Criteria	Documentation			Comments
	Full	Partial	None	
E. A statement of assurances that, if applicable, an ongoing Governing Board will be established to reflect current Board of Education regulations relative to jointly operated schools and programs (see appendix).				NA
Comments:				

II. Need/Rationale for the Academy

Partnerships desiring to implement a Governor's STEM Academy shall provide the Department of Education with evidence of the following:

Criteria	Documentation			Comments
	Full	Partial	None	
A. Demonstration of the need/rationale for the Academy. This statement should be concise and state the major reasons to have a Governor's STEM Academy, including need at the state, local and/or regional levels.	X			
B. A description of the enhanced or additional offerings in science, technology, engineering, and/or mathematics (STEM) that will meet the need described above.	X			
C. A fiscal agent that is a public entity, including a certification that the entity is willing and able to serve in that capacity.	X			
Comments:				

III. Program Description

Each Governor's STEM Academy planning committee shall develop cooperatively with local school divisions, business, community, and higher education partners and have available for review and dissemination, a program description that includes:

A. A statement of program goals addressing the following criteria:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Rigorous academic content in career and technical instruction;	X			
2. An emphasis on STEM career pathways;	X			
3. Individualized high school plans to ensure course selections that are aligned with students' transition and career goals after high school;	X			
4. Evidence that graduates will complete a college and work readiness curriculum, minimally at the level specified for Commonwealth Scholars Course of Study (State Scholars Core) with the possibility of pre-approved substitution of equivalent courses where there may be more relevant course selections for a particular career pathway;	X			
5. Evidence that graduates will qualify for the Technical and/or the Advanced Technical Diplomas; and	X			
6. Incorporation of Virginia's Workplace Readiness Skills.	X			
Comments:				

B. A statement of program objectives and performance measures to:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Improve academic achievement of Academy students;	X			
2. Increase completion of dual enrollment courses;	X			
3. Provide workplace readiness experiences for students through strong partnerships with businesses;	X			
4. Increase high school graduation rates;	X			
5. Reduce dropout rates;	X			.
6. Increase enrollment and retention in postsecondary education;	X			
7. Increase the proportion of students completing a college and workplace ready curriculum in high school;	X			
8. Reduce the proportion of students requiring remediation in college;	X			
9. Increase the number of industry certifications awarded to high school students; and	X			
10. Increase the number of graduates employed in high-wage, high-demand and high-skill careers.	X			
Comments:				

C. A brief description of the proposed program, including:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Site location;	X			
2. Number of students to be served;	X			
3. Grade levels;	X			
4. General curriculum design;	X			
5. List of courses to be delivered;	X			
6. Description of how/where the courses will be delivered. Courses may be delivered on a high school, technical center or community college campus, online, or in other innovative ways.	X			
7. Designation of full-day or part-day, academic-year program.	X			
Comments:				

D. Evidence of participation in the Governor's Exemplary Standards Award Program for STEM Education

	Documentation			Comments
	Full	Partial	None	
	X			.
Comments:				

E. Program and course descriptions

E.1. At least two well-articulated career pathways must be included that meet the following criteria:

Criteria	Documentation			Comments
	Full	Partial	None	
Pathway #1				
a. Must include opportunities to earn industry credentials, postsecondary certificates, diplomas or associate degrees while in high school and pursue additional industry credentials and academic degrees at the associate, bachelor's and graduate levels. These pathways may be in the same or different career clusters.		X		Opportunities for students to earn credentials are numerous. There is a need to increase the postsecondary opportunities. The Academy plans to increase additional postsecondary opportunities in the future.
b. Must be in a field identified by a statewide authority or organization, such as the Virginia Economic Development Partnership or the Virginia Research and Technology Advisory Commission, as a strategic growth area for Virginia. Examples include biosciences, information technology, automotive technology and motor sports, as well as modeling and simulation and nanotechnology **or**	X			

Criteria	Documentation			Comments
	Full	Partial	None	
c. Must address regional and local work force demand in a high-wage, high-skill field as identified by employers and work force officials.	X			
d. At least one pathway must be in a STEM-related field. This career pathway should drive the innovative capacity of the region and/or state.	X			
Comments:				

Criteria	Documentation			Comments
	Full	Partial	None	
Pathway #2				
a. Each career pathway must include opportunities to earn industry credentials, postsecondary certificates, diplomas or associate degrees while in high school and pursue additional industry credentials and academic degrees at the associate, bachelor's and graduate levels. These pathways may be in the same or different career clusters.	X			
b. Must be in a field identified by a statewide authority or organization, such as the Virginia Economic Development Partnership or the Virginia Research and Technology Advisory Commission, as a strategic growth area for Virginia. Examples include biosciences, information technology, automotive technology and motor sports, as well as modeling and simulation and nanotechnology, or	X			

Criteria	Documentation			Comments
	Full	Partial	None	
c. Must address regional and local work force demand in a high-wage, high-skill field as identified by employers and work force officials.	X			
d. Of the two pathways described, at least one must be in a STEM-related field. This career pathway should drive the innovative capacity of the region and/or the state.	X			
e. Additional career pathways may address one of the areas described above, or an area identified by the partnership as an area of interest, growth, or expansion for students in the service area of the Academy.	X			
Comments:				

E.2 List of all requirements for successful program completion.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

E.3 Academy graduates must achieve one or more of the following benchmarks:

Criteria	Documentation			Comments
	Full	Partial	None	
a. Earn one or more industry certifications or state occupational licenses, and/or demonstrate competencies on an assessment instrument recognized by postsecondary institutions such as CLEP examinations, collaboratively designed or mutually approved end-of-course tests, college placement tests, or student portfolios reviewed by a team of college and high school faculty; **or**	X			
b. Earn at least 9 transferable college credits as defined in the Early College Scholars program (includes dual enrollment, AP and other options); **or**	X			
c. Earn an Associate Degree.	X			
Comments:				

E.4 Significant work-based experience must be included representing additional instruction or training beyond the classroom such as:

Criteria	Documentation			Comments
	Full	Partial	None	
a. Cooperative Education; or	X			
b. Internships; or	X			
c. Job Shadowing; or	X			
d. Mentorships; or	X			
e. Project-based learning; or	X			
f. Service learning; or				
g. A combination of the above.				
Comments:				

F. Length of program and daily schedule: Governor's STEM Academies are defined by program content, not by the location or delivery system of courses. Evidence of the following must be submitted:

Criteria	Documentation			Comments
	Full	Partial	None	
Designation of full-day or part-day, academic-year program.	X			
Comments:				

G. Assurance from the fiscal agent that operating funds and facilities are available to support the Governor's STEM Academy and are adequate to meet the needs of the program

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

H. Materials and equipment to be provided to accomplish program goals and objectives.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

I. Evidence of an internal evaluation process to effect program improvement, including:

Criteria	Documentation			Comments
	Full	Partial	None	
1. A review of the Academy's policies, procedures, and outcomes;	X			
2. A review of the program design and instructional delivery;	X			
3. Consideration of feedback from students, staff, parents, the community, and partnership members; and	X			
4. Annual collection and reporting of data to the Department of Education related to student achievement, goal achievement, and other indicators.	X			
Comments:				

IV. Administrative Procedures

Each Governor's STEM Academy must develop and maintain procedures developed cooperatively with participating partners. There should be evidence of procedures in the four areas that follow.

A. Partnerships - The role of business and industry, public school divisions, and postsecondary institutions in the partnership. The role of workforce and economic development entities should also be included if they are among the partners.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

B. Student recruitment, selection criteria, and admissions.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

C. Code of student conduct and attendance.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

D. Transportation provided by the school division or consortium that is in compliance with all applicable federal and state regulations.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

E. Staff recruitment, selection, and assignment - The Governor's STEM Academy shall hire staff members who meet the Virginia teacher licensure requirements and/or postsecondary faculty qualifications. Where applicable, they must have industry-specific education with training and experience, including industry certification.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

F. Staff development - The program will provide appropriate staff training in addition to staff planning time.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

G. Staff evaluation – Staff will be evaluated according to the human resources policies of the agency or institution employing Academy personnel.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

H. Parent, student and community involvement

Criteria	Documentation			Comments
	Full	Partial	None	
1. Preparation for entering the Academies should begin by eighth grade.	X			
2. Students, parents, teachers, and counselors should work collaboratively to: a. Complete career interest inventories;	X			
b. Prepare academic and career plans outlining an intended course of study in high school;	X			
c. Review multiple postsecondary pathways and the steps required to pursue them;	X			
d. Participate in career assessments to identify areas students should strengthen to qualify for their selected pathways; and	X			
e. Discuss available diplomas, seals, and other recognitions including admission to specialized programs such as Governor's Academies.	X			

Documentation of insurance, budget, and other fiscal information

	Documentation			Comments
	Full	**Partial**	**None**	
Insurance	X			
Budget (from appendix)	X			
Budget Narrative	X			
Other				
Comments:				

GOVERNOR'S STEM ACADEMY PROPOSAL

Chesapeake City Public Schools

Grassfield High School

Proposal to Establish the

Grassfield High School

Governor's STEM Academy

Submitted to the

Virginia Board of Education

April 26, 2012

The Grassfield High School Governor's STEM Academy
Board of Education Proposal

Table of Contents

Introduction	1
Rational	2
Projects and Initiatives	6
Program Description	11
Objectives and Goals	17
Performance Measures	18
Program Details	24
Partnership Capacity	26

Appendices

A:	Program of Study	30
B:	Course Descriptions	32
C:	Industry Credentials	40
D:	STEM Academy Application	42
E:	Bell Schedule	57
F:	Job Description	59
G:	Pathway Plans of Study	61
H:	Planning Committee	71
I:	Partnership/Advisory Committee	81
J:	Memoranda of Agreement	96
K:	Statement of Assurances	108
L:	Budget	111
M:	Certificate of Coverage	113
N:	Staff Evaluation Form	115

Introduction

Chesapeake City Public Schools serve a diverse student population with a wide variety of needs. It is the school division's mission to provide constituents with a range of options that meets each student's individual abilities and interests, while providing the skills necessary for postsecondary education and future employment. Columbia University's Institute for Learning Technologies asserts, "An educated citizen in the 21st century must be literate in technology to acquire knowledge and wisdom, gain employment, and maximize opportunities. An education for the 21st century must provide people with mastery of the intellectual and technical skills necessary to participate to their full potential." The Governor's Science, Technology, Engineering, and Mathematics (STEM) Academy will be a citywide program housed at Grassfield High School, offering a unique opportunity for students with an interest in STEM to become highly literate in the field, acquire the specialized skills needed for attaining higher education, and enter the work force of emerging STEM careers. The comprehensive college-preparatory curriculum will provide opportunities for students to earn industry certifications, college credit through dual enrollment courses at Tidewater Community College, Advanced Placement courses, and on-the-job training through participation in employer partnerships.

Grassfield High School (GFHS) is the newest public high school in the Chesapeake City Public School Division and affords the latest technology while housing the current Technology Academy. The Governor's STEM Academy will operate as a school within a school in which students will reap the benefits of participating in a small learning community. Each year students from across the City of Chesapeake will apply to be considered for acceptance into this elite magnet program, and those that are accepted will be transported to Grassfield High School. Traditional Grassfield High School students will also benefit from the Governor's STEM Academy

through exposure to instruction by highly trained, industry-certified academy teachers, and cooperative learning experiences with Academy students in their classes.

Rationale for the Governor's STEM Academy

The Grassfield High School Governor's STEM Academy will focus on three specific career cluster areas – Science, Technology, Engineering, and Mathematics, Information Technology, and Marketing. These specialized programs will increase options for Chesapeake City Public Schools' students to acquire the knowledge and skills that will prepare them for the 21st century job market. Virginia has been recognized by *Forbes* magazine the past four years as the top state for businesses and careers. One of the factors in this ranking is that Virginia has an educated labor supply. K-12 educators have a responsibility to prepare our students for the future job market which includes preparation for high-demand jobs in the STEM field.

Science, Technology, Engineering, and Mathematics

The STEM career cluster, with the engineering and technology pathway, meets local and state needs by preparing students with the advanced technological skills to fill these high-demand occupations. Grassfield High School Technology Academy has been recognized as a nationally certified Project Lead the Way (PLTW) STEM program. Project Lead the Way prepares students to be the most innovative and productive leaders in STEM and to make meaningful, pioneering contributions to our world. PLTW provides a rigorous, relevant STEM education. Through engaging in hands-on curriculum, PLTW encourages the development of problem-solving, and critical-thinking skills, creative and innovative reasoning, and a love for learning.

According to the Virginia Employment Commission, as of February 22, 2012, there is a need for more than 5,200 engineers statewide. The number of potential candidates available to fill these

positions is 858 statewide. This indicates a significant shortage of viable employees to fill this need. With a large marine port, military presence, and shipbuilding industry, the Hampton Roads area has an immediate demand for engineers. The Governor's STEM Academy will work toward preparing our students to be successful in the field of engineering. Through rigorous PLTW courses, as well as the state-approved industry certifications, these students graduate high school with college credits and the skills to succeed in the university setting and work force.

PLTW offers a strong, grassroots support system for STEM education and a powerful national college and university presence to create the best opportunities for students and teachers across the country. PLTW courses are infiltrated with a strong backbone of scientific and mathematical concepts related to the field of engineering, thus preparing students for their college courses. PLTW's college and university partners have an important role in our network by providing an impressive and important range of support and services, such as admission preference and scholarships for students or professional development for teachers.

Old Dominion University (ODU), a Grassfield High School Technology Academy partner, works as the local Project Lead the Way affiliated university. Through this partnership, ODU allows Technology Academy students the opportunity to earn college credit for the successful completion of PLTW courses. Academy students can also apply for up to 16 college credits with Rochester Institute of Technology (RIT), another affiliate with Project Lead the Way, by earning an 85 percent or higher in the PLTW course and passing the end-of-course PLTW exam with a 70 percent or higher.

Information Technology

The Information Technology career cluster, with the programming and software development pathway, meets local and state needs by preparing students with technology skills to fill high proficiency occupational areas. According to the Virginia Employment Commission, the computer system design industry is expected to grow by 43.3 percent between now and 2018 in the state.

Students pursuing the programming and software development pathway will have the opportunity to take a dual enrollment course in computer science at Tidewater Community College. Tidewater Community College (TCC) is located less than three miles from Grassfield High School. This computer science course will be offered to students who have taken the prerequisite STEM Academy courses during the spring semester of their senior year. Presently, Grassfield High School is working in collaboration with TCC to adequately prepare Academy students for "test out" options at the college level.

Students will also have the opportunity to take Virginia Department of Education-approved industry certification exams in the specific pathway for programming and software as part of the Governor's STEM Academy. Chesapeake City Public Schools have a full-time career and technical education staff member that is certified to proctor these exams. Students will take these exams at Grassfield High School while enrolled in the STEM courses. This opportunity will increase the number of industry certifications earned by students. The logistical plan for industry testing will provide a secure testing environment where students do not have to miss time from any of their other scheduled courses.

Marketing

The Marketing career cluster, with a marketing management pathway, meets local and state needs by preparing students with innovative ideas to fill key positions in the Commonwealth of Virginia. According to the Virginia Employment Commission, the management industry is expected to grow over 10 percent between now and 2018. By partnering with local businesses and organizations, students will have the opportunity to participate in management job shadowing experiences. Marketing students will also have the opportunity to explore international issues related to STEM through the Global Marketing courses offered at Grassfield High School and the dual enrollment course at Tidewater Community College. Students will also have multiple opportunities to pass industry certification exams as a part of the Governor's STEM Academy.

The co-curricular organization Distributive Education Clubs of America (DECA) is very involved at the local, district, state and international level. Each year we have a large number of students participating in leadership roles and many levels of competition. The students enjoy attending conferences and participating in co-curricular competitions. With the Governor's STEM Academy, we will increase the number of marketing students that participate in state-level competitions and serve as officers at the local and state level. Currently, we have a student running for an international office with the DECA Inc. organization.

According to the Virginia Employment Commission, the profile for the City of Chesapeake has these three career clusters identified as growth areas. In the three areas addressed by the Governor's STEM Academy locally, the projected number of jobs in these areas is over 54,000. The projected long-term growth in each area is above 10 percent with computer and mathematics

occupations projected to increase by 30.97 percent. The need for this specialized program is critical to the continued growth of the Commonwealth of Virginia and the City of Chesapeake.

Projects & Initiatives

Wind Turbine

The Grassfield High School Technology Academy has completed an application to participate in the Virginia Wind for Schools program. This is a Department of Energy funded program managed by James Madison University with a focus on science, technology, engineering, and mathematics. The main goal of the Wind for Schools program is to educate students and the community about wind energy while building a future work force for the wind industry.

This program involves the installation of a small wind turbine on the school grounds of Grassfield High School Technology Academy for the purpose of collecting wind turbine data. The data identifying the electricity generated by the turbine will be available to all schools in Chesapeake for their use. James Madison University will provide specific activities correlated with the Virginia Standards of Learning for use by all grade levels (K-12).

If the application is approved, a 6'W x 6'L x 1 1/2'D concrete platform would be installed to hold the 55' wind turbine pole. A Skystream 3.7 turbine would then be affixed to the top of the pole. The application for this program has been completed through a team effort involving several entities: Grassfield High School Technology Academy, Chesapeake City Public Schools Career and Technical Education Department, Chesapeake City Public Schools Plants, and several departments with the City of Chesapeake.

Installing a functioning wind turbine through the Wind for Schools program at Grassfield High School will allow the Governor's STEM Academy to dynamically integrate current STEM activities into our core and workplace-related curricula using live data that will help students make connections between their academic work and real-world skills. It will also allow us to symbolically communicate our dedication to sustainable management and stewardship of the resources granted to us by the City of Chesapeake and the Commonwealth of Virginia.

Summer Programs

Students from across the City of Chesapeake who accept admission into the Governor's STEM Academy will be invited to attend Academy Fusion the summer prior to their freshman year. The focus of Academy Fusion will be to help students transition from middle school to high school by incorporating team-building activities as well as hands-on STEM activities specific to each pathway. Students will have the opportunity to tour the state-of-the-art facility and see some of the specialized equipment available to STEM Academy students in action. The equipment that will be demonstrated will be the 3D modeling printer, the laser engraver, the wind tunnel, the wind turbine data collection center, the Airliner, and the SMART Board. Note: The Airliner is a wireless slate that allows students to seamlessly interact with the SMART Board to solve problems or demonstrate their knowledge on a specific subject from any location in a classroom.

The summer prior to STEM Academy students' senior year, they will participate in a required internship, mentorship, or job shadowing experience. Students will work with the mentorship coordinator beginning the first week of their junior year. They will meet with the coordinator and discuss the expectations for their summer experience. Throughout their junior year, they will participate in seminars to include résumé preparation, mock interviews, and a dress

for success fashion show; all focusing on the foundation of the Virginia Department of Education workplace readiness skills. Students will prepare a résumé to send to local companies in the Hampton Roads area. Currently, the Technology Academy has helped place students with over 25 companies including: NASA, Bank of America, Canon, Lockheed-Martin, MITRE, Stihl, and the United States Coast Guard. The feedback from students and the business community has been very positive, and we anticipate being able to add to the list of participating companies with the recognition of being a Governor's STEM Academy.

MODSIM

Students in the Governor's STEM Academy will attend the MODSIM World Conference and EXPO in Virginia Beach. This conference will expose students to STEM careers, networking, and guest speakers in each of the career clusters in the Grassfield High School Governor's STEM Academy. In 2010, two of Grassfield High School's Technology Academy instructors presented information on *Overcoming the Critical Shortage of STEM-prepared Secondary Students Through Modeling and Simulation*. The article was published, and the instructors continue to incorporate STEM activities into their daily lessons.

Also, dialogue has occurred with the Old Dominion University's Modeling and Simulation department to create a strong partnership between Grassfield High School and the one-of-a-kind degree program that Old Dominion University is working to implement. We expect to have additional guest speakers come to Grassfield High School, as well as take students on field trips to Old Dominion University.

Guest Speakers

The Governor's STEM Academy students will benefit from guest speakers in STEM-related fields throughout their four year experience. Bank of America representatives will speak about careers in the corporate world pertaining to STEM and how technology is a key component of banking. NASA engineers will address the continuum of projects related to STEM and each of the specific career clusters offered through the Academy. Students will learn about the many programs that NASA has available for students and how they can get involved.

In the summer of 2011, NASA had ten high school students work in a paid internship position at NASA Langley. Three of the ten students selected from across the state of Virginia were from Grassfield High School's Technology Academy. Two of the students have been offered additional hours beyond the summer internship and continue to work with NASA.

VEX Robotics

The Governor's STEM Academy students will be exposed to the VEX Robotics Design System in their engineering classes and will participate in co-curricular activities to compete with the VEX system. We are looking to expand the VEX program as a way to enhance the interest in STEM education and the three career clusters in the Governor's STEM Academy.

VEX Education is dedicated to providing engaging and fun student experiences that enable individuals to reach their full potential while they develop the knowledge and skills vital to success in the 21st century. Given today's global challenges, there has never been an age with a greater need for new scientists, engineers, and problem-solving leaders. Recent breakthroughs in chemistry, medicine, and physics have revealed a new set of challenges and created even greater

opportunity for problem-solving through technology. This underscores a dramatic challenge: there are not enough students choosing related paths to meet that global demand.

VEX Education exists to help schools focus on practical, affordable, and accessible ways of delivering dynamic hands-on STEM educational experiences to as many students as possible. Mixing the excitement and motivation associated with competition and real-world applications of mathematics and science concepts through the use of the engineering design process, VEX focuses on addressing current educational and societal needs on many levels.

The study of robotics, by its very nature, captures all four pillars of STEM; while a competitive environment increases motivation and desire to succeed, thus creating classroom environments where both knowledge and skill development can flourish without having to compromise one for the other.

Career Planning

Career planning for Governor's STEM Academy students will be ongoing. Grassfield High School has a full-time Career Counselor available to all students. The Career Counselor will team with the Academy Coordinator to teach lessons to students in each grade level to prepare them with the 21 workplace readiness skills and postsecondary planning information.

The career planning curriculum will utilize the *R U Ready* magazine, Virginia Wizard, and the College Board Web site. We will also use student leaders in the Governor's STEM Academy to serve as ambassadors and mentors to underclassmen. The Career Center is located directly beside Grassfield High School's Food Court so students can easily access the resources available during their lunch period. The Career Center has computers for students to research and explore STEM careers, collegiate majors, and receive career counseling services.

At the end of each school year, students will participate in a reflections meeting with the Career Counselor, the Mentorship Coordinator, Academy teachers, and the Academy Coordinator. Students will complete a survey and have the opportunity to give feedback about the program, as well as enjoy a luncheon as a large group.

Program Description

1. The Governor's STEM Academy will meet the needs of students by combining academic study with technical training in three career clusters: science, technology, engineering, and mathematics; information technology; and marketing. The STEM Academy curriculum will extend beyond the technology offerings in the regular comprehensive high school. The citywide program will offer state-of-the-art equipment and software which will enrich and enhance student learning. See Appendix A for the program of study and course sequence. See Appendix B for course descriptions in each career cluster.
2. As a school within a school, the Governor's STEM Academy will provide students with the benefits of participating in a small learning community. Students will benefit from an environment where highly qualified teachers are well acquainted with the Academy students' strengths, weaknesses, and learning styles. The Academy staff will meet regularly for teacher collaboration, reinforcement of technology curriculum and competencies, and maximization of individual student achievement.

   Training will be provided to Academy instructors to ensure industry certifications are current, and all instructors teaching in the STEM career cluster are Project Lead the Way certified. Previous instructor training has been provided by Duke University, Old Dominion University,

and the University of Maryland. The Academy Coordinator and the Career Counselor have also attended the required Project Lead the Way training for counselors.

All Academy instructors are required to use an online platform with the Academy curriculum. Currently, the Academy instructors utilize a hybrid method of online instruction and classroom instruction by using platform as well as edmodo. The online learning platforms create a positive setting for class discussions and ease of access to classwork and file submission.

The Academy Coordinator will facilitate academic counseling, group meetings, activities for students and parents, and opportunities for parental input and involvement. One important goal will be to foster a strong *esprit de corps* for all stakeholders connected to the program in order to better meet the needs of the students. This will be achieved by an annual Governor's STEM Academy Open House for students and parents, regular partnership team meetings, periodic meetings with Academy students, annual survey data collection, career lessons, a Governor's STEM Academy Web site, and ongoing communication with all stakeholders via e-mail and phone.

3. The targeted population for the Governor's STEM Academy will be students from across Chesapeake who envision themselves pursuing a STEM-oriented career and/or who have an interest or talent in STEM. The Academy will attract a variety of students with diverse postsecondary goals. Academy students will be encouraged to take honors, Advanced Placement, and dual enrollment courses.

   Governor's STEM Academy curriculum will provide the prerequisite knowledge and skills necessary to prepare students to earn a variety of industry certifications, making it possible

for students to compete for entry-level jobs in the work force after graduation. Academy students may also earn credits that can be applied in advanced technology training or university studies. See Appendix C for a listing of industry credentials.

4. The Governor's STEM Academy's three career pathways: engineering and technology, marketing management, and programming and software development will offer choices to students. Students will be required to take at least one Governor's STEM Academy course per year in order to remain in the program. Each student will be encouraged to pursue the appropriate mathematics and science courses to enhance their Academy experience and prepare them for postsecondary success. Students will take courses of interest from one career pathway or from more than one career pathway according to their individual talents, needs, and interests. Furthermore, Governor's STEM Academy students will be required to work toward earning one of the certificates outlined in Tables 1 and 2 below.

Table 1

Certificate Type	Requirements
Gold	The student must ▪ Pass at least six Governor's STEM Academy courses. ▪ Complete a minimum of two state completer sequences. ▪ Earn at least two BOE-approved industry certifications. ▪ Complete an exit portfolio displaying exemplary work samples from each STEM Academy course taken. ▪ Participate in at least 15-20 hours of approved job-shadowing, internship, and/or mentorship activities. ▪ Maintain a minimum 3.0 weighted GPA overall.

Table 2

Certificate Type	Requirements
Silver	The student must ▪ Pass at least four Governor's STEM Academy courses. ▪ Complete a minimum of one state completer sequence. ▪ Earn at least one BOE-approved industry certification. ▪ Complete an exit portfolio displaying exemplary work samples from each STEM Academy course taken. ▪ Participate in at least 15-20 hours of approved job-shadowing, internship, and/or mentorship activities. ▪ Maintain a minimum 2.0 weighted GPA overall.

5. Chesapeake students interested in applying for the Governor's STEM Academy will apply while in the eighth grade. The Academy Coordinator will conduct assemblies at each of the ten middle schools in the Chesapeake City Public Schools' division. In addition to the middle school assemblies, recruiting will take place at middle school career night and the gifted education fair sponsored by Chesapeake City Public Schools. The Academy Coordinator will host an information night in the evening for parents and students and will

host information sessions with middle school principals, guidance directors, and teachers. Applications will be due January 15 to the middle school guidance department. Multiple criteria will be used to screen applicants, including:

- Positive teacher recommendations
- Parent recommendations
- Evidence of interest in STEM as demonstrated through a short essay and a portfolio of work

The required portfolio of work shall consist of three student-choice projects from a list of options using technology such as Microsoft Word, Publisher, PowerPoint, etc. The options will include items such as a multimedia presentation, newsletter, Web page, pamphlet, brochure, résumé, floor plan, database, and project proposal. The wide variety of options is designed to permit applicants to use formats and technology with which they are familiar. Chesapeake City Public Schools offer standard career and technology elective courses at all middle schools; therefore, the electronic portfolio reflects the level of skills that students are exposed to citywide.

The Academy instructor will collect the applications and a selection committee will review all completed applications, rank the applications using a rubric, and select the top candidates for admission into the program. Those not accepted will be placed on the Governor's STEM Academy waiting list to be considered for any vacancies that may occur during ninth or tenth grades. The Academy Coordinator will notify all applicants of their acceptance status by the end of March. Sixty (60) students will be accepted for the ninth-grade class, beginning with the 2012-2013 school year. Each year thereafter, 60 students will be selected to enter at

the ninth-grade level. The program will attain a full complement of 240 students by 2015-2016. See Appendix D for the Governor's STEM Academy Application.

6. The Transportation Department will organize bus routes for transporting Governor's STEM Academy students who reside outside the Grassfield High School zone. Late-day activity buses will also be made available for out-of-zone students who wish to participate in after school sports, activities, and tutoring.
7. An important feature of the Governor's STEM Academy will be the opportunity for students to extend their knowledge of the use of technology in the workplace by participating in job shadowing, internships, and mentorships in the local business community outside of the regular school day. A Governor's STEM Academy staff member will be identified as the Mentorship Coordinator whose responsibility will be to (1) establish community contacts, (2) disseminate information on job-shadowing, internship, and mentorship opportunities to STEM Academy students, and (3) maintain records and documentation of student participation in business community activities. The Mentorship Coordinator will be assigned one instructional block to perform the above duties.

Objectives and Goals

The goal of the Governor's STEM Academy will be to provide students with the technological skills and knowledge to succeed in either postsecondary education and/or the STEM career field.

Objectives:

1. Students will successfully complete a sequential program of study that focuses on critical technological skills and STEM knowledge.
2. Students will attain industry certification and/or postsecondary credit in STEM fields of study.
3. Students will meet or exceed objectives on Virginia Standards of Learning tests.
4. Students will participate in a program in which collaborative agreements with institutions of higher education result in ongoing program development and assessment. This will allow students to be eligible for the Governor's Early College Scholars Program.
5. Student learning will be extended, enriched, and refined through internship, mentorship, and job-shadowing opportunities that create partnerships with community, business, and industry resources.

Performance Measures

The Governor's STEM Academy will address the program objectives outlined in the Virginia Board of Education's Criteria for Governor's STEM Academies. Baseline data were collected during the 2010-2011 school year. Annually, data will be evaluated and performance measures adjusted, as necessary. The Governor's STEM Academy performance measures are outlined below:

1. Improve academic achievement of Academy students:

   - Increase by 20 percent the number of students taking advanced mathematics options beyond Algebra II upon graduation.
   - Increase by 20 percent the number of students taking four years of science upon graduation.
   - Increase by 20 percent the number of Academy students meeting the requirements of the Advanced Studies and/or proposed Advanced Technical Diplomas.
   - Increase Standards of Learning scores and pass/advanced rates for all mathematics and science courses taken by Academy students by 5 percent by 2013–2014. We will use baseline data from 2010–2011.

Course name	% of pass/ advanced	% passed	% eligible for expedited retakes	% of failures	% of students earning a perfect score
Algebra I	62.73%	36.80%	.47%	0%	8.01%
Algebra II	59.68%	40.32%	0%	0%	8.52%
Geometry	54.50%	44.95%	.55%	0%	6.17%
Earth Science	71.03%	28.97%	0%	0%	14.75%
Biology	63.70%	36.30%	0%	0%	5.18%
Chemistry	54.28%	45.72%	0%	0%	0%

Beginning in the 2012–2013 school year, we will use the increased rigor, and we will work to:

- Increase our Algebra II scores by 5 percent to show Advanced College Path readiness.
- Increase SAT mathematics scores for Academy students by an average of 20 points. Baseline data were collected from 2010–2011 SAT scores. Academy students, on average, scored 590 on the mathematics SAT, while the state average in mathematics is 509 and the national average is 514.

2. Increase completion of dual enrollment courses:

In the 2010–2011 school year, 4.9 percent of traditional Grassfield High School students took dual enrollment courses. By the 2013–2014 school year, we look to increase that number by 5 percent and plan to increase the opportunities of dual enrollment courses to both our traditional and Academy students.

3. Provide workplace readiness experiences through strong partnerships with business:

Workplace experiences will include: supervised internships, job shadowing, mentorships, simulations, project-based learning, and guest speakers.

4. Increase high school graduation rates:

Increase the high school graduation rate by 0.5 percent per year from 94.1 percent (2010-2011) to 94.9 percent (2012-2013). Beginning with the 2012-2013 school year, baseline data for the four-year cohort graduation rate will be calculated and goals for improvement will be established.

5. Reduce dropout rates:

Reduce dropout rates by 0.25 percent per year from 0.66 percent (2010-2011) to 0.16 percent (2012-2013) for Academy students and the general secondary student population through acceleration options with industry. Beginning with the 2012-2013 school year, baseline data for the four-year cohort dropout rate will be calculated and goals for improvement will be established.

6. Increase enrollment and retention in postsecondary education:

- Academy students in the STEM Career Cluster will have an opportunity to earn at least nine transferable college credits via Project Lead the Way as defined in the Commonwealth's Early College Scholars Initiative giving Academy students a community college transcript prior to graduating from high school.
- Academy completers will be surveyed to determine successful enrollment and retention in postsecondary institutions annually, beginning with Academy

graduates from the 2012–2013 school year.

- Increase Academy completer transition to postsecondary institutions by 10 percent beginning in 2013-2014.

7. Increase the proportion of students completing a college and workplace ready curriculum in high school:

Baseline data will be established in the 2012-2013 school year with criteria including: diploma type, dual enrollment credit earned, program completer status, and industry credentials earned.

8. Reduce the portion of students that require remediation in college:

- Academy students will successfully pass the college level English and mathematics placement tests (COMPASS) as a criterion for continued enrollment in Academy programs and will; therefore, reduce the need for college remediation for Academy students by 100 percent.
- Preparatory and remediation sessions will be provided, if needed, for students that do not initially pass the college placement tests based on individual student performance on these assessments.
- The Academy student support structure will help ease postsecondary enrollment transition and improve retention strategies by working with students individually on a case-by-case basis.

9. Increase the number of industry certifications awarded to high school students:

- By 2013–2014, increase by 20 percent the number of Academy students earning industry credentials or licensures to provide well-trained workers to benefit the local area work force and to meet employment needs across the Commonwealth.
- Baseline data will be established in the 2012-2013 school year with the criterion to include industry licensure and credentials earned.

10. Increase the number of graduates employed in high-wage, high-demand, and high-skill careers.

Seventy percent of Academy graduates will obtain employment within identified career pathways and related occupations following postsecondary education as evidenced by a follow-up survey that will be sent to our first graduating class, four years after their graduation date, December 2016.

Industry Credential Area	Tested	Passed
American Association Family/Consumer Science (Education Fundamentals Assessment)	22	21
Adobe Photoshop (CS3 and CS4 versions)	70	30
Internet and Computing Core Certification Global Standard (Computing Fundamentals, Key Applications, and Living Online)	16	16
Microsoft Office Specialist (Word, Excel, PowerPoint, and Access)	99	90
National Occupational Competency (Accounting Basic, Architectural Drafting, Computer Programming, Culinary Arts Prep Cook Level1, Electronics Technology, Pre-Engineering/Engineering Technology)	94	75
National Retail Federation (Customer Service and Sales)	131	121
Oracle (Oracle Database 11g:SQL Fundamentals)	6	0
Project Lead The Way (Introduction to Engineering Design, Principles of Engineering, Digital Electronics, and Civil Engineering and Architecture)	84	84
Chesapeake Center Science and Technology	75	43
TOTAL	597	480

Program Details

The Governor's STEM Academy site will be located in Chesapeake, Virginia at Grassfield High School. The program will begin with 60 freshmen from across the City of Chesapeake in September 2012. Each year thereafter, 60 students will be accepted into the Governor's STEM Academy. The program will serve students in grades 9-12 and will include students that reside within the entire city. Grassfield High School operates on a 4X4 block schedule. Students have the opportunity to take eight courses each school year. The school day begins at 8:40 a.m. and concludes at 3:38 p.m. See Appendix E for the Grassfield High School Bell Schedule.

The curriculum is designed for students to have the opportunity to explore STEM curriculum and derive a career interest from their coursework. Students will be required to take one STEM Academy class per year. The Academy Coordinator and school counselors will ensure students are taking appropriate level mathematics and science courses in conjunction with the required STEM Academy courses.

The Governor's STEM Academy will have an Academy Coordinator who is responsible for recruiting and informing middle school students of STEM. Once accepted into the program, students will have the opportunity to work directly with the Academy Coordinator and the Career Counselor who will team teach career lessons to each grade level. These themed lessons will be geared toward postsecondary academic and career goals, with an emphasis on workplace readiness.

The Governor's STEM Academy will have a Mentorship Coordinator who has a dedicated block to work with students their junior year in preparation for their required mentorship, internship,

or job-shadowing experience. Students will participate in a field-based experience the summer between their junior and senior year.

Chesapeake educators interested in teaching in the Governor's STEM Academy will be proficient in information technology; marketing, and/or STEM education, and either possess appropriate industry certifications needed for their teaching assignments or be willing to participate in training prior to teaching Academy courses. STEM Academy teachers will, in most cases by design, teach both STEM Academy and non-STEM Academy courses. See Appendix F for STEM Academy teacher performance responsibilities.

Each career cluster in the Governor's STEM Academy has one pathway for students to pursue. Each pathway will showcase innovation and best practices for promotion of the career cluster. See Appendix G for Career Pathways Plans of Study.

Program Evaluation

The planning and advisory committees, the individual program advisory boards, the division-wide instructional evaluation process, and various academic and CTE assessments all provide feedback and data for internal evaluation of the Grassfield High School Governor's STEM Academy. STEM Academy planning and advisory committees will continue to meet regularly throughout the establishment process and, once the Academy is established, a specific and purposeful schedule will be developed. The individual advisory boards will meet annually and confer as needed to ensure fidelity to articulated goals and direction. Chesapeake City Public Schools will incorporate its ongoing instructional evaluation process into all STEM Academy programs and applicable courses. In addition, reports to the Virginia Department of Education,

including the CTERS report, and the SEDF report, and the state report card, provide feedback for the internal evaluation process.

Partnership Capacity

Partnerships

The Governor's STEM Academy has created a science, technology, engineering and mathematics partnership consistent with the goals of the Governor's STEM Academy. Members include representatives from private business and industry, economic development, work force development, educational sectors (K-16), community leaders, parents, and career and technical education advisory committee members.

Planning Committee

At the initial meeting of the Grassfield High School Governor's STEM Partnership team, members of the local business and industry sector, work force and economic development entities, postsecondary educational institutions, parents, community leaders, and GFHS discussed the timeline and plans for submitting an application to be recognized as a Governor's STEM Academy. Once the team had an opportunity to review the handbook, each member signed a partnership form. See Appendix H for the list of planning committee members and signed partnership forms.

Advisory Committee

In addition to signing partner identification forms, partners signified their support of specific methods in which they would participate in the Governor's STEM Academy. One of the chosen methods of support was to serve as a member of the Governor's STEM Advisory

Committee. See Appendix I for the list of partnership advisory committee members and signed forms of intent.

Memorandum of Agreement

A formal Memorandum of Agreement was created that outlined ways in which partners would contribute resources to the Governor's STEM Academy to broaden the scope of students' educational experiences. Each partner signed a Memorandum of Agreement signifying their support of the Academy, their willingness to assist in the planning and implementation of the Governor's STEM Academy, and their designation as an integral component in the process of educating the students of Chesapeake City Public Schools. See Appendix J for the signed Memoranda of Agreement forms.

Statement of Assurance

A statement of assurance has been signed by the Superintendent of Chesapeake City Public Schools indicating that operating funds and facilities are available to support The Grassfield Governor's STEM Academy. Chesapeake City Public Schools will serve as the fiscal agent for the STEM Academy. See Appendix K.

Budget

The Governor's STEM Academy has a $630,454 operating budget. Primarily, federal and local funds will be used to maintain the Academy's long-term annual operating budget. Efforts will be undertaken to enlist in-kind support for equipment and summer programs through business and industry contributions. See Appendix L for budget details.

Insurance

Chesapeake City Public Schools is insured by the Virginia Municipal Liability Insurance Program for property and liability. The liability insurance is comprehensive coverage of $1,000,000 per occurrence with no annual aggregate limit. See Appendix M.

Staff Evaluation

Governor's STEM Academy teachers will be evaluated according to the personnel policies of the Chesapeake City Public Schools. See Appendix N.

Appendices

Appendix A:

Program of Study

GOVERNOR'S STEM ACADEMY PROGRAM OF STUDY					
Career Cluster	Course Title	9	10	11	12
Information Technology	Keyboarding Applications	x	x	x	x
	IT Fundamentals	x	x		
	Programming		x	x	x
	Advanced Programming			x	x
	Database Design/Management		x	x	
	Advanced Database Design/Management			x	x
	Design, Multimedia, and Web Technologies		x	x	x
	Computer Information Systems		x	x	x
	Accounting & Advanced Accounting			x	x
	Computer Science CSC 201 - Dual Enrollment TCC				x
Marketing	Entrepreneurship Education (9093)	x	x		
	Sports, Entertainment, and Recreation Marketing (8175)		x	x	x
	Leadership Development (9097)			x	x
	Global Marketing and Commerce (8135)			x	x
	Advanced Global Marketing and Commerce (8136)				x
	Adv. Sports, Entertainment, and Recreation Marketing (8177)				x
	Internet Marketing (8125)			x	x
	International Marketing Management 276 - Dual Enrollment TCC				x
Science, Technology, Engineering and Mathematics	Introduction to Engineering*	x	x		
	Principles of Engineering*		x		
	Digital Electronics*		x	x	
	Aerospace Engineering			x	x
	Civil Engineering and Architecture*			x	x
	Engineering Design and Development				x
	Geospatial Technology	x	x	x	x
	Physics			x	x
	Principles of Technology I		x	x	x
	Principles of Technology II			x	x
All Career Clusters	Dual Enrollment English offered at Grassfield High School				x

**Indicates that students can earn college credit at Rochester Institute of Technology*

Appendix B:

Course Descriptions

GOVERNOR'S STEM ACADEMY COURSE DESCRIPTIONS

STEM Career Cluster

Introduction to Engineering Design *8439*

Course Description: Using computer-modeling software, students learn the design process. They solve design problems as they develop, create, and analyze product models.

Principles of Engineering *8441*

Prerequisite: ***Algebra I Recommended***

Course Description: Students develop an understanding of the engineering profession and the fundamental aspects of engineering problem solving. Students study the historical and current impact of engineering on society as well as ethical implications. Mathematical and scientific concepts will be applied to fundamental engineering topics, including mechanics and electrical circuit theory.

Digital Electronics *8440*

Course Description: Students use computer simulations to learn about the logic of electronics as they design, test, and construct circuits and devices. They apply control system programming and explore sequential logic and digital circuitry fundamentals. Topics in computer circuitry are also presented, including circuitry analysis and an exploration into diodes, transistors, and operational amplifiers.

Aerospace Engineering *8428*

Course Description: This course expands horizons with projects developed with NASA-aerodynamics, astronautics, space-life sciences, and systems engineering.

Civil Engineering and Architecture *8430*

Course Description: This course introduces students to the interdependent fields of civil engineering and architecture; students learn project planning, site planning, and building design.

Engineering Design and Development *8443*

Course Description: This pre-engineering course is designed to follow three core courses (Principles of Engineering, Introduction to Engineering Design, and Digital Electronics) as part of a national engineering program. Students enrolled in the Engineering Design and Development course synthesize knowledge, skills,

and abilities through an authentic engineering experience. Students are expected to develop and formally present an independent study project and a team-oriented project, which are critiqued by an evaluation committee. Students interact and work with community mentors to research, design, and construct solutions to engineering problems.

Physics 4510

Course Description: This course emphasizes a more complex understanding of experimentation, the analysis of data, and the use of reasoning and logic to evaluate and validate evidence. The use of mathematics (including algebra, inferential statistics, and trigonometry) is an important component. A conceptual framework of the physical systems and the laws governing matter and energy are the primary objectives of this course. The practical application of physics in other areas of science, the use of technology, and the role of physics in the world are emphasized.

Principles of Technology I 9811

Course Description: Students in this single-period laboratory science course apply physics and mathematics concepts through a unified systems approach to develop a broad knowledge base of the principles underlying modern technical systems. Students study seven technical principles: force, work, rate, resistance, energy, power, and force transformers, emphasizing how each principle plays a unifying role in the operation of mechanical, fluid, electrical, and thermal systems in high-technology equipment. This "principles and systems" approach to studying these technical principles provides a foundation for further education and career flexibility as technology and technical systems advance. Students must successfully complete the two-year sequence (Physics for Technology I and Physics for Technology II) in order to receive one unit of credit in Physics.

Principles of Technology II 9812

Course Description: Students continue to apply physics and mathematics concepts through a unified systems approach to expand their knowledge base of the principles underlying modern technical systems. This course focuses on seven technical principles: momentum, waves, energy converters, transducers, radiation, optical systems, and time constants, emphasizing how each principle plays a unifying role in the operation of mechanical, fluid, electrical, and thermal systems in high-technology equipment. This "principles and systems" approach to studying these technical principles provides a foundation for further education and career flexibility as technology and technical systems advance. Students must successfully complete the two-year sequence (Physics for Technology I and Physics for Technology II) in order to receive one unit of credit in Physics.

Geospatial Technology *8423*

Course Description: This course is a tool to facilitate the study of geographic information systems (GIS) through: global positioning systems (GPS); remote sensing (RS); digital image processing simulator (DIPS); geodesy, automated cartography (Auto-Carto); land surveying (LS); and navigation. These technologies allow students to explore and analyze the world from a local, global, and expanded perspective. Students will use various processes and techniques to create and utilize data to solve technological challenges. These experiences will employ real-world spatial analysis models and guidelines for integrating, interpreting, analyzing, and synthesizing data to evaluate the implications and limitations of such technologies. Interfacing with telecommunications and automated database management systems will also be explored.

INFORMATION TECHNOLOGY Career Cluster

Information Technology Fundamentals *6670*

Course Description: This course introduces the essential skills needed for students to pursue specialized programs leading to technical and professional careers and certifications in the Information Technology (IT) industry. Students have an opportunity to investigate career opportunities in four major IT areas: Information Services and Support, Network Systems, Programming and Software Development, and Interactive Media. The focus of the IT Fundamentals course is on introducing skills related to information technology basics, Internet fundamentals, network systems, computer maintenance/upgrading/ troubleshooting, computer applications, programming, graphics, Web page design, and interactive media. Students explore ethical issues related to computers and Internet technology and develop teamwork and communication skills that will enhance their employability.

Database Design and Management *6660*

Course Description: This first-year course includes database design and programming. Students study database fundamentals to include database development, modeling, design, and normalization. In addition, students are introduced to database programming. Students gain the skills and knowledge needed to use features of database software and programming to manage and control access to data.

Advanced Database Design and Management *6661*

Course Description: Students study Java programming and Java database applications. The basics of object-oriented programming and the Java programming language are emphasized in this instruction. Students will prepare for industry certification in database applications and programming.

Programming *6640*

Course Description: Students explore computer concepts, use logic procedures, and implement programming procedures using one or more programming languages, such as Visual Basic, Java, and C++. In addition, HTML or Java Scripting is used to program Web pages.

Advanced Programming 6*641*

Course Description: Building on a foundation of programming skills, students will use object-oriented programming to develop applications for Windows, database, multimedia, games, mobile, and/or Web environments. Students will have the opportunity to explore and create applications related to the information technology and game design industries.

Design, Multimedia, and Web Technologies *6630*

Course Description: Students develop proficiency in creating desktop publications, multimedia presentations/projects, and Web sites using industry standard application software. Students incorporate principles of layout and design in completing publications and projects. Students design portfolios that may include business cards, newsletters, mini-pages, Web pages, multimedia presentations/projects, calendars, and graphics. The cooperative education method is available for this course. Students combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year.

Computer Information Systems *6612*

Course Description: Students apply problem-solving skills to real-life situations through word processing, spreadsheets, databases, multimedia presentations, and integrated software activities. Students work individually and in groups to explore computer concepts, operating systems, networks, telecommunications, and emerging technologies. The cooperative education method is available for this course. Students combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year.

Accounting *6320*

Course Description: Students study the basic principles, concepts, and practices of the accounting cycle for a service business and a merchandising business. Topics covered include analyzing transactions, journalizing and posting entries, preparing payroll records and financial statements, and managing cash systems. Ethics and professional conduct are emphasized. Students learn fundamental accounting procedures using both manual and electronic systems.

The cooperative education method is available for this course. Students combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year.

Advanced Accounting *6321*

Course Description: Students gain knowledge of advanced accounting principles, procedures, and techniques used to solve business problems and to make financial decisions. Students use accounting and spreadsheet software to analyze, synthesize, evaluate, and interpret business financial data. Students work in a technology-integrated environment using authentic workplace industry scenarios that reflect current industry trends and standards. The cooperative education method is available for this course. Students combine classroom instruction and supervised on-the-job training in an approved position with continuing supervision throughout the school year.

Computer Science I Dual Enrollment TCC

Course Description: Introduces algorithm and problem-solving methods. Emphasizes structured programming concepts, elementary data structures and the study and use of a high level programming language.

MARKETING Career Cluster

Leadership & Entrepreneurship Education *9093*

Course Description: This course introduces students to the exciting world of creating, owning, and launching their own business. Students will learn concepts and techniques for planning an innovative business and living the entrepreneurial lifestyle.

Sports, Entertainment, and Recreation Marketing *8175*

Course Description: Students develop skills in the areas of marketing analysis, event marketing, communication, and human relations, along with a thorough understanding of the sports, entertainment, and recreation industry and career options available. Academic skills (mathematics, science, English, and history/social science) related to the content are a part of this course. Computer/technology applications supporting this course are studied.

Advanced Sports, Entertainment, and Recreation Marketing 8*177*

Course Description: Advanced Sports and Entertainment Marketing will build on students' prior knowledge of sports, entertainment, and recreation marketing. This course focuses on the principles of management and planning supported by research, financial, and legal concepts. Students will be able to plan and execute an event, develop a career plan, and establish a sports, entertainment, or recreation marketing product/business. Academic skills (mathematics, science, English, and history/social science) related to the content are a part of this course. Computer/technology applications supporting the course are studied.

Global Marketing and Commerce *8135*

Course Description: Global Marketing and Commerce is a specialized course for students with a career interest in the field of international trade. Students gain an understanding of the various careers in global trade, finance, shipping, and marketing and consider fundamental concepts, principles, and theories of marketing in an international setting. Course content blends macroeconomic and microeconomic theory with international culture, politics, legal issues, concepts, practices, and applications. Internships may be available to provide students with additional opportunities for "hands-on" experiences in international marketing. Academic knowledge and skills (mathematics, science, English, and history/social science) related to the content are a part of this course. Computer/technology applications supporting this course are studied.

Advanced Global Marketing and Commerce *8136*

Course Description: Advanced Global Marketing and Commerce, a specialized course for students with a career interest in international trade, builds upon concepts learned in Global Marketing and Commerce (8135). Economic and international trade concepts are reviewed, and the world environment of international trade is further explored. Students expand their knowledge about the impact of culture on international trade and continue their study of the legal and political aspects of international marketing. Global product strategies are examined. Concepts detailing entry into international markets, pricing strategies, international promotion, and marketing research are studied. Computer/technology applications supporting international marketing are explored. A review of skills and preparation required for careers in international marketing complete this course. Internships that provide "hands-on" opportunities in the international area may be available to students. Academic knowledge and skills (mathematics, science, English, and history/social science) related to the content are a part of this course. Computer/technology applications supporting this course are studied.

Leadership Development *9097*

Course Description: Students develop competencies in identifying individual aptitudes in relation to effective leadership skills, understanding organizational behavior, using effective communication in the workplace, handling human resources and organizational problems, supervising and training employees, resolving conflict, and planning for the future. Continuing education in leadership is emphasized as well as practical leadership experiences in cooperation with school and community leaders.

Internet Marketing *8125*

Course Description: Students receive an introduction to marketing functions and the business plan and study Internet marketing's role in the global economy. Students gain knowledge of the tools and techniques used in Internet marketing and learn how to design a Web site. They explore ethical, legal, and security aspects and prepare for a career in Internet marketing. Academic skills (mathematics, science, English, and history/social science) related to the content are a part of this course. Computer/technology applications supporting this course are studied.

Introduction Marketing Management Dual Enrollment TCC

Course Description: Presents the process of marketing and management and applies it to the marketing of products within the global marketplace. Introduces students to activities involving the gathering and analyzing of information in the development and implementation of an international marketing plan.

College Composition I & II Dual Enrollment TCC

Course Description: This rigorous course is offered for dual enrollment between Chesapeake Public Schools and Tidewater Community College. Students will study and produce college-level composition. The first semester elective credit course provides 3 credit hours of college study. Upon successful completion of the second semester course of study, the student earns both the state of Virginia requisite credit for Grade 12 and 3 credits of college study. Students must complete both semesters to meet Grade 12 graduation requirements. Students must be self-motivated and should possess a strong background in English grammar and usage. Students are also required to complete summer reading.

Appendix C:

Industry Credentials

Industry Credentials GOVERNOR'S STEM Academy			
Course	State Code	Exam	Who will test?
Computer Information Systems	6612	MOS Word 2010	All students in course
Design, Multimedia, and Web Technologies	6630	MOS PowerPoint 2010	All students in course
Advanced Programming	6641	NOCTI Computer Programming	All students in course
Database Design & Management	6660	MOS Access 2010	All students in course
Advanced Database Design	6661	Oracle	All students in course
IT Fundamentals	6670	IC3 Global	All students in course
Global Marketing and Commerce	8135	NPC in Customer Service	All students in course
Adv. Global Marketing & Commerce	8136	NPC in Sales	All students in course
Sports, Entertainment, & Recreation Marketing	8175	NPC in Customer Service	All students in course
Adv. Sports, Entertainment, & Recreation Mktg.	8177	NPC in Sales	All students in course
Aerospace Engineering	8428	End of Course PLTW exam	All students in course
Civil Engineering & Architecture	8430	End of Course PLTW exam	All students in course
Introduction to Engineering	8439	End of Course PLTW exam	All students in course
Digital Electronics	8440	End of Course PLTW exam	All students in course
Principles of Engineering	8441	End of Course PLTW exam	All students in course
Engineering Design & Development	8443	End of Course PLTW exam	All students in course
Leadership & Entrepreneurship Education	9093	Work Place Readiness	All students in course
Leadership Development	9097	Work Place Readiness	All students in course

**Must meet age requirement for NRF.*

Appendix D:

STEM Academy Application

GRASSFIELD HIGH SCHOOL
GOVERNOR'S STEM ACADEMY APPLICATION

Grassfield High School, 2007 Grizzly Trail, Chesapeake, VA 23323

Application Deadline: January 15 -- Submit to middle school counselor.

STUDENT DATA SHEET

_____

Student's Legal Last Name Legal First Name Middle Name Preferred Name

_____

Student's Residence – Street Address City State Zip Code

_____ _____ _____

Current Middle School Grade Level Student ID Number

Birth Date _____ Gender (M or F) _____

_____ _____

Mother's/Guardian's Name Father's/Guardian's Name

Home Telephone # _____ E-mail Address _____

Mother's Work #_____ Mother's cell # _____

Father's Work # _____ Father's cell # _____

Student's Zoned High School (if not accepted for Governor's STEM Academy)

_____

Student Essay – Directions to Student

<u>On a separate sheet of paper</u> neatly print or type a thoughtful essay of approximately 350 words that describes your goals for participating in the Governor's STEM Academy. *The essay should include your thoughts and reasons for which of the three areas of concentration you wish to focus your studies: entrepreneurship, information technology, or pre-engineering*. Essays should be original, creative, and grammatically correct.

The Chesapeake Public School system is an equal educational opportunity school system. The School Board of the City of Chesapeake also adheres to the principles of equal opportunity in employment and, therefore, prohibits discrimination in terms and conditions of employment on the basis of race, sex, national origin, color, religion, age, or disability.

GRASSFIELD HIGH SCHOOL GOVERNOR'S STEM ACADEMY

ADMISSIONS AGREEMENT

The Governor's STEM Academy at Grassfield High School offers a specialized curriculum for highly interested and motivated students. For a student to be successful in this program, he/she must be a consistent, dedicated learner. Therefore, applicants and parents are required to make the following commitment.

I agree to the following terms and conditions for participating in the Grassfield Governor's STEM Academy.
I will

1. follow the rules of the school as outlined in the *Grassfield High School Student Handbook.*
2. actively participate in each class by being prepared, listening attentively, offering relevant comments, posing insightful questions, taking notes, and doing any other activities necessary to meet the expectations set forth for each class.
3. submit quality work in a timely fashion seeking additional assistance from my instructors as needed.
4. manifest the highest degree of academic integrity. Incidents of cheating may be grounds for removal from the program.
5. maintain an excellent attendance record, scheduling appointments or vacations at times that do not conflict with classes.
6. remain in the program unless recommended for dismissal by the Academy Coordinator or Academy staff. Recommendation for continuance or dismissal from the program will be determined by student progress, attitude, and motivation.

I understand that if I do not meet the standards of the Academy program, either because of the quality of my work or because of my performance as a serious learner, I may be asked to withdraw from the program to enroll in a course of study which better meets my level of performance. I also understand that if I leave the Academy program, I must return to my zoned high school and, according to Virginia High School League rules, I would not be eligible to participate in VHSL activities for 365 days unless I was granted a waiver under VHSL rule 28-6-2(14).

_____ _____
Student's Signature Date

I hereby grant permission and consent for my son/daughter to enroll in the Grassfield Governor's STEM Academy program and agree to all of the listed terms. Finally, I will support my child's academic growth and encourage development of independent study skills.

_____ _____
Parent's/Guardian's Signature Date

GRASSFIELD HIGH SCHOOL GOVERNOR'S STEM ACADEMY

PARENT ASSESSMENT FORM

Student's Name_____

Counselor_____ School_____

Directions to the Student: Complete the information above and have a parent or guardian complete this form.

Directions to the Parent: Your child is applying for admission to the Governor's STEM Academy program at Grassfield High School. For each item below, please place a check mark in the box that best describes your assessment of your child.

	Almost Always	Often	Occasionally	Rarely	Never
Ease of Learning – Enjoys the challenge of problems, assignments, and issues. Learns quickly.					
Adaptability – Approaches ideas and problems from a number of directions. Finds alternative means of solving problems. Thinks about ideas in new ways.					
Initiative and Enthusiasm – Is a highly motivated, independent worker. Seeks additional tasks; is intellectually curious; stays actively engaged in activities.					
Persistence – Stays with tasks; relates progress on tasks to accomplishment of larger goals.					
Reliability and Integrity – Is scrupulous and punctual in fulfilling obligations; readily takes responsibility.					
Reasoning – Uses logical, analytical reasoning and/or creative, divergent thinking to consider ideas or solve problems. (Originality and elaboration of thinking)					
Communications – Communicates effectively.					
Organization – Manages time, resources and materials; meets deadlines; divides tasks into subtasks.					
Leadership Qualities – Shows respect and tolerance of others' views. Is willing to accept the ideas of others and contributes to the group process. Influences others in a positive manner.					
Success – Displays the ability to succeed in a challenging program.					

Student's Name_____

Counselor_____ School_____

Please provide any comments that might assist us in determining your child's potential to succeed in the Governor's STEM Academy program.

_____ _____ _____

Parent's Name (Printed) Parent's Signature Date

Thank you for completing this form. Your input is valued.
Please return this form to your child's school counselor.

Due Date: January 15, 2013

GRASSFIELD HIGH SCHOOL GOVERNOR'S STEM ACADEMY

SCIENCE **TEACHER RECOMMENDATION FORM**

Student's Name _____

Teacher _____ Subject _____

Counselor _____ School _____

Directions to Student: Complete the information above and give a separate form to the following four teachers for recommendation: your current English teacher, mathematics teacher, science teacher, and social studies teacher.

Directions to Student, Parent/Guardian: Teacher recommendations are confidential; please do not ask teachers to reveal the contents to your son/daughter or to you.

Directions to Teacher: The student whose name appears above is applying for admission to the Governor's STEM Academy at Grassfield High School. For each item below, please mark the box that best represents your assessment of this student.

	Almost Always	Often	Occasionally	Rarely	Never
Ease of Learning – Enjoys the challenge of problems, assignments, and issues. Learns quickly.					
Adaptability – Approaches ideas and problems from a number of directions. Finds alternative means of solving problems. Thinks about ideas in new ways.					
Initiative and Enthusiasm – Is a highly motivated, independent worker. Seeks additional tasks; is intellectually curious; stays actively engaged in activities.					
Persistence – Stays with tasks; relates progress on tasks to accomplishment of larger goals.					
Reliability and Integrity – Is scrupulous and punctual in fulfilling obligations; readily takes responsibility.					
Reasoning – Uses logical, analytical reasoning and/or creative, divergent thinking to consider ideas or solve problems. (Originality and elaboration of thinking)					
Communications – Communicates effectively.					
Organization – Manages time, resources and materials; meets deadlines; divides tasks into subtasks.					
Leadership Qualities – Shows respect and tolerance of others' views. Is willing to accept the ideas of others and contributes to the group process. Influences others in a positive manner.					
Success – Displays the ability to succeed in a challenging program.					

Student's Name_____

Counselor_____ School_____

Please provide any comments that might assist us in determining this student's potential to succeed in the Governor's STEM Academy program. We are interested in strong academic students who are highly motivated and exhibit mature decision-making skills.

Teacher, please check only one:

☐ Highly recommended ☐ Recommended ☐ Not Recommended

_____ _____

Teacher's Name (Printed) Teacher's Signature

_____ _____

Subject Date

Thank you for completing this form. Your input is valued.
Please return this form to the school counselor.

GRASSFIELD HIGH SCHOOL GOVERNOR'S STEM ACADEMY

MATH **TEACHER RECOMMENDATION FORM**

Student's Name _____

Teacher _____ Subject _____

Counselor _____ School _____

Directions to Student: Complete the information above and give a separate form to the following four teachers for recommendation: your current English teacher, mathematics teacher, science teacher, and social studies teacher.

Directions to Student, Parent/Guardian: Teacher recommendations are confidential; please do not ask teachers to reveal the contents to your son/daughter or to you.

Directions to Teacher: The student whose name appears above is applying for admission to the Governor's STEM Academy at Grassfield High School. For each item below, please mark the box that best represents your assessment of this student.

	Almost Always	Often	Occasionally	Rarely	Never
Ease of Learning – Enjoys the challenge of problems, assignments, and issues. Learns quickly.					
Adaptability – Approaches ideas and problems from a number of directions. Finds alternative means of solving problems. Thinks about ideas in new ways.					
Initiative and Enthusiasm – Is a highly motivated, independent worker. Seeks additional tasks; is intellectually curious; stays actively engaged in activities.					
Persistence – Stays with tasks; relates progress on tasks to accomplishment of larger goals.					
Reliability and Integrity – Is scrupulous and punctual in fulfilling obligations; readily takes responsibility.					
Reasoning – Uses logical, analytical reasoning and/or creative, divergent thinking to consider ideas or solve problems. (Originality and elaboration of thinking)					
Communications – Communicates effectively.					
Organization – Manages time, resources and materials; meets deadlines; divides tasks into subtasks.					
Leadership Qualities – Shows respect and tolerance of others' views. Is willing to accept the ideas of others and contributes to the group process. Influences others in a positive manner.					
Success – Displays the ability to succeed in a challenging program.					

Student's Name_____

Counselor_____ School_____

Please provide any comments that might assist us in determining this student's potential to succeed in the Governor's STEM Academy program. We are interested in strong academic students who are highly motivated and exhibit mature decision-making skills.

Teacher, please check only one:

☐ Highly recommended ☐ Recommended ☐ Not Recommended

_____ _____

Teacher's Name (Printed) Teacher's Signature

_____ _____

Subject Date

Thank you for completing this form. Your input is valued.
Please return this form to the school counselor.

GRASSFIELD HIGH SCHOOL GOVERNOR'S STEM ACADEMY

ENGLISH **TEACHER RECOMMENDATION FORM**

Student's Name _____

Teacher _____ Subject _____

Counselor _____ School _____

Directions to Student: Complete the information above and give a separate form to the following four teachers for recommendation: your current English teacher, mathematcis teacher, science teacher, and social studies teacher.

Directions to Student, Parent/Guardian: Teacher recommendations are confidential; please do not ask teachers to reveal the contents to your son/daughter or to you.

Directions to Teacher: The student whose name appears above is applying for admission to the Governor's STEM Academy at Grassfield High School. For each item below, please mark the box that best represents your assessment of this student.

	Almost Always	Often	Occasionally	Rarely	Never
Ease of Learning – Enjoys the challenge of problems, assignments, and issues. Learns quickly.					
Adaptability – Approaches ideas and problems from a number of directions. Finds alternative means of solving problems. Thinks about ideas in new ways.					
Initiative and Enthusiasm – Is a highly motivated, independent worker. Seeks additional tasks; is intellectually curious; stays actively engaged in activities.					
Persistence – Stays with tasks; relates progress on tasks to accomplishment of larger goals.					
Reliability and Integrity – Is scrupulous and punctual in fulfilling obligations; readily takes responsibility.					
Reasoning – Uses logical, analytical reasoning and/or creative, divergent thinking to consider ideas or solve problems. (Originality and elaboration of thinking)					
Communications – Communicates effectively.					
Organization – Manages time, resources and materials; meets deadlines; divides tasks into subtasks.					
Leadership Qualities – Shows respect and tolerance of others' views. Is willing to accept the ideas of others and contributes to the group process. Influences others in a positive manner.					
Success – Displays the ability to succeed in a challenging program.					

Student's Name_____

Counselor_____ School_____

Please provide any comments that might assist us in determining this student's potential to succeed in the Governor's STEM Academy program. We are interested in strong academic students who are highly motivated and exhibit mature decision-making skills.

Teacher, please check only one:

☐ Highly recommended ☐ Recommended ☐ Not Recommended

_____ _____

Teacher's Name (Printed) Teacher's Signature

_____ _____

Subject Date

Thank you for completing this form. Your input is valued.
Please return this form to the school counselor.

GRASSFIELD HIGH SCHOOL GOVERNOR'S STEM ACADEMY

SOCIAL STUDIES **TEACHER RECOMMENDATION FORM**

Student's Name _____

Teacher _____ Subject _____

Counselor _____ School _____

Directions to Student: Complete the information above and give a separate form to the following four teachers for recommendation: your current English teacher, mathematics teacher, science teacher, and social studies teacher.

Directions to Student, Parent/Guardian: Teacher recommendations are confidential; please do not ask teachers to reveal the contents to your son/daughter or to you.

Directions to Teacher: The student whose name appears above is applying for admission to the Governor's STEM Academy at Grassfield High School. For each item below, please mark the box that best represents your assessment of this student.

	Almost Always	Often	Occasionally	Rarely	Never
Ease of Learning – Enjoys the challenge of problems, assignments, and issues. Learns quickly.					
Adaptability – Approaches ideas and problems from a number of directions. Finds alternative means of solving problems. Thinks about ideas in new ways.					
Initiative and Enthusiasm – Is a highly motivated, independent worker. Seeks additional tasks; is intellectually curious; stays actively engaged in activities.					
Persistence – Stays with tasks; relates progress on tasks to accomplishment of larger goals.					
Reliability and Integrity – Is scrupulous and punctual in fulfilling obligations; readily takes responsibility.					
Reasoning – Uses logical, analytical reasoning and/or creative, divergent thinking to consider ideas or solve problems. (Originality and elaboration of thinking)					
Communications – Communicates effectively.					
Organization – Manages time, resources and materials; meets deadlines; divides tasks into subtasks.					
Leadership Qualities – Shows respect and tolerance of others' views. Is willing to accept the ideas of others and contributes to the group process. Influences others in a positive manner.					
Success – Displays the ability to succeed in a challenging program.					

Student's Name_____

Counselor_____ School_____

Please provide any comments that might assist us in determining this student's potential to succeed in the Governor's STEM Academy program. We are interested in strong academic students who are highly motivated and exhibit mature decision-making skills.

Teacher, please check only one:

☐ Highly recommended ☐ Recommended ☐ Not Recommended

_____ _____

Teacher's Name (Printed) Teacher's Signature

_____ _____

Subject Date

Thank you for completing this form. Your input is valued.
Please return this form to the school counselor.

REQUIRED ELECTRONIC PORTFOLIO

To be considered for acceptance into the Governor's STEM Academy at Grassfield High School, each applicant must complete an electronic portfolio containing three activities that demonstrates his/her ability in the field of technology.

Directions:

Save your work to a recordable CD (CD-R) using the following guidelines:

- **Create a folder with your student ID number as the name.**
- **Within this folder, save each completed activity in a separate folder.**

Examples of Student Products for the Electronic Portfolio

1. Create a 5-minute, self-running **multimedia presentation** that markets either tourism for the Commonwealth of Virginia or a college athletic program. Self-running describes a program that will run on its own.
   Suggested software: *Microsoft PowerPoint or Microsoft Movie Maker*

2. Create a **newsletter** (no more than four pages) on international issues. Integration of proper grammar and formal diction are expected to be evident in the product. No copied or pasted content accepted and the product must be the student's original work.
   Suggested software: *Microsoft Publisher or Microsoft Word*

3. Create a **Web site** for your own school that can be viewed with Internet Explorer. There should be a Home Page with four additional linked pages. Copies of the school's existing Web page will not be accepted.
   Suggested software: *Microsoft Publisher, Microsoft Word, or any other program that will save in *.html format.*

4. Create a **technical guide** (pamphlet, brochure, or multimedia presentation) that explains to novice users how to analyze and solve simple hardware and software problems. Consider problems such as "a job won't print" or "the computer won't turn on."
   Suggested software: *Microsoft PowerPoint, Microsoft Publisher, Microsoft Word*

5. Create an original **résumé** that would reflect the accomplishments of the student applicant.
   Suggested software: *Microsoft Word*

6. Create a floor plan **design** of a business office of 12-15 employees.
   Any entry not saved in the suggested format will not be evaluated.
   Suggested software: *AutoCAD or any program that will save in *.bmp, *.jpg, *.gif, * .pdf, or *.wmf format.*

7. Create a **working database** for a business in which five employees can enter sales from four products sold (video games, CDs, books, and DVDs). Employees should also be able to track sales by product type or by employee. Enter sufficient data so that the database can be queried.
   Suggested software: *Microsoft Access*

8. Create a **project proposal** that details what is necessary to establish a networked environment for every room in a house. Consider at least one file server and two printers in your proposal.
   Any entry not saved in the suggested format will not be evaluated.
   Suggested software: *Microsoft Word*
   If including floor plans, AutoCAD or any program that will save in *.bmp, *.jpg, *.gif, *.pdf, or *.wmf format.

Submit your CD containing your electronic portfolio with your academy application by January 15, 2012 to your school counselor. Your application will not be considered without the electronic portfolio. Please note that the electronic portfolio cannot be returned to the applicant.

GRASSFIELD HIGH SCHOOL GOVERNOR'S STEM ACADEMY

COUNSELOR CHECKLIST

Student's Name _____ Grade Level_____

Current
School_____

Directions to Student: Supply the information requested above and give this form to your school counselor along with completed items 1, 2, 3, 8, and 10 (list below) by January 15, 2013.

Directions to School Counselor: The final deadline for the student to submit all items to you is January 15, 2013. Please assemble the student's application using the checklist below, make copies if necessary, and forward the entire packet to the Governor's STEM Academy Coordinator at Grassfield High School.

Applications received after January 15, 2013 will not be considered in the first round of acceptances. Late applications will be placed on the Academy waiting list to be considered if any vacancies occur. Before forwarding any late applications, please clearly mark the top of the first page with "late" and indicate the date received.

INFORMATION BELOW TO BE COMPLETED BY THE SCHOOL COUNSELOR

Application Checklist

_____ 1. Student Data Sheet (Page 1)

_____ 2. Admissions Agreement (Page 2)

_____ 3. Parent's Assessment Form (Pages 3 & 4)

_____ 4. Teacher's Recommendation Form #1 (Pages 5 & 6)

_____ 5. Teacher's Recommendation Form #2 (Pages 7 & 8)

_____ 6. Teacher's Recommendation Form #3 (Pages 9 & 10)

_____ 7. Teacher's Recommendation Form #4 (Pages 11 & 12)

_____ 8. Applicant's Electronic Portfolio of three activities (CD)

_____ 9. Counselor's Checklist (Page 14)

_____ 10. Student Essay on separate sheet of paper provided by student (Directions on Page 1)

Counselor's signature_____ Date_____

Note: Applicants' transcripts will be used in screening applicants, but the information will be obtained directly from the Chesapeake Public Schools Information Technology Department. The counselor need not supply this information with applications.

Thank you for assisting in the completion of this student's application packet.

Appendix E:

Bell Schedule

Regular Bell Schedule

<table>
<tr><td>Homeroom / Block 1</td><td colspan="4">8:40 - 10:15</td></tr>
<tr><td>Block 2</td><td colspan="4">10:21 - 11:52</td></tr>
<tr><td>Block 3</td><td colspan="4"></td></tr>
<tr><td rowspan="6"></td><td>1st Lunch</td><td>2nd Lunch</td><td>3rd Lunch</td><td>4th Lunch</td></tr>
<tr><td>Lunch
11:52 - 12:21</td><td>Class
11:58 - 12:26</td><td rowspan="3">Class
11:58 -12:59</td><td rowspan="4">Class
11:58 – 1:32</td></tr>
<tr><td rowspan="3">Class
12:26 - 2:01</td><td>Lunch
12:26 - 12:54</td></tr>
<tr><td rowspan="2">Class
12:59 - 2:01</td></tr>
<tr><td>Lunch
12:59 - 1:27</td></tr>
<tr><td>Class
1:32 - 2:01</td><td>Lunch
1:32 - 2:01</td></tr>
<tr><td>Block 4</td><td colspan="4">2:07 - 3:38</td></tr>
</table>

Appendix F:

Job Description

Grassfield High School Governor's STEM Academy
Teacher Performance Responsibilities

Teacher Pool

Staffing for Governor's STEM Academy courses is made exclusively from the official Governor's STEM Academy Pool as vacancies become available; therefore, entering the pool serves as the gateway to teaching in the Governor's STEM Academy Program, but does not guarantee ultimate placement in the program. Such placement is dependent upon staffing needs and final approval by the principal.

The following items outline the basic responsibilities for teaching in the Governor's STEM Academy at Grassfield High School. Teachers will be expected to do the following:

Teacher Training

1. Attend technology certification sessions and training to obtain required industry certification(s) during the school year or summer before instructing students in the program.
2. Appropriate certification(s) must be maintained in order to remain eligible to teach in the Grassfield Governor's STEM Academy.

Implementation of the Academy Program

3. Participate in summer curriculum development workshops to create instructional materials. Compensation will be provided for these activities.
4. Serve on a committee as needed to assist in the planning and preparation of Governor's STEM Academy policies and procedures. Committee meetings will be held at Grassfield High School.
5. Transfer to Grassfield High School to teach non-Academy CTE courses in the teacher's area of certification as assigned by the administration prior to becoming an instructor in the Academy, if necessary.
6. Attend Governor's STEM Academy staff meetings and in-services as determined by the Academy Coordinator.
7. Become familiar with the curriculum and assessment requirements, including industry certifications, in one's subject area.
8. Maintain a personal commitment to remaining current in technology and to promoting love of learning in students.
9. Display genuine concern for each student's welfare.
10. Work collaboratively with students in the pursuit of knowledge.
11. Support students academically by providing extra help as needed.
12. Realize that flexibility must be a key component in the instructional setting and that collaboration with other teachers will be necessary.
13. Fulfill Academy teacher responsibilities by placing emphasis on the personal development of students to ensure that each student will
    - Learn to assess and evaluate information.
    - Develop a technology portfolio of exemplary work.
    - Develop problem-solving and decision-making skills.
    - Obtain industry certification credentials.
    - Acquire the skills and attitudes necessary for success in higher education and employment in a highly competitive world.
14. Tailor instruction for different learning styles.

Assessment Responsibilities

15. Ensure that students are informed of current subject content and course requirements.
16. Utilize a variety of assessment methods to measure both the content and process of achievement.
17. Comply with all program deadlines identified by the Academy Coordinator and Grassfield administration.
18. Prepare students for state-approved certification assessments.
19. Facilitate opportunities for student participation in appropriate CTE student organizations.

Appendix G:

Pathway Plans of Study

Commonwealth of Virginia Plan of Study

Science, Technology, Engineering & Mathematics

Student Name: _____
School: Grassfield High School
Date: _____

Cluster: Science, Technology, Engineering & Mathematics **Pathway:** Engineering and Technology

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses Source: Administrative Planning Guide http://www.cteresource.org/apg/	SAMPLE – Occupations Relating to This Pathway: http://www.doe.virginia.gov/instruction/career_technical/career_clusters/sample_plans_study/index.shtml http://www.careerclusters.org http://www.cteresource.org/cpg/
Graduation Requirements: http://www.doe.virginia.gov/instruction/graduation/index.shtml								Aeronautical Engineering Aerospace Engineering Agricultural Engineering Agricultural Technician Application Engineer Architectural Engineer Automotive Engineer Biomedical Engineer Biotechnology Engineer CAD Technician Chemical Engineer Civil Engineer Communication Engineer Computer Engineer Computer Programmer Construction Engineer Electrical Engineer Electronics Technician Geothermal Engineer Industrial Engineer Manufacturing Engineer Marine Engineer Mechanical Engineer Metallurgist Mining Engineer Nuclear Engineer Petroleum Engineer Project/Process Engineer Survey Technician Systems Engineer Transportation Engineer
MIDDLE	7	English 7 (1115)	Mathematics 7 (3111)	Life Science 7 (4116)	Social Studies 7 (2356)		**NOTE: Use state course titles** Introduction to Technology (8483)	
MIDDLE	8	English 8 (1123)	Mathematics 8 (3112) or Algebra I (3130)	Physical Science 8 (4126)	Social Studies 8 (2106)	Foreign Language	Inventions and Innovations (8461) Technological Systems (8462)	
Career Assessment: Identify an appropriate career assessment instrument at the middle school level used to help students and their parents plan for high school: VA Wizard ☒ or other assessment (please indicate): _____								
SECONDARY	9	English 9 (1130) or Honors English 9 (1130)	Algebra I (3130) Geometry (3143) or Algebra II (3135)	Earth Science (4210) or Honors Earth Science (4210)	World History and Geography to 1500 AD (2215)	Economics & Personal Finance (6120) Health & PE (2 years) (7310 and 7311) Foreign Language (3 years) Other Electives to Geospatial Technology (8423) Complement Pathway (Core Academic and CTE):	Introduction to Engineering Design (PLTW) (8439)	
SECONDARY	10	English 10 (1140) or Honors English 10 (1140)	Geometry (3143) or Algebra II (3135)	Biology (4310) or Honors Biology (4310)	World History and Geography 1500 AD to present (2216)		Principles of Engineering (PLTW) (8441)	
SECONDARY	11	English 11(1150) or Honors English 11 (1150)	Algebra II (3135) or Trigonometry/Probability and Statistics (3149)	Chemistry (4410) or Honors Chemistry (4410) or AP Biology (4370) or AP Chemistry (4470)	VA/US History (2360) or AP US History (2319)		Digital Electronics (PLTW) (8440) Aerospace Engineering (PLTW) (8428)	
SECONDARY	12	English 12 (1160) or World Literature (1515) or Honors English 12 (1160) or AP English Literature (1195) and Composition or Dual Enrollment College Composition I and II (DE 1600/1601)	Trigonometry/Probability and Statistics (3149) or Calculus (3178) or AP Calculus AB/BC (3177)	Contemporary Physics (4510) (or Principles of Technology I and II)(9811 / 9812) or AP Physics (4570) or other science course	VA/US Government (2440) or AP Government and Politics (2445)		Civil Engineering and Architecture (PLTW) (8420) Engineering Design and Development (PLTW) (8443)	
High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)								

List related certifications/credentials approved by VDOE and offered locally:	Additional Learning Opportunities:
http://www.cteresource.org/apg (Go to Certification – License Section) End of Course Project Lead the Way Exam	CTSO Organization(s): ☐ DECA ☐ FBLA ☐ FCCLA ☐ FFA ☐ FEA ☐ HOSA ☐ SkillsUSA ☒ TSA **Work-Based Learning:** ☒ Career Research ☐ Cooperative Education ☒ Internship ☒ Mentorship ☒ Job Shadowing ☐ Service Learning Project ☐ Student Apprenticeship
Postsecondary: Placement Assessments such as COMPASS & SAT II	College Entrance Exams such as ACT & SAT

POSTSECONDARY

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY
Individual plans must include locally agreed upon courses at the postsecondary level (See page 2)

Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree	Postgraduate Degree
Engineering and Technology	Engineering Technology	Engineering	

College: _____ **School Division(s):** _____

Postsecondary: Placement Assessments such as COMPASS & SAT II

POSTSECONDARY - COMMUNITY COLLEGE or APPRENTICESHIP - Determined Locally

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives			
POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.								
Year 1 1st Semester	College Composition I (ENG 111) or English Literature	College Algebra (MTH 158) or Pre-Calculus I (MTH 163)	College Chemistry I (CHM 111)	Principles of Psychology (PSY 200)	Introduction to Engineering (EGR 120)			
Year 1 2nd Semester	College Composition II (ENG 112) or English Literature	Pre-Calculus II (MTH 164)	General College Physics I (PHY 201)	Global Issues	Introduction to Engineering Methods (EGR 125)			
Year 2 1st Semester	Principles of Public Speaking (CST 100)	Calculus w/Analytical Geometry I (MTH 173) or Ordinary Differential Equations (MTH 279)	General College Physics II (PHY 202)	United States History I (HIS 121)	Engineering Mechanics – Statics (EGR 140)			

	Year 2 2nd Semester	Technical Report Writing (ENG 131)	Applied Calculus (MTH 270)	General Biology (BIO 101)	Introduction to Sociology I (SOC 201) or Ethical and Legal Issues	Continue Courses in the area of specialization			
	College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)								

Related Industry Certifications Available:	**Additional Suggested Learning Opportunities:** **Work-Based Learning:** ☐ Cooperative Education ☐ Internship ☐ Mentorship ☐ Job Shadowing ☐ Service Learning Project ☐ Registered Apprenticeship

UNIVERSITY	University/College: Degree or Major: Number of Articulated CC Credits:

Notes:

Commonwealth of Virginia
Plan of Study

Student Name: _____
School: Grassfield High School
Date: _____

Cluster: Information Technology **Pathway:** Programming and Software Development

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses Source: Administrative Planning Guide http://www.cteresource.org/apg/	SAMPLE – Occupations Relating to This Pathway: http://www.doe.virginia.gov/instruction/career_technical/career_clusters/sample_plans_study/index.shtml http://www.careerclusters.org http://www.cteresource.org/cpg/
Graduation Requirements: http://www.doe.virginia.gov/instruction/graduation/index.shtml								• Animator • Digital Media Designer • Graphic Designer • Instructional Technologist • Media Specialist • Multimedia Author • Multimedia Development • Multimedia Specialist • Producer • Production Assistant • Streaming Media Specialist • Virtual Reality Specialist • Web Administrator • Web Architect/Designer • Web Designer • Web Developer • Web Producer • Webmaster • Game Developer • Operating System Designer/Engineer • Programmer • Project Lead • Software Applications Specialist • Software Applications Tester • Software Design Engineer • Systems Administrator • Systems Analyst • Test Engineer
MIDDLE	7	English 7 (1115)	Mathematics 7 (3111)	Life Science 7 (4116)	Social Studies 7 (2356)		**NOTE: Use state course titles** Introduction to Technology (8483)	
MIDDLE	8	English 8 (1123)	Mathematics 8 (3112) or Algebra I (3130)	Physical Science 8 (4126)	Social Studies 8 (2106)	Foreign Language	Inventions and Innovations (8461) or Technological Systems (8462)	
Career Assessment: Identify an appropriate career assessment instrument at the middle school level used to help students and their parents plan for high school: VA Wizard ☒ or other assessment (please indicate): _____								
SECONDARY	9	English 9 (1130) or Honors English 9 (1130)	Algebra I (3130) or Algebra II (3135) Geometry (3143)	Earth Science (4210) or Honors Earth Science (4210)	World History and Geography to 1500 AD (2215)	Economics & Personal Finance (6120) Health & PE (2 years) (7310 and 7311) Foreign Language (3 years) Computer Information Systems (6612) Design, Multimedia and Web Technologies (6630) Accounting(6320) Advanced Accounting (6321) Other Electives to Complement Pathway (Core Academic and CTE):	Keyboarding Applications (6152) IT Fundamentals (6670)	
SECONDARY	10	English 10 (1140) or Honors English 10 (1140)	Geometry (3143) or Algebra II (3135) Trigonometry/Probability and Statistics (3149)	Biology (4310) or Honors Biology (4310)	World History and Geography 1500 AD to present (2216)		Programming (6640)	
SECONDARY	11	English 11(1150) or Honors English 11 (1150)	Algebra II (3135) or Trigonometry/Probability and Statistics (3149)	Chemistry (4410) or Honors Chemistry (4410) or AP Biology (4370) or AP Chemistry (4470)	VA/US History (2360) or AP US History (2319)		Advanced Programming (6641) Database Design and Management (6660)	
SECONDARY	12	English 12 (1160) or World Literature (1515) or Honors English 12 (1160) or AP English Literature (1195) and Composition or Dual Enrollment College Composition I and II (DE 1600/1601)	Trigonometry/Probability and Statistics (3149) or Calculus (3178) or AP Calculus AB/BC (3177)	Contemporary Physics (4510) (or Principles of Technology I and II)(9811 / 9812) or AP Physics (4570) other science course	VA/US Government (2440) or AP Government and Politics (2445)		Advanced Database Design and Management (6661) Computer Science – Dual Enrollment (CSC 201)	
High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)								

List related certifications/credentials approved by VDOE and offered locally: http://www.cteresource.org/apg (Go to Certification – License Section)	Additional Learning Opportunities:
IC3 Global MOS Access, Word, PowerPoint 2010 Oracle NOCTI Computer Programming and Accounting	CTSO Organization(s): ☐ DECA ☒ FBLA ☐ FCCLA ☐ FFA ☐ FEA ☐ HOSA ☐ SkillsUSA ☐ TSA **Work-Based Learning:** ☒ Career Research ☐ Cooperative Education ☒ Internship ☒ Mentorship ☒ Job Shadowing ☐ Service Learning Project ☐ Student Apprenticeship
Postsecondary: Placement Assessments such as COMPASS & SAT II	College Entrance Exams such as ACT & SAT

POSTSECONDARY

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY
Individual plans must include locally agreed upon courses at the postsecondary level (See page 2)

Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree	Postgraduate Degree
Information Technology	Information Systems Technology	Computer Science	

College: Tidewater Community College **School Division(s):** _____

Postsecondary: Placement Assessments such as COMPASS & SAT II

POSTSECONDARY - COMMUNITY COLLEGE or APPRENTICESHIP - Determined Locally

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives			
POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.								
Year 1 1st Semester	College Composition I (ENG 111) or English Literature	College Algebra (MTH 158) or Pre-Calculus I (MTH 163)	College Chemistry I (CHM 111)	Principles of Psychology (PSY 200)	Introduction to Software Design (ITP 100)			
Year 1 2nd Semester	College Composition II (ENG 112) or English Literature	Pre-Calculus II (MTH 164)	General College Physics I (PHY 201)	Programming II (232)	Programming II (236)			
Year 2 1st Semester	Principles of Public Speaking (CST 100)	Calculus w/Analytical Geometry I (MTH 173) or Ordinary Differential Equations (MTH 279)	General College Physics II (PHY 202)	United States History I (HIS 121)	Concepts of Simulation (260) Applications of Modeling and Simulation (265)			

Year 2 2nd Semester	Technical Report Writing (ENG 131)	Applied Calculus (MTH 270)	General Biology (BIO 101)	Introduction to Sociology I (SOC 201) or Ethical and Legal Issues				

College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

Related Industry Certifications Available:

Additional Suggested Learning Opportunities:

Work-Based Learning:
☐ Cooperative Education ☐ Internship ☐ Mentorship
☐ Job Shadowing ☐ Service Learning Project ☐ Registered Apprenticeship

UNIVERSITY

University/College:
Degree or Major:
Number of Articulated CC Credits:

Notes:

Commonwealth of Virginia Plan of Study

Student Name: _____
School: Grassfield High School
Date: _____

Cluster: **Marketing** **Pathway:** Marketing Management

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses Source: Administrative Planning Guide http://www.cteresource.org/apg/	SAMPLE – Occupations Relating to This Pathway: http://www.doe.virginia.gov/instruction/career_technical/career_clusters/sample_plans_study/index.shtml http://www.careerclusters.org http://www.cteresource.org/cpg/
Graduation Requirements: http://www.doe.virginia.gov/instruction/graduation/index.shtml								Account Executive Accounts Payable Manager Administrative Services Manager Assistant Credit Manager Association Manager Billing Manager Business Development Manager Channel Sales Manager Client Relationship Manager Chief Executive Officer Entrepreneur Facilities Manager Franchisee General Manager Human Resource Manager Independent Distributor Key Account Manager Logistics Manager Management Analyst Manufacturing Manager Marketing Director Marketing Manager Marketing Specialist Meeting and Convention Planner Operations Manager Public Organization Manager Public Relations Manager Product/Brand Manager Purchasing Manager Risk Manager Shipping and Receiving Manager Small Business Owner
MIDDLE	7	English 7 (1115)	Mathematics 7 (3111)	Life Science 7 (4116)	Social Studies 7 (2356)		Introduction to Technology (8483)	
MIDDLE	8	English 8 (1123)	Mathematics 8 (3112) Algebra I (3130)	Physical Science 8 (4126)	Social Studies 8 (2106)	Foreign Language	Invention and Innovations (8461) or Technological Systems (8462)	
Career Assessment: Identify an appropriate career assessment instrument at the middle school level used to help students and their parents plan for high school: VA Wizard ☒ or other assessment (please indicate): 8th Grade Career planning module								
SECONDARY	9	English 9 (1130) or Honors English 9 (1130)	Algebra I (3130) Geometry (3143) or Algebra II (3135)	Earth Science (4210) or Honors Earth Science (4210)	World History and Geography to 1500 AD (2215)	Economics & Personal Finance (6120) Health & PE (2 years) (7310 and 7311) Foreign Language (3 years) Sports, Entertainment, and Recreation Marketing (8175) Advanced Sports, Entertainment, and Recreation Marketing (8177) Other Electives to Complement Pathway (Core Academic and CTE):	Entrepreneurship Education(9093)	
SECONDARY	10	English 10 (1140) or Honors English 10 (1140)	Geometry (3143) or Algebra II (3135)	Biology (4310) or Honors Biology (4310)	World History and Geography 1500 AD to present (2216)		Internet Marketing (8125)	
SECONDARY	11	English 11(1150) or Honors English 11 (1150)	Algebra II (3135) or Trigonometry/Probability and Statistics (3149)	Chemistry (4410) or Honors Chemistry (4410) or AP Biology (4370) or AP Chemistry (4470)	VA/US History (2360) or AP US History (2319)		Global Marketing and Commerce(8135)	
SECONDARY	12	English 12 (1160) or World Literature (1515) or Honors English 12 (1160) or AP English Literature (1195) and Composition or Dual Enrollment College Composition I and II (DE 1600/1601)	Trigonometry/Probability and Statistics (3149) or Calculus (3178) or AP Calculus AB/BC (3177)	Contemporary Physics (4510) (or Principles of Technology I and II)(9811 / 9812) or AP Physics (4570) other science course	VA/US Government (2440) or AP Government and Politics (2445)		Advanced Global Marketing and Commerce (8136) Leadership Development (9097) Introduction Marketing Management – Dual Enrollment (MKT 276)	
High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)								

List related certifications/credentials approved by VDOE and offered locally: http://www.cteresource.org/apg (Go to Certification – License Section)	Additional Learning Opportunities:
Work Place Readiness NRF Customer Service NRF Sales	CTSO Organization(s): ☒ DECA ☐ FBLA ☐ FCCLA ☐ FFA ☐ FEA ☐ HOSA ☐ SkillsUSA ☐ TSA **Work-Based Learning:** ☒ Career Research ☐ Cooperative Education ☒ Internship ☒ Mentorship ☒ Job Shadowing ☒ Service Learning Project ☐ Student Apprenticeship
Postsecondary: Placement Assessments such as COMPASS & SAT II	College Entrance Exams such as ACT & SAT

POSTSECONDARY

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY
Individual plans must include locally agreed upon courses at the postsecondary level (See page 2)

Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree	Postgraduate Degree
Management	Management	Marketing Management	

College: Tidewater Community College **School Division(s):** Chesapeake Public Schools

Postsecondary: Placement Assessments such as COMPASS & SAT II

POSTSECONDARY - COMMUNITY COLLEGE or APPRENTICESHIP - Determined Locally

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives			
POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.								
Year 1 1st Semester	College Composition I (ENG 111) or English Literature	College Algebra (MTH 158) or Pre-Calculus I (MTH 163)	College Chemistry I (CHM 111)	Principles of Psychology (PSY 200)	Organization, Development and Administration	Consumer Behavior		
Year 1 2nd Semester	College Composition II (ENG 112) or English Literature	Pre-Calculus II (MTH 164)	General College Physics I (PHY 201)	Global Issues	Marketing Management	Business Management and Supervision		
Year 2 1st Semester	Principles of Public Speaking (CST 100)	Calculus w/Analytical Geometry I (MTH 173) or Ordinary Differential Equations (MTH 279)	General College Physics II (PHY 202)	United States History I (HIS 121)	Financial Accounting	Managerial Accounting		

	Year 2 2nd Semester	Technical Report Writing (ENG 131)	Applied Calculus (MTH 270)	General Biology (BIO 101)	Introduction to Sociology I (SOC 201) or Ethical and Legal Issues	Continue Courses in the area of Specialization	Complete Management and Entrepreneurship major		

College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

Related Industry Certifications Available:

Additional Suggested Learning Opportunities:

Work-Based Learning:

☐ Cooperative Education ☐ Internship ☐ Mentorship
☐ Job Shadowing ☐ Service Learning Project ☐ Registered Apprenticeship

UNIVERSITY

University/College:
Degree or Major:
Number of Articulated CC Credits:

Notes:

Appendix H:

Planning Committee

Governor's STEM Academy

Planning Committee

Individual		Title/Organization
Lee	Belfore	ODU Engineering Professor
Carolyn	Bernard	Principal, Grassfield High School
Karen	Black	Technology Academy Coordinator
Anna	Helmer	Assistant Principal, Grassfield High School
Johnny	Moye	Chesapeake Public Schools, CTE Supervisor
Linda	Rice	Tidewater Community College Provost
Thomas	Spencer	Project Lead the Way Instructor, Grassfield High School
Ben	White	Operations Manager, City of Chesapeake Economic Development

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: Grassfield High School

Primary Contact

Name: Lee A. Belfore II

Title: Associate Professor

Address: Department of Electrical and Computer Engineering
Old Dominion University
Norfolk, VA 23529

Telephone: 757-683-3746 **Fax:** 757-683-3220

E-Mail: lbelfore@odu.edu

Type of Entity/Institution/Organization: Higher education institution.

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy.

Lee A. Belfore II	Lee Belfore
Print or Typed Name	Signature
Associate Professor	11/22/11
Position Title	Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: Grassfield High School, Chesapeake Virginia

Primary Contact

Name: Carolyn Bernard

Title: Principal

Address: 2007 Grizzly Trail

Chesapeake, Virginia 23323

Telephone: 757-558-4749 **Fax:** 757-558-9240

E-Mail: Carolyn.Bernard@cpschools.com

Type of Entity/Institution/Organization: Public School

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy.

Carolyn Bernard	Carolyn Bernard
Print or Typed Name	**Signature**
Grassfield High School Principal	11/1/11
Position Title	**Date**

Partner Identification Form

GOVERNOR'S STEM ACADEMY
Planning Committee

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: Grassfield High School, Chesapeake Virginia

Primary Contact

Name: Karen Black

Title: Technology Academy Coordinator

Address: 2007 Grizzly Trail

Chesapeake, Virginia 23323

Telephone: 757-558-4493 **Fax:** 757-558-9240

E-Mail: Karen.Black@cpschools.com

Type of Entity/Institution/Organization: Public School

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy.

Karen Black	Karen Black
Print or Typed Name	Signature
Technology Academy Coordinator	11/1/11
Position Title	Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: Grassfield High School

Primary Contact

Name: Anna Helmer

Title: Assistant Principal, GFHS

Address: 2007 Grizzly Trail

Chesapeake, VA 23323

Telephone: 757-558-4749 **Fax:**

E-Mail: Anna.helmer@cpschools.com

Type of Entity/Institution/Organization: 9-12 Public High School

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy.

Anna Helmer
Print or Typed Name

Anna Helmer
Signature

Assistant Principal
Position Title

11/14/2011
Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: Chesapeake Public School

Primary Contact

Name: Johnny J Moye

Title: Career and Technical Education Supervisor

Address: 304 Cedar Rd.

Chesapeake, VA 23322

Telephone: 757-547-1098 **Fax:** 757-547-1346

E-Mail: Johnny.moye@cpschools.com

Type of Entity/Institution/Organization: Public School Division

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy

Johnny J Moye
Print or Typed Name

Johnny J Moye
Signature

Career and Technical Education Supervisor
Position Title

Nov 15, 2011
Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: Tidewater Community College, Chesapeake Campus

Primary Contact

Name: Linda M. Rice, PhD

Title: Provost

Address: 1428 Cedar Road

Chesapeake, VA 23322

Telephone: (757) 822-5202 **Fax:** (757) 822-5203

E-Mail: lrice@tcc.edu

Type of Entity/Institution/Organization: Education

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy.

Linda M. Rice
Print or Typed Name

Linda M. Rice
Signature

Provost
Position Title

11/21/11
Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization:	Chesapeake Public Schools - Grassfield High School / Technology Academy

Primary Contact

Name: Mr. Thomas Spencer

Title: Pre-Engineering Academy Instructor

Address: 2007 Grizzly Trail

Chesapeake, VA 23323

Telephone: (757) 558-4749 Fax: (757) 558-9240

E-Mail: thomas.spencer@cpschools.com

Type of Entity/Institution/Organization:	Public Secondary School / High School / Technology Academy

My signature below certifies that my institution/organization agrees to be a partner in planning and implementation of the proposed Governor's STEM Academy.

Thomas C. Spencer	[signature]
Print or Typed Name	Signature
Pre-Engineering Academy Instructor	11/11/2011
Position Title	Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: City of Chesapeake Economic Development Dept

Primary Contact

Name: Ben White

Title: Operations Manager, Economic Development

Address: 676 Independence Parkway, Ste 200
Chesapeake VA 23320

Telephone: (757) 382-8040 **Fax:** (757) 382-8050

E-Mail: bwhite@cityofchesapeake.net

Type of Entity/Institution/Organization: Local Government

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy.

Ben White
Print or Typed Name

Operations Manager
Position Title

Signature

10/25/11
Date

Appendix I:

Partnership/Advisory

Committee

Governor's STEM Academy

Partnership/Advisory Committee

Individual		Title/Organization
Bob	Banach	Director of Operations - D.T. Read Steel Co. Inc.
Brandon	Berry	Project Lead the Way Instructor, Grassfield High School
Karen	Black	Technology Academy Coordinator, Grassfield High School
Johnna	Coleman-Yates	Director of Workforces Services, Tidewater Community College
Anna	Helmer	Assistant Principal, Grassfield High School
Johnny	Moye	Chesapeake Public School, CTE Supervisor
Jennifer	Pettway	Career Counselor, Grassfield High School
Steve	Notarnicola	Principal Systems Engineer, Lockheed Martin Corporation
Remy	Pangle	Director of Education and Outreach, Wind for Schools State Facilitator James Madison University
Valerie	Roberts	Academy Oracle Instructor, Grassfield High School
Kim	Stanley	Vocational Evaluator, Chesapeake Public Schools
Ben	White	Operations Manager, City of Chesapeake Economic Development
Daniel	Yuchnovicz	Systems Engineer, NASA

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: [illegible]

Primary Contact

Name: [illegible]

Title: [illegible]

Address: [illegible]

[illegible]

Telephone: [illegible] **Fax:** [illegible]

E-Mail: [illegible]

Type of Entity/Institution/Organization: [illegible]

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's Career and Technical Academy outlined in the accompanying proposal:

[illegible] [illegible]

Print or Typed Name **Signature**

[illegible] [illegible]

Position Title **Date**

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: Grassfield High School Technology Academy

Primary Contact

Name: Brandon Berry

Title: Technology Academy Instructor

Address: Grassfield High School

2007 Grizzly Trail

Chesapeake, Virginia 23323

Telephone: 757-558-4749 **Fax:** 757-558-9240

E-Mail: Brandon.berry@cpschools.com

Type of Entity/Institution/Organization: Public School

My signature below certifies that my institution organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy.

Brandon Berry	
Print or Typed Name	Signature
Teacher	11/15/2011
Position Title	Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Partnership/Advisory Committee

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: Grassfield High School, Chesapeake Virginia

Primary Contact

Name: Karen Black

Title: Technology Academy Coordinator

Address: 2007 Grizzly Trail

Chesapeake, Virginia 23323

Telephone: 757-558-4493 **Fax:** 757-558-9240

E-Mail: Karen.Black@cpsschools.com

Type of Entity/Institution/Organization: Public School

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposal Governor's STEM Academy.

Karen Black

Karen Black
Print or Typed Name

Signature

Technology Academy Coordinator
Position Title

11/1/11
Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: **Tidewater Community College Workforce Development**

Primary Contact

Name: **Johnna Coleman-Yates**

Title: **Director of Workforce Services**

Address: **Tidewater Community College Workforce Development**
7000 College Drive
Suffolk, VA 23435

Telephone: **757-822-1234** **Fax:** **757-822-1160**

E-Mail: **jyates@tcc.edu**

Type of Entity/Institution/Organization: _____

My signature below certifies that my institution/organization agrees to allow me to serve as an active partner in planning and implementation of the proposed Governor's STEM Academy.

Johnna Coleman-Yates
Print or Typed Name

Signature

Director of Workforce Services
Position Title

3/12/12
Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: Grassfield High School

Primary Contact

Name: Anna Helmer

Title: Assistant Principal, GFHS

Address: 2007 Grizzly Trail

Chesapeake, VA 23323

Telephone: 757-558-4749 **Fax:**

E-Mail: Anna.helmer@cpschools.com

Type of Entity/Institution/Organization: 9-12 Public High School

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy.

Anna Helmer
Print or Typed Name

Anna Helmer
Signature

Assistant Principal
Position Title

11/14/2011
Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: Chesapeake Public School

Primary Contact

Name: Johnny J Moye

Title: Career and Technical Education Supervisor

Address: 304 Cedar Rd.

Chesapeake, VA 23322

Telephone: 757-547-1098 **Fax:** 757-547-1346

E-Mail: Johnny.moye@cpschools.com

Type of Entity/Institution/Organization: Public School Division

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy

Johnny J Moye
Print or Typed Name

Johnny J Moye
Signature

Career and Technical Education Supervisor
Position Title

Nov 15, 2011
Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: Grassfield High School
Chesapeake Public Schools

Primary Contact Mrs. Karen Black

Name: Mrs. Jennifer R. Pettway

Title: Career Counselor

Address: 2007 Grizzly Trail, Chesapeake, VA 23323

Telephone: 757.558.4509 **Fax:** 757.558.9259

E-Mail: jennifer.pettway@cpschools.com

Type of Entity/Institution/Organization: Public School

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy.

Jennifer R. Pettway
Print or Typed Name

Jennifer R. Pettway
Signature

Career Counselor
Position Title

November 15, 2011
Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: GRASSFIELD HIGH SCHOOL

Primary Contact

Name: Steve Notarnicola

Title: Principal Systems Engineer (Operations Research)

Address: 7021 Harbour View Blvd

Suite 105

Suffolk, VA 23435

Telephone: 757-935-9503 Fax: 757-935-9329

E-Mail: Steve.notarnicola@lmco.com

Type of Entity/Institution/Organization: Lockheed Martin Corporation Center for Innovation

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy.

J. Stephen Notarnicola
Print or Typed Name

Signature

Principal Systems Engineer
Position Title

11/28/2011
Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: Virginia Center for Wind Energy at James Madison University

Primary Contact

Name: Remy Pangle

Title: Director of Education and Outreach, Wind for Schools State Facilitator

Address: 14 01 Technology Dr, Suite 120

MSC 4905

Harrisonburg, VA 22801

Telephone: 540-568-8768 **Fax:** 540-568-2761

E-Mail: panglerm@jmu.edu

Type of Entity/Institution/Organization: Academic

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy.

Remy Pangle	Remy Pangle
Print or Typed Name	Signature
Director of Education and Outreach	3/9/12
Position Title	Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: Grassfield High School Technology Academy

Primary Contact

Name: Valerie Roberts

Title: Academy Teacher

Address: 2007 Grizzly Trail

Chesapeake, VA 23322

Telephone: 757-560-3295 **Fax:** 757-558-9240

E-Mail: Valerie.roberts@cpschools.com

Type of Entity/Institution/Organization: Public School

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy.

Valerie P Roberts
Print or Typed Name

Teacher
Position Title

Signature

11/15/11
Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: Chesapeake Public Schools

Primary Contact

Name: Kim Stanley

Title: Vocational Evaluator

Address: 304 Cedar Road

Chesapeake, VA 23322

Telephone: 757-547-1098 **Fax:** 757-547-1346

E-Mail: Kim.Stanley@cpschools.com

Type of Entity/Institution/Organization: Public School System

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy.

Kim Stanley
Print or Typed Name

Kim Stanley
Signature

Vocational Evaluator
Position Title

11/15/11
Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School Division/Institution/Organization: City of Chesapeake Economic Development Dept

Primary Contact

Name: Ben White

Title: Operations Manager, Economic Development

Address: 676 Independence Parkway, Ste 200
Chesapeake VA 23320

Telephone: (757) 382-8040 **Fax:** (757) 382-8050

E-Mail: bwhite@cityofchesapeake.net

Type of Entity/Institution/Organization: Local Government

My signature below certifies that my institution/organization agrees to be an active partner in planning and implementation of the proposed Governor's STEM Academy

Ben White
Print or Typed Name

Operations Manager
Position Title

Signature

10/25/11
Date

Partner Identification Form

GOVERNOR'S STEM ACADEMY

Include a Partnership Identification Form for each of the partner institutions/organizations participating in this proposal.

Partner School
Division/Institution/Organization: Grass Field High School Technology Academy

Primary Contact

Name: Daniel Yuchnovicz

Title: Systems Engineer, Aerospace Systems Technology Management

Address: 11 Langley Blvd.

M/S 112

Hampton, VA 23681

Telephone: (757) 864-7272 Fax:

E-Mail: daniel.e.yuchnovicz@nasa.gov

Type of
Entity/Institution/Organization: National Aeronautics and Space Administration

My signature below certifies that my institution organization agrees to allow me to serve as an active partner in planning and implementation of the proposed Governor's STEM Academy.

Daniel Yuchnovicz
Print or Typed Name

Signature

Systems Engineer, AST Management
Position Title

11-14-2011
Date

Appendix J:

Memoranda of Agreement

MEMORANDUM OF AGREEMENT
BETWEEN PARTNERS
AND THE GRASSFIELD HIGH SCHOOL GOVERNOR'S STEM ACADEMY

"Inspiring excellence through an advanced Science, Technology, Engineering, and Mathematics (STEM) curriculum to better meet the workforce needs of the 21st Century"

PARTNERS AND THE GRASSFIELD HIGH SCHOOL TECHNOLOGY ACADEMY agrees to enter into this Agreement to support the Technology Academy STEM program. The Technology Academy will provide enhance opportunities in the areas of Information Technology, Entrepreneurship Technology, and STEM Pre-Engineering Technology preparing participants for the 21st century work place, advanced technical training or entrance into college or university studies. A focus of the program will be to increase opportunities for internships in STEM related fields and other fields of innovation based upon workforce needs of the region.

MOA TIMEFRAME:

The MEMORADUM OF AGREEMENT period shall be March, 2012 through June 30, 2013 and will be extended annually unless modified or terminated by a partner.

PARTNERS' AGREEMENTS:

Grassfield High School Technology Academy agrees to:

- Facilitate the Technology Academy Partnership Team
- Provide and monitor comprehensive programs of studies in the Information Technology, Entrepreneurship Technology, and STEM Pre-Engineering Technology concentrations
- Assure that curriculum is aligned with career pathways that meet the requirements for the Governor's Exemplary Standard Award Program, Workplace Readiness Skills for the Commonwealth of Virginia, and Virginia Technical or Advanced Technical Diploma
- Facilitate the administration of industry certifications exams
- Deliver counseling and other services that promote STEM education, career pathways, educational advancement and employment opportunities
- Provide documentation and information as requested by the Department of Education
- Provide the appropriate materials to support and facilitate instruction

Postsecondary Education Partners and Business Partners agree to (one or more of the following):

- Designate an individual to serve as a liaison on the Technology Academy Partnership Team
- Provide resources and opportunities for Technology Academy students to receive real world experiences through project-based learning, field trips, guest speakers, job-shadowing, internships, and mentorships
- Provide guidance and expertise to staff and/or students to promote STEM related teaching and learning
- Provide Opportunities for Dual Enrollment and transferable college credit (if applicable)

By signing this agreement both institutions agree to be active partners and agree to abide by this agreement.

Grassfield High School and Technology Academy	**PARTNER**
Ham Black	3/12/12
Technology Academy Coordinator	Date
LEE A BELFORE II	Associate Professor
Partner Signature	Title
Old Dominion University	3/16/12
Organization	Date

MEMORANDUM OF AGREEMENT

BETWEEN PARTNERS

AND THE GRASSFIELD HIGH SCHOOL GOVERNOR'S STEM ACADEMY

"Inspiring excellence through an advanced Science, Technology, Engineering, and Mathematics (STEM) curriculum to better meet the workforce needs of the 21st Century"

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- Assure that curriculum is aligned with career pathways that meet the requirements for the Governor's Exemplary Standard Award Program, Workplace Readiness Skills for the Commonwealth of Virginia, and Virginia Technical or Advanced Technical Diploma
- Facilitate the administration of industry certifications exams
- Deliver counseling and other services that promote STEM education, career pathways, educational advancement and employment opportunities
- Provide documentation and information as requested by the Department of Education
- Provide the appropriate materials to support and facilitate instruction

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- Designate an individual to serve as a liaison on the Technology Academy Partnership Team
- Provide resources and opportunities for Technology Academy students to receive real world experiences through project-based learning, field trips, guest speakers, job-shadowing, internships, and mentorships
- Provide guidance and expertise to staff and/or students to promote STEM related teaching and learning
- Provide Opportunities for Dual Enrollment and transferable college credit (if applicable)

By signing this agreement both institutions agree to be active partners and agree to abide by this agreement.

Grassfield High School and Technology Academy	**PARTNER**
Kam Black	3/12/12
Technology Academy Coordinator	Date
[illegible]	Director of Operations
Partner Signature	Title
D.T. Read Steel Co, Inc	3-12-2012
Organization	Date

MEMORANDUM OF AGREEMENT

BETWEEN PARTNERS

AND THE GRASSFIELD HIGH SCHOOL GOVERNOR'S STEM ACADEMY

"Inspiring excellence through an advanced Science, Technology, Engineering, and Mathematics (STEM) curriculum to better meet the workforce needs of the 21st Century"

PARTNERS AND THE GRASSFIELD HIGH SCHOOL TECHNOLOGY ACADEMY agrees to enter into this Agreement to support the Technology Academy STEM program. The Technology Academy will provide enhance opportunities in the areas of Information Technology, Entrepreneurship Technology, and STEM Pre-Engineering Technology preparing participants for the 21st century work place, advanced technical training or entrance into college or university studies. A focus of the program will be to increase opportunities for internships in STEM related fields and other fields of innovation based upon workforce needs of the region.

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- Provide and monitor comprehensive programs of studies in the Information Technology, Entrepreneurship Technology, and STEM Pre-Engineering Technology concentrations
- Assure that curriculum is aligned with career pathways that meet the requirements for the Governor's Exemplary Standard Award Program, Workplace Readiness Skills for the Commonwealth of Virginia, and Virginia Technical or Advanced Technical Diploma
- Facilitate the administration of industry certifications exams
- Deliver counseling and other services that promote STEM education, career pathways, educational advancement and employment opportunities
- Provide documentation and information as requested by the Department of Education
- Provide the appropriate materials to support and facilitate instruction

Postsecondary Education Partners and Business Partners agree to (one or more of the following):

- Designate an individual to serve as a liaison on the Technology Academy Partnership Team
- Provide resources and opportunities for Technology Academy students to receive real world experiences through project-based learning, field trips, guest speakers, job-shadowing, internships, and mentorships
- Provide guidance and expertise to staff and/or students to promote STEM related teaching and learning
- Provide Opportunities for Dual Enrollment and transferable college credit (if applicable)

By signing this agreement both institutions agree to be active partners and agree to abide by this agreement.

Grassfield High School and Technology Academy	**PARTNER**
Kam Black	3/12/12
Technology Academy Coordinator	Date
	_Systems Engineer Principal_____
Partner Signature	Title
_Lockheed Martin Center for Innovation_____	_15 March 2012_____
Organization	Date

MEMORANDUM OF AGREEMENT

BETWEEN PARTNERS

AND THE GRASSFIELD HIGH SCHOOL GOVERNORS STEM ACADEMY

"Inspiring excellence through an advanced Science, Technology, Engineering, and Mathematics (STEM) curriculum to better meet the workforce needs of the 21st Century"

PARTNERS AND THE GRASSFIELD HIGH SCHOOL TECHNOLOGY ACADEMY agrees to enter into this Agreement to support the Technology Academy STEM program. The Technology Academy will provide enhance opportunities in the areas of Information Technology, Entrepreneurship Technology, and STEM Pre-Engineering Technology preparing participants for the 21st century work place, advanced technical training or entrance into college or university studies. A focus of the program will be to increase opportunities for internships in STEM related fields and other fields of innovation based upon workforce needs of the region.

MOA TIMEFRAME:

The MEMORADUM OF AGREEMENT period shall be March, 2012 through June 30, 2013 and will be extended annually unless modified or terminated by a partner.

PARTNERS' AGREEMENTS:

Grassfield High School Technology Academy agrees to:

- Facilitate the Technology Academy Partnership Team
- Provide and monitor comprehensive programs of studies in the Information Technology, Entrepreneurship Technology, and STEM Pre-Engineering Technology concentrations
- Assure that curriculum is aligned with career pathways that meet the requirements for the Governor's Exemplary Standard Award Program, Workplace Readiness Skills for the Commonwealth of Virginia, and Virginia Technical or Advanced Technical Diploma
- Facilitate the administration of industry certifications exams
- Deliver counseling and other services that promote STEM education, career pathways, educational advancement and employment opportunities
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Grassfield High School and Technology Academy **PARTNER**

Kam Black 3/12/12

Technology Academy Coordinator Date

Assoc. Vice President

Partner Signature Title

Tidewater Community College, WFD 3/12/12

Organization Date

MEMORANDUM OF AGREEMENT

BETWEEN PARTNERS

AND THE GRASSFIELD HIGH SCHOOL GOVERNOR'S STEM ACADEMY

"Inspiring excellence through an advanced Science, Technology, Engineering, and Mathematics (STEM) curriculum to better meet the workforce needs of the 21st Century"

PARTNERS AND THE GRASSFIELD HIGH SCHOOL TECHNOLOGY ACADEMY agrees to enter into this Agreement to support the Technology Academy STEM program. The Technology Academy will provide enhance opportunities in the areas of Information Technology, Entrepreneurship Technology, and STEM Pre-Engineering Technology preparing participants for the 21st century work place, advanced technical training or entrance into college or university studies. A focus of the program will be to increase opportunities for internships in STEM related fields and other fields of innovation based upon workforce needs of the region.

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Grassfield High School and Technology Academy **PARTNER**

Kam Black 3/12/12

Technology Academy Coordinator **Date**

John D. Hulvey 3/13/2012

Partner Signature Date

John D. Hulvey, CRA, Director – Sponsored Programs Administration & Accounting

Organization

James Madison University

MEMORANDUM OF AGREEMENT

BETWEEN PARTNERS

AND THE GRASSFIELD HIGH SCHOOL GOVERNOR'S STEM ACADEMY

"Inspiring excellence through an advanced Science, Technology, Engineering, and Mathematics (STEM) curriculum to better meet the workforce needs of the 21st Century"

PARTNERS AND THE GRASSFIELD HIGH SCHOOL TECHNOLOGY ACADEMY agrees to enter into this Agreement to support the Technology Academy STEM program. The Technology Academy will provide enhance opportunities in the areas of Information Technology, Entrepreneurship Technology, and STEM Pre-Engineering Technology preparing participants for the 21st century work place, advanced technical training or entrance into college or university studies. A focus of the program will be to increase opportunities for internships in STEM related fields and other fields of innovation based upon workforce needs of the region.

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By signing this agreement both institutions agree to be active partners and agree to abide by this agreement.

Grassfield High School and Technology Academy **PARTNER**

Ann Black

Technology Academy Coordinator

3/12/12

Date

BENTON M. WHITE, JR.

Partner Signature

ASSISTANT DIRECTOR

Title

CITY OF CHESAPEAKE ECONOMIC DEVELOPMENT

Organization

3/15/12

Date

Appendix K:

Statement of Assurances

The Grassfield High School Governor's STEM Academy
Chesapeake Public Schools

STATE OF OPERATING FUNDS AND FACILITIES
ASSURANCE

The authorized signature on this page certifies to the Virginia Department of Education that the authorized official assures that:

1. Operating funds and facilities are available to support the Governor's STEM Academy.
2. Materials and equipment will be provided to adequately support the needs of Grassfield High School Governor's STEM Academy.

Certification by Authorized Institutional Official

The applicant certifies that to the best of his knowledge, the information in this application is correct, that the filing of this application is authorized by the partners participating in the process to establish a Governor's STEM Academy, and that the applicant will comply with the above statement of assurances.

JAMES T. ROBERTS — SUPERINTENDENT
Printed Name of Authorized Official — Title

James T Roberts — 3/26/12
Signature of Authorized Official — Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

STATEMENT OF ASSURANCES

The authorized signature on this page certifies to the Virginia Department of Education that the authorized official assures that:

1. The planning committee has reviewed the provisions of *Administrative Procedures Guide for the Establishment of Governor's STEM Academies* outlined in the Guidance Manual, and understands that an implementation proposal will need to address these criteria and/or others approved by the Virginia Board of Education.

2. The planning committee agrees to follow the guidelines set forth in the *Administrative Procedures* Guide for the Establishment of Governor's STEM Academy's document.

3. If the Governor's STEM Academy will be a jointly operated program, an ongoing governing board will be established or maintained to reflect current Board of Education regulations relative to jointly operated schools and programs.

4. A public, government entity will serve as the grant fiscal agent.

Certification by Authorized or Institutional Official:

The applicant certifies that to the best of his/her knowledge the information in this application is correct, that the filing of this application is duly authorized by the partners participating in this process to establish a Governor's STEM Academy, and that the applicant will comply with the statements of assurances.

JAMES T. ROBERTS	SUPERINTENDENT
Typed or Printed Name of Authorized Official	Title Chesapeake Public Schools
James T. Roberts	11/18/11
Signature of Authorized Official	Date

Appendix L:

Budget

GOVERNOR'S STEM ACADEMY BUDGET				
Line Item	State	Perkins	Other/Local	In-Kind
1) Personnel - 1000			432,504	
2) Employment Benefits - 2000			155,300	
3) Purchased/Contractual Services - 3000				
4) Internal Services - 4000				
5) Staff Development - 5000		1,500		
6) Summer Component Activities - 5000	5000			
7) Travel - 5000		6,000		
8) Contractual Services - 5000				
9) Materials and Supplies - 6000			5,850	
10) Equipment - 8000		29,300		
11) Facilities - 8000				
B) Indirect Cost				

Appendix M:

Certificate of Coverage

CERTIFICATE OF COVERAGE

Rev 07/2008

Producer:
VML INSURANCE PROGRAMS
P.O. Box 2120, Glen Allen, VA 23058
1-800-833-2002 (Phone), 1-804-863-1658 (Fax)
www.vmlins.org

This Certificate is issued as a matter of information only and confers no rights upon the Certificate Holder. This Certificate does not amend, extend or alter the Member's Agreement (Contract) by the policies below and/or any other Insurance Program.

COMPANIES AFFORDING COVERAGE

VML Insurance Programs

Named Insured:
Chesapeake City Schools
P.O. Box 16495
Chesapeake, VA 23325

COVERAGE

This is to certify that the coverage listed below has been issued to the Member named above for the policy period indicated, notwithstanding any requirement, term or condition of any contract or other document with respect to which this Certificate may be issued or may pertain, the coverage afforded by the policies described herein is subject to all the terms, exclusions and conditions of the Member Agreement and the policy terms. Limits shown may have been reduced by paid claims.

Type of Coverage	Policy Number	Effective Date	Expiration Date	Terms	
General Liability Damage to Premises Rented to You Medical Payments	[illegible]	07/01/2011	07/01/2012	Each Occurrence	$1,000,000
				Any One Fire	$1,000,000
				Any One Person	$10,000 includes students
Excess Liability	[illegible]	07/01/2011	07/01/2012	Per Occurrence	$10,000,000

Description of Operations/Locations/Vehicles/Special Items

Evidence of Coverage for the Technology Engineering and Mathematics (STEM) Program for Grassfield High School students (Jan) year 2011-2012

CERTIFICATE HOLDER
VJOB Career & Tech Ed Serv Office
ATTN: George Wilcox
PO Box 2120
Richmond, VA 23218

CANCELLATION: Should the above described Member Agreement be cancelled before the expiration date thereof, VML Insurance Programs will endeavor to mail written notice within 30 days to the Certificate Holder named to the left, but failure to mail such notice shall impose no obligation of any kind upon VML Insurance Programs, its agents or representatives.

By: *Crystal Griffin* Date: 07/29/2012

Appendix N:

Staff Evaluation

Staff Evaluation

The staff evaluation is derived from the following components:

- ✓ **Classroom Observation** - This component consists of at least three written observations and subsequent conferences during the year. Deadline for these are November 15, February 15, and May 15. Observers will be looking for criteria items listed on the teacher evaluation instrument. At the time of your observation, please present the following materials to the evaluator:
    - Instructional binder with daily lesson plans
    - GradeQuick grades
    - GradeQuick attendance
    - Assessment folder
    - Parent communication log

- ✓ **Instructional Binder with Daily Lesson Plans** - In the binder issued to every teacher, maintain up-to-date lesson plans using the approved lesson plan format. The binders contain blank lesson plan forms and a sample lesson plan. Binders should also include SOL curriculum frameworks, course pacing guides, and SOL Blueprints (core teachers). Lesson plans should be specific enough for the reviewer to determine the SOL lesson objective and identified essential knowledge/skill, the student activities planned, the resources needed, and the student assessment used.

- ✓ **Review of Grade and Attendance GradeQuick Reports** - GradeQuick grade and attendance printouts will serve as the official grade book; therefore, teachers will need to maintain all end of marking period printouts in a folder. Folders will be collected at the end of each course (January and June). The Assistant Principal for Instruction will conduct periodic audits of teacher grade books and attendance records in GradeQuick. Repeated failure to submit weekly grades and daily attendance to Edline will result in below expectation or unsatisfactory marks on the professionalism evaluation criteria.

- ✓ **Parent Communication Log** - Teachers should contact parents when a significant change occurs in a student's performance. In addition, when parents request increased communication from the teacher regarding student progress, the teacher is expected to honor these requests. Everyone should be making "proud phone calls" to positively reinforce student progress. Attendance at parent conferences is a priority. Teachers should always maintain professional demeanor during conferences, phone calls, and via e-mail correspondence.

- ✓ **Assessment Folder** - Teachers are asked to maintain printed copies of all assessments administered to students in each course. Administrators will monitor the assessments to check for alignment with curriculum and instruction, appropriate content and cognitive level, and a variety of item modalities. In addition, teachers are required to utilize assessment data (i.e., benchmark data, SOL scores, AP scores,

certification testing, skill checklists) to inform instructional decisions and implement strategies that address low reporting categories. Evidence of data-driven decision-making should be maintained in the instructional binder.

IEP and 504 Plans - All teachers will maintain confidential information regarding students with IEPs and 504 plans. Compliance with the plan goals, objectives, and accommodations is required. Special education teachers are required to ensure all protocol is followed and

- ✓ documentation is completed accurately and within the timelines of special education law. Special education teachers and general education teachers will communicate throughout the semester to monitor student progress and ensure IEP compliance.

- ✓ **Substitute Plans** - Up-to-date, relevant substitute plans must be available on the day of the absence prior to the start of the school day. Plans must be of sufficient length to maintain students engaged during the entire ninety-minute block. Teachers are also asked to keep in their classrooms emergency lesson plans.

- ✓ **Administrative Records** - Many criteria items included on the evaluation instrument cannot be observed through the above items. Each administrator will maintain records that fall under his/her duties. Many of the items under the professionalism section will be determined in this manner. Refer to the teacher evaluation instrument for a list of these criteria.

- ✓ **Performance Goals Instrument** - Performance goals are teacher oriented behaviors--goals designed to improve instruction. Each individual being evaluated will select 2-3 goals to focus on for the year. Goals may come directly from the established evaluation criteria. A copy of your Performance Goals Instrument is due by October 15 to your evaluating administrator and will be discussed at each post-observation conference.

Checklist for Teachers Who are Evaluated

GradeQuick Reports

_____All entries are printed clearly

_____Information page in front complete

_____Classes labeled according to GradeQuick directions

_____Grade columns are identified with assignments and dates

_____At least nine graded assignments are recorded each marking period

_____Grades are from a variety of activities

_____Grade weights follow department guidelines and are indicated

_____GradeQuick reports are printed each marking period and kept in a folder

_____Summary page of the 4 quarter grades, final exam and final grade is included

_____Grades are kept up-to-date and entered in GradeQuick at least once a week.

Attendance Records

____All entries are clearly recorded

____Absences are clearly identified

____Cuts are marked

____Tardies are marked

____Attendance is entered in GradeQuick every block

____Bubble sheets are up-to-date and sent to the parent on time

Instructional Binder

Daily plans are kept using approved lesson plan and include:

____Virginia Standards of Learning

____Chesapeake Curriculum Guides

____State Curriculum Framework (SOL Essential Knowledge and Skills)

____SOL Blueprints

____Activities and resources used

____Varied activities

____Research Based Instructional Strategies

____Assessment/evaluation of students' learning at the appropriate cognitive level

Assessment Folder

____Contains a variety of types of student assessments/ evaluations congruent with the established curriculum

Parent Communication Log

List of parental contacts includes dates and topics discussed

Special Education Documentation

IEP and 504 Plan accommodation pages

Chesapeake Public Schools

Lesson Planning Model

1. Standards of Learning/CPS Curriculum Objectives	Identify the objectives (SOL) to be taught and refer to the Chesapeake Public Schools (CPS) Curriculum Objectives to begin planning for delivery and assessment of the lesson. Use the Curriculum Framework for each subject to determine the "essential knowledge" strands to be taught. *What must the student know and be able to do?*
2. Essential Vocabulary	Identify the content related words and terms that students must know and apply in order to attain the essential knowledge being taught.
3. Literacy Strategy	Identify and include appropriate strategy to improve student comprehension of text.
4. Materials/Resources	List materials and resources (including technology) that will be used to teach the lesson.
5. Anticipatory Set	Decide what must be done to focus the attention of students on the concepts they will be studying. Activate prior knowledge, build background, and set the purpose for the instruction being delivered.
6. Direct Teaching	Refer to the Curriculum Resource Guide to determine strategies and resources to access when presenting/explaining the objectives to be taught. Use a variety of methods to deliver instruction that meet the diverse needs of the learners. Teach concepts by demonstrating, giving examples, and modeling procedures.
7. Guided Practice/Checking for Understanding	Facilitate learning by guiding students through means of direct monitoring and conferencing while providing feedback and support. Check for understanding through formal/informal means. Use feedback from students to monitor learning and adjust instruction as needed. Students may be grouped in a variety of ways for practice.
8. Independent Practice	Choose appropriate assignments for classwork/homework, which students can practice independently. Provide feedback in a timely manner.
9. Closure	Have students summarize, or lead a brief discussion of information learned related to the lesson's objectives.

10. Homework	Homework is an important component in the learning process. It extends the time in which formal learning can take place. The basic objective of homework is the reinforcement and application of concepts, principles, and skills that have been taught and learned in the classroom. Correctly monitored, it gives students an opportunity to learn how to work independently and how to be accountable.
11. Assessment Evidence	Select assessments that are aligned to the written and taught curriculum. Written assessments can be teacher-made, curriculum-based or standardized and should be previewed by the teacher before the lesson is taught. Other assessments may include performance tasks, projects, quizzes, anecdotal records, and academic prompts. Assess student work in a timely manner and use results in planning for re-teaching or extended teaching.
12. Bloom's Taxonomy	Identify the level(s) of cognition that will be addressed during the instructional session(s).
13. Research Strategies	Select the instructional strategies that will enhance learning of the concepts and skills being taught. Consider the learning styles of the students. Strategies may include, but are not limited to, those researched by Marzano, Pickering, and Pollack.
14. Reflection	Reflect on the lesson taught and note overall effectiveness of the instruction and assessment. Elicit comments from students when appropriate. Use reflection to guide re-teaching and re-assessment of student learning.

Grassfield High School
LESSON PLAN

Date(s):	**Subject:**	**Teacher:**
SOL/CCO:	**Grade:**	**Estimated Time:**
Objectives: (Essential Knowledge)		
Essential Vocabulary:		
Literacy Strategy:		
Materials/Resource: (Optional)		
Anticipatory Set:		
Direct Teaching:		
Guided Practice/Checking for Understanding:		
Independent Practice:		
Closure:		

Homework:
Assessment Evidence: (ex. Notebook check, project, oral presentation, check for understanding..)

1. IDENTIFY THE LEVEL OF BLOOM'S TAXONOMY USED

Knowledge Comprehension Application Analysis Synthesis Evaluation

2. IDENTIFY THE RESEARCH-BASED STRATEGIES USED

Similarities and Differences

Homework and Practice

Cooperative Learning

Reinforcing Effort and Providing Recognition

Generating and Testing Hypothesis

Fishbowls

Setting Objectives and Providing Feedback

Cornell Notes

Socratic Seminar

Clues, Questions, and Advance Organizers

Summarizing and Note Taking

Nonlinguistic Representations

Technology Integration

Differentiated Instruction

Virginia Board of Education Agenda Item

Agenda Item: O **Date:** April 26, 2012

Title	First Review of Revisions of Industry, Professional, or Trade Association Certification Examinations and Occupational Competency Assessments to Meet the Requirements for the Board of Education's Career and Technical Education and Advanced Mathematics and Technology Seals and the Student-Selected Verified Credit		
Presenter	Lan Neugent, Assistant Superintendent for Technology, Career and Adult Education		
E-mail	lan.neugent@doe.virginia.gov	**Phone**	804-225-2757

Purpose of Presentation:
Action required by Board of Education regulation.

Previous Review or Action:
Other. Specify below:
Previous Reviews:
September 28, 2000; April 26, 2001; April 24 & 25, 2002; May 28, 2003; June 25, 2003; February 25, 2004; February 23, 2005; November 30, 2005; November 29, 2006; January 10, 2008; January 15, 2009; January 14, 2010; and February 17, 2011.
Action to the above: Additions and/or deletions were made to the list of board-approved examinations, assessments, and licensures.

Action Requested:
Action will be requested at a future meeting. Specify anticipated date below:
May 24, 2012

Alignment with Board of Education Goals: Please indicate (X) all that apply:

	Goal 1: Expanded Opportunities to Learn
x	Goal 2: Accountability of Student Learning
	Goal 3: Nurturing Young Learners
	Goal 4: Strong Literacy and Mathematics Skills
	Goal 5: Highly Qualified and Effective Teachers and Administrators
	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify:

Background Information and Statutory Authority:

Goal 2: Secondary students who complete rigorous and relevant CTE programs gain the knowledge and skills needed to earn industry-recognized, in-demand credentials that lead to success in college and careers.

The *Regulations Establishing Standards for Accrediting Public Schools in Virginia*, requirements for graduation 8 VAC 20-131-50.I.3, provide students who demonstrate academic excellence and/or outstanding achievement the opportunity to earn the Board of Education's Career and Technical Education Seal.

8 VAC 20-131-50.K.3 - "The Board of Education's Career and Technical Education Seal will be awarded to students who earn a Standard or Advanced Studies Diploma and complete a prescribed sequence of courses in a career and technical education concentration or specialization that they choose and maintain a "B" or better average in those courses; or (i) pass an examination or occupational competency assessment in a career and technical education concentration or specialization that confers certification or an occupational competency credential from a recognized industry, trade or professional association or (ii) acquire a professional license in that career and technical education field from the Commonwealth of Virginia. The Board shall approve all professional licenses and examinations used to satisfy these requirements."

The *Regulations Establishing Standards for Accrediting Public Schools in Virginia*, requirements for graduation 8 VAC 20-131-50.I.4, provide students who demonstrate academic excellence and/or outstanding achievement the opportunity to earn the Board of Education's Seal of Advanced Mathematics and Technology.

8 VAC 20-131-50.K.4 – "The Board of Education's Seal of Advanced Mathematics and Technology will be awarded to students who earn either a Standard or Advanced Studies Diploma and (i) satisfy all of the mathematics requirements for the Advanced Studies Diploma (four units of credit including Algebra II; two verified units of credit) with a "B" average or better, and (ii) either (a) pass an examination in a career and technical education field that confers certification from a recognized industry, or trade or professional association, (b) acquire a professional license in a career and technical education field from the Commonwealth of Virginia, or (c) pass an examination approved by the Board that confers college-level credit in a technology or computer science area. The Board of Education shall approve all professional licenses and examinations used to satisfy these requirements."

The *Regulations Establishing Standards for Accrediting Public Schools in Virginia* make the following provisions relative to students earning verified units of credit:

8 VAC 20-131-110.C Standard and verified units of credit
The Board may from time to time approve additional tests for the purpose of awarding verified credit. Such additional tests, which enable students to earn verified units of credit, must, at a minimum, meet the following criteria:

1. The test must be standardized and graded independently of the school or school division in which the test is given;
2. The test must be knowledge-based;
3. The test must be administered on a multi-state or international basis, or administered as part of another state's accountability assessment program; and
4. To be counted in a specific academic area, the test must measure content that incorporates or exceeds the SOL content in the course for which verified credit is given.

8 VAC 20-131-50.B.2 (Footnotes 5 and 6 and C., Footnote 5) Requirements for graduation
Verified Credits Required
Student Selected Test [5]
[5] A student may utilize additional assessments for earning verified credit in computer science, technology, career and technical education, or other areas as prescribed by the Board in 8VAC 20-131-110.
[6]Students who complete a career and technical education program sequence and pass an examination or occupational competency assessment in a career and technical education field that confers certification or an occupational competency credential from a recognized industry, or trade or professional association or acquires a professional license in a career and technical education field from the Commonwealth of Virginia may substitute the certification, competency credential, or license for (i) the student selected verified credit and (ii) either a science or history and social science verified credit when the certification, license, or credential confers more than one verified credit. The examination or occupational competency assessment must be approved by the Board of Education as an additional test to verify student achievement.

Summary of Important Issues:
The attached list of 268 industry, professional, trade association certification examinations, or occupational competency assessments meets the Board's requirements for the Career and Technical Education Seal, the Seal of Advanced Mathematics and Technology, and student-selected verified credit.

Included in the attached list are 16 new industry certification examinations and occupational competency assessments (shown in bold print).

Industry, professional, and trade association certifications are continually being revised or discontinued to stay current with technology and new techniques. These changes may be such that individual certifications are no longer available, no longer meet the Board's criteria for diploma seals or student-selected verified credit, or require additional criteria such as work experience beyond high school. Thirteen of the certifications that were previously approved by the Board are recommended for deletion. (See attached list).

Impact on Fiscal and Human Resources:
Federal Carl Perkins funds may be used to help teachers and programs become certified. State funds will be used to assist students to become certified or pass an occupational competency assessment.

Timetable for Further Review/Action:
After final approval, a Superintendent's Memorandum will notify school divisions of these additions to and deletions from the approved list of industry certifications, occupational competency assessments, and licenses.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education accept for first review the revised list of industry certification examinations, occupational competency assessments, and licenses to meet the requirements for the Board of Education's Career and Technical Education and Advanced Mathematics and Technology Seals and the student-selected verified credit.

Board of Education Approved Industry Certifications, Occupational Competency Assessments, and Licensure	
4/26/2012	
Name of Credential	**Issuing Organization**
Students who earn a credential by passing any one of the certification or licensure examinations contained in this document may substitute the certification competency credential or license for (i) the student selected verified credit and (ii) either a science or history and social science verified credit when the certification license or credential confers more than one verified credit. Students are eligible to earn diploma seals by passing one of the credentials or licensure examinations in this document as well as completing the requirements set forth in 8 VAC 20-131-50(Paragraph K).	
AGRICULTURAL EDUCATION	
Agricultural Biotechnology Assessment	National Occupational Competency Testing Institute (NOCTI)
Agriculture Mechanics Assessment	National Occupational Competency Testing Institute (NOCTI)
Agricultural Mechanics and Technology	**New York State Department of Education (Cornell University)**
Agribusiness Examination	New York State Department of Education (Cornell University)
Animal Systems Assessment	National Occupational Competency Testing Institute (NOCTI)
Commercial Pesticide Applicator Certification	Virginia Department of Agriculture and Consumer Services
Floriculture-Greenhouse Assessment	National Occupational Competency Testing Institute (NOCTI)
Floriculture Assessment	National Occupational Competency Testing Institute (NOCTI)
Forestry Products & Processing Assessment	National Occupational Competency Testing Institute (NOCTI)
Greenhouse Operators Certification Program	Southeast Greenhouse Growers Association
Horticulture-Landscaping Assessment	National Occupational Competency Testing Institute (NOCTI)
Natural Resource Systems Assessment	National Occupational Competency Testing Institute (NOCTI)
Outdoor Power Equipment Certifications (Pass any one Outdoor Power Equipment exam)	Equipment and Engine Training Council
Power Equipment Technology Examination	SkillsUSA
Pet Sitters Certification	National Association Professional Pet Sitters
Production Agriculture Assessment	National Occupational Competency Testing Institute (NOCTI)
Private Applicator Certification	Virginia Department of Agriculture and Consumer Services
Registered Technician Certification	Virginia Department of Agriculture and Consumer Services
Small Engine Technology Assessment	National Occupational Competency Testing Institute (NOCTI)
Small Animal Science and Technology Assessment	National Occupational Competency Testing Institute (NOCTI)
Small Animal Care Examination	New York State Department of Education (Cornell University)
BUSINESS AND INFORMATION TECHNOLOGY	
Accounting-Basic Assessment	National Occupational Competency Testing Institute (NOCTI)
Accounting - Complete Assessment	National Occupational Competency Testing Institute (NOCTI)
Administrative Assisting Assessment	National Occupational Competency Testing Institute (NOCTI
Administrative Services Assessment	National Occupational Competency Testing Institute (NOCTI)
Adobe Certified Associate (Pass any one test in this program)	Adobe Systems Incorporated
Apple Pro Certification Program (Pass any one exam in this program)	Apple, Inc.
Banking and Related Services Assessment	National Occupational Competency Testing Institute (NOCTI)
Business Financial Management Assessment	National Occupational Competency Testing Institute (NOCTI)
Business Information Processing Assessment	National Occupational Competency Testing Institute (NOCTI)
Brainbench Network Administration Certifications (Pass any one test in this category)	Brainbench
Brainbench Systems Administration Certifications (Pass any one test in this category)	Brainbench
Brainbench Software Development Certifications (Pass any one test in this category)	Brainbench
Brainbench Technical Support Certifications (Pass any one test in this category)	**Brainbench**

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Brainbench Web Design and Development Certifications (Pass any one test in this category)	Brainbench
Brainbench Web Administration Certifications (Pass any one test in this category)	Brainbench
Brainbench Desktop Publishing Certifications (Pass any one test in this category)	Brainbench
Certified Electronic Health Record Specialist (CEHRS)	**National Healthcareer Association**
Certified Medical Administrative Assistant (CMAA)	**National Healthcareer Association**
Certified Internet Web Professional (CIW) Program (Pass any one exam in this program)	ProsoftTraining
Certified Novell Administrator (CNA)	Novell
Computer Programming Assessment	National Occupational Competency Testing Institute (NOCTI)
Computer Programming Examination	SkillsUSA
Financial and Investment Planning Assessment	National Occupational Competency Testing Institute (NOCTI)
Fundamental Business Concepts	ASK Business Institute
General Management Assessment	National Occupational Competency Testing Institute (NOCTI)
Human Resources Management Assessment	National Occupational Competency Testing Institute (NOCTI)
IC3 Certification	Certiport
Intuit QuickBooks Certification	**Certiport**
Linux+ Certification (Pass any one exam)	CompTIA
Microsoft Certified Professional (Pass any one Microsoft Professional exam)	Microsoft
Microsoft Technology Associate (MTA) Program (Pass any one exam)	Microsoft
Microsoft Office Specialist (MOS)—(Pass any one MOS exam of any version)	Microsoft
Network+ Certification	CompTIA
Oracle Certification Program Examinations (Pass any one Oracle certification exam)	Oracle Corporation
Virtual Enterprise Assessment	National Occupational Competency Testing Institute (NOCTI) and Certiport
W!SE Financial Literacy Certification	Working in Support of Education (W!SE)
Web Design Assessment	**National Occupational Competency Testing Institute (NOCTI)**
CAREER AND TECHNICAL EDUCATION GENERIC CREDENTIALS	
National Career Readiness Certificate	ACT, WorkKeys®
Workplace Readiness Skills for the Commonwealth Examination	Career and Technical Education Consortium of States (CTECS)
FAMILY AND CONSUMER SCIENCES EDUCATION	
Broad Field Family and Consumer Sciences Examination	American Association of Family and Consumer Sciences (AAFCS)
Commercial Foods Assessment	National Occupational Competency Testing Institute (NOCTI) and Certiport
Child Development Associate Certification (CDA)	**CDA Council**
Commercial Baking Examination	SkillsUSA

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Culinary Arts Prep Cook-Level 1 Assessment	National Occupational Competency Testing Institute (NOCTI)
Culinary Arts Cook-Level 2 Assessment	National Occupational Competency Testing Institute (NOCTI)
Culinary Arts Examination	American Association of Family and Consumer Sciences (AAFCS)
Culinary Arts Examination	SkillsUSA
Early Childhood Education and Care Assessment--Advanced	**National Occupational Competency Testing Institute (NOCTI)**
Early Childhood Education and Care Assessment--Basic	**National Occupational Competency Testing Institute (NOCTI)**
Early Childhood Education Examination	American Association of Family and Consumer Sciences (AAFCS)
Education Fundamentals Examination	American Association of Family and Consumer Sciences (AAFCS)
Education and Training Assessment	National Occupational Competency Testing Institute (NOCTI)
Family Services Examination	American Association of Family and Consumer Sciences (AAFCS)
Fashion, Textiles, and Apparel Examination	American Association of Family and Consumer Sciences (AAFCS)
Hospitality Management—-Food and Beverage Option Assessment	National Occupational Competency Testing Institute (NOCTI)
Hospitality Management—Lodging Option Assessment	National Occupational Competency Testing Institute (NOCTI)
Interior Design Examination	American Association of Family and Consumer Sciences (AAFCS)
Nutrition Examination	American Association of Family and Consumer Sciences (AAFCS)
ParaPro	Educational Testing Service
Personal and Family Finance Certification	American Association of Family & Consumer Sciences (AAFCS)
ProStart Program Certification (Levels I and/or 2)	Education Foundation of the National Restaurant Association
Retail Commercial Baking Assessment	National Occupational Competency Testing Institute (NOCTI)
Restaurant, Food and Beverage Services Assessment	National Occupational Competency Testing Institute (NOCTI)
ServeSafe Certification	Education Foundation of the National Restaurant Association
START Certification (Hospitality Skills)	American Hotel and Lodging Association (AH&LA)
HEALTH AND MEDICAL SCIENCES EDUCATION	
Certified Clinical Medical Assistant Examination	National Healthcareer Association
Certified Dental Assistant: Infection Control Examination (ICE)	Dental Assisting National Board, Inc.
Certified Dental Assistant: Radiation Health & Safety Examination (RHS)	Dental Assisting National Board, Inc.
Certified EKG Technician (CET)	**National Healthcareer Association**
Certified Medical Laboratory Assistant (CMLA)	**National Healthcareer Association**
Certified Operating Room Surgical Technician (CORST)	**National Healthcareer Association**
Certified Phlebotomy Technician (CPT)	**National Healthcareer Association**
Certified Veterinary Assistant	Animal Care Technologies
Dental Assisting Assessment	National Occupational Competency Testing Institute (NOCTI)
Diagnostic Services Assessment	National Occupational Competency Testing Institute (NOCTI)
EMS First Responder Certification	Department of Health, Office of Emergency Medical Services
Emergency Medical Technician	Department of Health, Office of Emergency Medical Services
Health Assisting Assessment	National Occupational Competency Testing Institute (NOCTI)
Health Informatics Assessment	National Occupational Competency Testing Institute (NOCTI)
Home Health Aide Assessment	National Occupational Competency Testing Institute (NOCTI)
Medical Assisting Assessment	National Occupational Competency Testing Institute (NOCTI)
Medical Assisting Examination	SkillsUSA
National Health Care Foundation Skills Standards Assessment	National Consortium on Health Science & Technical Education

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NRDA Certification (Dental Assisting)	National Allied Health Registry/National Association for Health Professionals
NRDA Certification (Medical Assisting)	National Allied Health Registry/National Association for Health Professionals
Nurse Aide	Virginia Board of Nursing
Nurse Assisting Examination	SkillsUSA
Nursing Assisting Assessment	National Occupational Competency Testing Institute (NOCTI)
Practical Nursing Assessment	National Occupational Competency Testing Institute (NOCTI)
Practical Nursing Examination	SkillsUSA
Therapeutic Services Assessment	National Occupational Competency Testing Institute (NOCTI)
Virginia Pharmacy Technician Examination	Virginia Board of Pharmacy
MARKETING	
Concepts of Finance Examination	ASK Business Institute
Concepts of Entrepreneurship and Management	ASK Business Institute
Fundamental Marketing Concepts	ASK Business Institute
Lodging Assessment	National Occupational Competency Testing Institute (NOCTI)
Lodging Management Program Certification (Levels 1 and/or 2)	American Hotel and Lodging Association (AH&LA)
National Professional Certification in Customer Service	National Retail Federation Foundation
Retail Trades Assessment	National Occupational Competency Testing Institute (NOCTI)
National Professional Certification in Retail Management Examination	National Retail Federation Foundation
Recreation, Amusements, and Attractions Assessment	National Occupational Competency Testing Institute (NOCTI)
National Professional Certification in Sales	National Retail Federation Foundation
Travel and Tourism Assessment	National Occupational Competency Testing Institute (NOCTI)
MILITARY SCIENCE	
Armed Services Vocational Aptitude Battery Examination	United States Military Entrance Processing Command
TECHNOLOGY EDUCATION	
3D Visualization & Animation Examination	SkillsUSA
ADDA Architectural Drafting Examination	American Design Drafting Association
ADDA Mechanical Drafting Examination	American Design Drafting Association
ADDA Mechanical Drafting Apprentice Examination	American Design Drafting Association
ADDA Architectural Drafting Apprentice Examination	American Design Drafting Association
AutoCAD Certifications (Pass any one exam)	Brainbench
Autodesk Application Certification Program (Pass any one exam)	Autodesk
Autodesk Certification Program (Pass any one exam at fundamentals level)	Autodesk
Automated Manufacturing Technology Examination	SkillsUSA
Architectural Drafting Assessment	National Occupational Competency Testing Institute (NOCTI)
Architectural Drafting Examination	SkillsUSA
Certified SolidWorks Associate Examination	SolidWorks Corporation

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Electronic Technology Assessment	National Occupational Competency Testing Institute (NOCTI)
Electronics Application & Technology Examination	SkillsUSA
Engineering Technology Examination	SkillsUSA
Manufacturing Technology Assessment	National Occupational Competency Testing Institute (NOCTI)
Pre-Engineering Assessment	National Occupational Competency Testing Institute (NOCTI)
Project Lead the Way End-of-Course Tests (Pass any one end-of-course exam)	Project Lead The Way
Robotics Examination	SkillsUSA
STARS Certification Examination	Digital Quest, Inc.
Technical Drafting Examination	SkillsUSA
TRADE AND INDUSTRIAL EDUCATION	
A+ Certification (Pass any one exam from 2009 certification program)	CompTIA
Access Certification	American Culinary Federation, Inc. (ACF)
Advertising and Design Assessment	National Occupational Competency Testing Institute (NOCTI)
Audio-Radio Production Examination	SkillsUSA
Audio-Visual Communications Assessment	National Occupational Competency Testing Institute (NOCTI)
Automotive Technician Core Assessment	National Occupational Competency Testing Institute (NOCTI)
Automotive Technician Standard Assessment	National Occupational Competency Testing Institute (NOCTI)
Automotive Technician Advanced Assessment	National Occupational Competency Testing Institute (NOCTI)
Automotive Technician Examination (ASE)—(Pass any one exam from Automobile Technician Test Series)	National Institute for Automotive Service Excellence
Avid Media Composer Certification Program (Pass any one examination)	**Avid**
Aviation Maintenance (Secondary) Examination	SkillsUSA
Basic Installer Exam, Mobile Electronics Certified Professional	Consumer Electronics Association
BICSI Registered Installer Certification, Level 1	BICSI (International Telecommunications Association)
Broadcasting and Journalism Assessment	National Occupational Competency Testing Institute (NOCTI)
Building Construction Occupations Assessment	National Occupational Competency Testing Institute (NOCTI)
Building Trades Maintenance Assessment	National Occupational Competency Testing Institute (NOCTI)
CAD Assessment	National Occupational Competency Testing Institute (NOCTI)
CAD/CAM Assessment	National Occupational Competency Testing Institute (NOCTI
Cabinetmaking Examination	SkillsUSA
Cabinetmaking Assessment	National Occupational Competency Testing Institute (NOCTI)
Carpentry Examination	SkillsUSA
Carpentry Assessment	National Occupational Competency Testing Institute (NOCTI)
Carpentry Level One, National Construction Career Test	National Center for Construction Education & Research (NCCER)
Certified Computer Service Technician	Electronics Technicians Association, International (ETA)
Certified Electronics Technician Associate (CET)	Electronics Technicians Association, International (ETA)
Certified Satellite Dish Installer	Electronics Technicians Association, International (ETA)
CISCO CCNA Academy End-of-Course Examinations (Pass any two end-of-course exams, Levels 1-4)	CISCO Systems
CISCO Certified Networking Associate (Pass any one exam in CCNA certification program)	CISCO Systems
Collision Repair Assessment	National Occupational Competency Testing Institute (NOCTI)

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Collision Repair and Refinishing Technician (ASE)-(Pass any one exam from	National Institute for Automotive Service Excellence
Collision Repair/Refinishing Technology Assessment	National Occupational Competency Testing Institute (NOCTI)
Computer Maintenance Technology Examination	SkillsUSA
Computer Networking Fundamentals Assessment	National Occupational Competency Testing Institute (NOCTI)
Computer Repair Technology Assessment	National Occupational Competency Testing Institute (NOCTI)
CNC Milling and Turning Technology Examination	SkillsUSA
Construction Assessment	National Occupational Competency Testing Institute (NOCTI)
Construction Masonry-Blocklaying Assessment	National Occupational Competency Testing Institute (NOCTI)
Construction Masonry-Bricklaying Assessment	National Occupational Competency Testing Institute (NOCTI)
Construction Technology Test	National Center for Constructional Education & Research (NCCER)
Computer Technology Assessment	National Occupational Competency Testing Institute (NOCTI)
CompTIA Strata Fundamentals of IT Technology Certification	Certiport
Copper Based Cabling Certification	RBT Systems, Inc.
Core: Introductory Craft Skills, National Construction Career Test	National Center For Construction Education & Research (NCCER)
Cosmetology Assessment	National Occupational Competency Testing Institute (NOCTI)
Cosmetology Examination	SkillsUSA
Criminal Justice Assessment	National Occupational Competency Testing Institute (NOCTI)
Criminal Justice Examination/CSI	SkillsUSA
Customer Service Examination	SkillsUSA
Data Cabling Installer Certification (DCIC)	Electronics Technicians Association, International (ETA)
Design and Preconstruction Assessment	National Occupational Competency Testing Institute (NOCTI)
Diesel Engine Mechanics Assessment	National Occupational Competency Testing Institute (NOCTI)
Drafter Certification	American Design Drafting Association
Electrical Construction Technology Assessment	National Occupational Competency Testing Institute (NOCTI)
Electrical Occupations Assessment	National Occupational Competency Testing Institute (NOCTI)
Electrical, National Construction Career Test	National Center For Construction Education & Research (NCCER)
Electronics Assessment	National Occupational Competency Testing Institute (NOCTI)
Electronics Module: DC (EM1)	Electronics Technicians Association, International (ETA)
Electronics Module: AC (EM2)	Electronics Technicians Association, International (ETA)
Electronics Module: Analog (EM3)	Electronics Technicians Association, International (ETA)
Electronics Module: DC (EM4)	Electronics Technicians Association, International (ETA)
Electronics Module: Comprehensive (EMS)	Electronics Technicians Association, International (ETA)
EPA Technician Certification (Levels I, II, or III)	Environmental Protection Agency (Authorized Entity)
Fiber Optic Network Cabling Certification	RBT Systems, Inc.
Fiber Optics Installer Certification	Electronics Technicians Association, International (ETA)
Firefighter I Certification	Virginia Department of Fire Programs
Firefighter II Certification	Virginia Department of Fire Programs
General Drafting and Design Assessment	National Occupational Competency Testing Institute (NOCTI)
Graphic Communication Technology Assessment	National Occupational Competency Testing Institute (NOCTI)
Heating, Electrical, Air Conditioning Technology (HEAT) Examination (Pass any one exam in this program)	HVAC Excellence
Heating, Ventilation, Air Conditioning (HVAC) Assessment	National Occupational Competency Testing Institute (NOCTI)
Heating, Ventilation, Air Conditioning & Refrigeration (HVAC/R) Assessment	National Occupational Competency Testing Institute (NOCTI)
Heavy Equipment Operations Level One	National Center For Construction Education & Research (NCCER)

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HVAC, National Construction Career Test	National Center For Construction Education & Research (NCCER)
Industrial Maintenance Mechanic Assessment	National Occupational Competency Testing Institute (NOCTI)
Industrial Electronics Assessment	National Occupational Competency Testing Institute (NOCTI)
Installer (or Service) Core Certification (HVAC)	North American Technician Excellence, Inc. (NATE)
Internetworking Examination	SkillsUSA
IT Essentials 1 Examination (PC Hardware and Software)	Cisco Systems
MSSC Certified Production Technician (CPT) Program (Pass any one CPT examination)	Manufacturing Skill Standards Council (MSSC)
Machining Skills--Level I (Pass any one Machining (Level 1) examination with performance component)	National Institute for Metalworking Skills (NIMS)
Major Appliance Repair Examination	SkillsUSA
Marine Service Technology Examination	SkillsUSA
Masonry Examination	SkillsUSA
Maintenance Operations Assessment	National Occupational Competency Testing Institute (NOCTI)
Masonry Level One, National Construction Career Test	National Center For Construction Education & Research (NCCER)
Motorcycle Service Technology Examination	SkillsUSA
National Automotive Student Skills Standards Assessments (Pass any one exam from automotive service, automotive refinishing, collision repair, or diesel engine areas)	ASE-AYES-SkillsUSA Co-brand, SkillsUSA
Nail Care Examination	SkillsUSA
Network Cabling Specialist Certification (Pass copper and fiber examinations)	**C-Tech Associates, Inc.**
Performing Arts Assessment	National Occupational Competency Testing Institute (NOCTI)
Photography Examination	SkillsUSA
Plumbing Assessment	National Occupational Competency Testing Institute (NOCTI)
Plumbing Examination	SkillsUSA
Plumbing-Heating-Cooling Contractors Educational Foundation Examinations (Pass any one examination)	**Plumbing-Heating-Cooling Contractors (PHCC) Educational Foundation (Examinations administered by NOCTI)**
Precision Machining Assessment	National Occupational Competency Testing Institute (NOCTI)
Protective Services Assessment	National Occupational Competency Testing Institute (NOCTI)
PrintED Certification Program (Pass any one examination)	Graphic Arts Education and Research Foundation (Examinations are
Residential Wiring Examination	SkillsUSA
Residential Construction Academy Examination (Pass any one test from available	Home Builders Institute (Examinations are administered by National
SENSE Training Program Certification (Level 1, Entry-Level Welder)	American Welding Society (AWS)
Student Electronics Technician Certification (SET)	Electronics Technicians Association, International (ETA)
Telecommunications Electronics Technician Certification	Electronics Technicians Association, International (ETA)
Television Broadcasting Assessment	National Occupational Competency Testing Institute (NOCTI)
Television Video Production Examination	SkillsUSA
Technical Drafting Assessment	National Occupational Competency Testing Institute (NOCTI)
Visual Arts Assessment	National Occupational Competency Testing Institute (NOCTI)
Visual Communications Assessment	National Occupational Competency Testing Institute (NOCTI)
Welding Examination	SkillsUSA
Welding Assessment	National Occupational Competency Testing Institute (NOCTI)
Welding, National Construction Career Test	National Center For Construction Education & Research (NCCER)

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LICENSE	
Barbers	Board of Barbers and Cosmetology (Virginia Department of Professional and
Cosmetology	Board of Barbers and Cosmetology (Virginia Department of Professional and
Licensed Practical Nurse	Virginia Board of Nursing
Nail Technician	Board of Barbers and Cosmetology (Virginia Department of Professional and
FAA Private Pilot Written Test (PAR)	Federal Aviation Administration
Real Estate Salesperson	Virginia Real Estate Board (Dept. of Professional & Occupational Regulation)
EXAMINATION	
Advanced Placement Computer Science A	The College Board
College Level Examination Program (CLEP): Information Systems and Computer Applications	The College Board
International Baccalaureate Computer Science (Standard Level)	The International Baccalaureate Organization
International Baccalaureate Computer Science (Higher Level)	The International Baccalaureate Organization
International Baccalaureate for Business and Management (Standard Level)	The International Baccalaureate Organization
International Baccalaureate Information Technology in a Global Society (IB6613) (Standard Level)	The International Baccalaureate Organization
DELETIONS	
Advertising Design Examination	PrintED Co-brand, SkillsUSA
Certified SolidWorks Professional (Pass any one exam)	SolidWorks Corporation
Digital Literacy Certification Test (must be taken in combination with the	Microsoft
Graphic Communications Examination	PrintED Co-brand, SkillsUSA
Graymark Cabling Installation Certification	Graymark International
HVAC Excellence Certification Program (Pass any one exam in this program)	HVAC Excellence
Horticulture-Olericulture and Pomology Assessment	National Occupational Competency Testing Institute (NOCTI)
JROTC Skills for Success Assessment	Department of Defense
Pre-Skills Assessment for Mastercam Assessment	Mastercam--Administered by National Occupational Competency Testing Institute (NOCTI)
Residential Air-Conditioning and Heating Certification	Air Conditioning, Heating, and Refrigeration Institute
Screen Printing Examination	PrintED Co-brand, SkillsUSA
SkillsUSA Workforce Ready System (Pass any one test from available examinations)	SkillsUSA
Virginia Workplace Readiness Assessment/IC3 Certification Exams (pass Virginia Workplace Readiness Assessment and any one of three IC3 exams)	National Occupational Competency Testing Institute (NOCTI) and Certiport

Virginia Board of Education Agenda Item

Agenda Item: P **Date:** April 26, 2012

Title	First Review of Timetable for the Review and Approval of the Revised *Computer Technology Standards of Learning*		
Presenter	Dr. Tammy McGraw, Director of Educational Technology		
E-mail	Tammy.Mcgraw@doe.virginia.gov	**Phone**	(804) 225-4429

Purpose of Presentation:
Action required by state or federal law or regulation.

Previous Review or Action:
No previous review or action.

Action Requested:
Final review: Action requested at this meeting.

Alignment with Board of Education Goals: Please indicate (X) all that apply:

X	Goal 1: Expanded Opportunities to Learn
	Goal 2: Accountability of Student Learning
	Goal 3: Nurturing Young Learners
	Goal 4: Strong Literacy and Mathematics Skills
	Goal 5: Highly Qualified and Effective Teachers and Administrators
	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify:

Background Information and Statutory Authority:
Goal 1: The Board of Education's 2011-2016 Comprehensive Plan calls for a review of all Standards of Learning on a regular schedule.

The *Code of Virginia* also requires a review of Virginia's Standards of Learning every seven years.

The *Computer Technology Standards of Learning* were adopted June 22, 2005. The current standards may be viewed online at http://www.doe.virginia.gov/testing/sol/standards_docs/computer_technology/index.shtml.

Summary of Important Issues:
Using an established review process and criteria, the Department of Education will conduct a review of the current *Computer Technology Standards of Learning* according to the attached timetable. The review team will consider the *Essential Elements of ICT Literacy* in the Board-approved *Educational*

Technology Plan for Virginia: 2010-15 (available at http://www.doe.virginia.gov/support/technology/edtech_plan/plan.pdf) as well as current standards from leading international educational technology groups such as the International Society for Technology in Education.

Impact on Fiscal and Human Resources:
This activity can be completed with existing agency resources.

Timetable for Further Review/Action:
The timetable for further review/action is presented in Attachment A.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education waive first review and approve the timetable for review of the *Computer Technology Standards of Learning*.

Attachment A

PROPOSED SCHEDULE FOR REVIEW OF THE
COMPUTER TECHNOLOGY STANDARDS OF LEARNING

May 4, 2012	A Superintendent's Memorandum will be distributed to announce the review process schedule, the availability of a Standards of Learning review/comment page on the Department of Education Web site, and request that division superintendents share information about the Web site with instructional staff. The Department of Education will post on its Web site a Standards of Learning review/comment page for the *2005 Computer Technology Standards of Learning*. The page will be active for 30 days.
May 15, 2012	The Department of Education will meet with the Virginia Educational Technology Advisory Committee (VETAC), an advisory committee that advises the Board of Education on educational technology matters through the Superintendent of Public Instruction. This committee will begin review of comments, various international standards, and the *Essential Elements of ICT Literacy* to make recommendations for potential changes.
June-July, 2012	The first draft of the *2012 Computer Technology Standards of Learning* will be prepared, reflecting recommendations from VETAC members as well as comments from the Web page. The draft will be made available to technology directors, instructional technology resource teachers, librarians, Virginia's teacher colleges, and various professional organizations for review and comment.
August 2012	The Department of Education and the VETAC Executive Committee will meet to review the feedback and prepare the draft *2012 Computer Technology Standards of Learning* for first review by the Board of Education.
September 27, 2012	The Department of Education will present the proposed document to the Board of Education for first review.
October 2012	The proposed *2012 Computer Technology Standards of Learning* document will be distributed for public comment. The document will be placed on the Virginia Department of Education Web site for review. Public hearings will be held as prescribed by the Board of Education.
November 29, 2012	The Superintendent of Public Instruction will make a recommendation to the Board of Education for final review and adoption of the proposed *2012 Computer Technology Standards of Learnin*g. The final document will be posted on the Department of Education's Web site and school divisions will be apprised of its availability.

Virginia Board of Education Agenda Item

Agenda Item: Q **Date:** April 26, 2012

Title	First Review of Recommended Cut Scores for the Virginia Modified Achievement Standards Tests (VMAST) for Grades 3-8 Mathematics and Algebra I		
Presenter	Mrs. Shelley Loving-Ryder, Assistant Superintendent, Division of Student Assessment and School Improvement		
E-mail	Shelley.Loving-Ryder@doe.virginia.gov	**Phone**	804-225-2102

Purpose of Presentation:
Action required by Board of Education regulation.

Previous Review or Action:
No previous review or action.

Action Requested:
Action will be requested at a future meeting. Specify anticipated date below:
Date: May 24, 2012
Action: Final review

Alignment with Board of Education Goals: Please indicate (X) all that apply:

	Goal 1: Expanded Opportunities to Learn
X	Goal 2: Accountability of Student Learning
	Goal 3: Nurturing Young Learners
X	Goal 4: Strong Literacy and Mathematics Skills
	Goal 5: Highly Qualified and Effective Teachers and Administrators
	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify:

Background Information and Statutory Authority:
Goal 2: The approval of cut scores on the new Virginia Modified Achievement Standards Tests (VMAST) for grades 3-8 and Algebra I will help schools and school divisions increase the academic success of students with disabilities.

Goal 4: The approval of a cut score on the new VMAST assessments for grades 3-8 and Algebra I will support the development of numeracy skills of students with disabilities.

The VMAST is an alternate assessment in which research-based supports and simplifications have been applied to existing online test items to make them more accessible to eligible students with disabilities who are instructed in grade level content but are not likely to achieve proficiency in the same time frame

as their non-disabled peers. VMAST assessments for grades 3-8 mathematics and Algebra I based on the 2009 mathematics SOL are being administered for the first time in spring 2012.

Because these are new assessments, cut scores for the achievement levels of fail/basic, pass/proficient and pass/advanced must be adopted by the Board. Consistent with the process used for the SOL assessments, committees of educators were convened in March 2012 to recommend to the Board of Education (BOE) minimum cut scores for the achievement levels of *fail/basic*, *pass/proficient,* and *pass/advanced* for the grades 3-8 mathematics tests. More information about the process used by the committee of educators to develop the recommended cut scores may be found in Attachment A.

Summary of Important Issues:
Information about the cut scores recommended by the committees for the achievement levels of *fail/basic*, *pass/proficient,* and *pass/advanced* for the grades 3-8 and Algebra I VMAST assessments is included in Attachment B.

The Board is asked to review this information and to adopt "cut" scores for the achievement levels of *fail/basic*, *pass/proficient,* and *pass/advanced* for the grades 3-8 and Algebra I VMAST mathematics assessments at the May 24, 2012, meeting.

Impact on Fiscal and Human Resources:
N/A

Timetable for Further Review/Action:
Final review on May 24, 2012

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education accept for first review "cut" scores for the achievement levels of *fail/basic*, *pass/proficient,* and *pass/advanced* for the grades 3-8 SOL and Algebra I VMAST mathematics assessments as follows:

- Grade 3: 9 out of 32 for fail/basic, 22 out of 32 for pass/proficient, and 29 out of 32 for pass/advanced
- Grade 4: 9 out of 40 for fail/basic, 23 out of 40 for pass/proficient, and 36 out of 40 for pass/advanced
- Grade 5: 13 out of 40 for fail/basic, 28 out of 40 for pass/proficient, and 36 out of 40 for pass/advanced
- Grade 6: 10 out of 40 for fail/basic, 26 out of 40 for pass/proficient, and 36 out of 40 for pass/advanced
- Grade 7: 11 out of 40 for fail/basic, 26 out of 40 for pass/proficient, and 36 out of 40 for pass/advanced
- Grade 8: 10 out of 40 for fail/basic, 27 out of 40 for pass/proficient, and 36 out of 40 for pass/advanced
- Algebra I: 24 out of 40 for pass/proficient, and 36 out of 40 for pass/advanced

Standard Setting
Modified-Angoff Procedure

Standard setting is a systematic way of making a professional judgment on the number of questions on a test that must be answered correctly to signify that a student's achievement is at the *fail/basic*, *pass*/*proficient,* or *pass*/*advanced* achievement level. The number of questions that a student must answer correctly to be classified as "basic," proficient or "advanced" is called a "cut score." In the case of the Virginia Modified Achievement Standards Test (VMAST) mathematics assessments for grades 3-8, four performance level categories have been established:

Pass/Advanced
Pass/Proficient
Fail/Basic
Fail/Below Basic

One cut score will distinguish *Fail/Basic* from *Fail/Below Basic.* A second cut score will distinguish *Pass/Proficient* from *Fail/Basic* and a third cut score will distinguish *Pass/Advanced* from *Pass/Proficient*.

The procedure used for standard setting for the VMAST mathematics assessments is known as the modified-Angoff procedure. This procedure has been widely used on tests for a number of years. Steps used in the procedure are described below.

1. Judges receive training in the standard-setting process and complete a simulation activity.

2. Judges review the test on which cut scores are to be set to simulate the experience of the students who have taken the test.

3. Judges discuss the performance level descriptor for each achievement level (i.e., Fail/Below Basic, Fail/Basic, Pass/Proficient, and Pass/Advanced). An example of a performance level descriptor for the "pass/proficient" achievement level for the grade 7 VMAST mathematics assessment is shown below.

   With supports and simplifications, a student performing at this level should be able to:

   - Write a power of 10 with a negative exponent in decimal form.
   - Compare and order fractions, decimals, percents, and numbers written in scientific notation.
   - Determine the square root of perfect squares less than or equal to 144.
   - Use the number line to demonstrate the absolute value of a rational number.
   - Extend arithmetic and geometric sequences using the common difference or common ratio.
   - Add, subtract, multiply, and divide integers.
   - Use proportional reasoning to solve single and multistep practical problems.

Judges then discuss the characteristics of students who just make it into an achievement level: those who are "just basic," "just proficient," and "just advanced," to further define the particular knowledge and skills that separate those students in one achievement level from those in the others.

4. ***Round 1 Ratings***:
Judges independently examine each question on the test, thinking of students who are "just" *proficient* and estimating whether or not these students would answer each item correctly MOST of the time (2/3 of the time). (Note: Judges are instructed to determine what students *should* do, rather than what they *can* now do.) Judges use the same procedure for the *basic* and *advanced* categories. When Round 1 is completed, each judge has recorded "yes" or "no" for each question on the test for "basic," "proficient," and "advanced." Each judge's ratings on the questions are converted to a cut score.

5. ***Round 2 Ratings***:
Judges are provided with a table of each judge's ratings from Round 1, refine the definitions and descriptors, and repeat the process used in Round 1.

6. ***Round 3 Ratings***:
Judges are provided with a table of each judge's ratings from Round 2, refine the definitions and descriptors, and repeat the process used in Round 2.

Articulation Committee:
After the work of the standard setting committees has been completed, a smaller group of educators composed of two or three members from each of the standard setting committees is convened to review the results of round 3 for each test. In the case of the VMAST mathematics assessment, the purpose of this "articulation committee" was to review the round 3 results for each of the tests to determine the reasonableness of the recommended cut scores in light of the performance level descriptors. Based on their review, the articulation committee recommended adjustments to the cut scores for some of the mathematics tests.

Recommendation Presented to the Board of Education:
The results of the standard setting committees and the articulation committee are presented as recommendations to the Board of Education as part of first review. On final review, the Board of Education is asked to adopt cut scores on each VMAST mathematics assessment.

Summary and Background Information on Proposed Cut Scores for the VMAST Mathematics Assessments for Grades 3-8 and Algebra I

	Fail/Basic			
	Background Information	**Standard Setting Summary**		
Test Name *	Fail/Basic Cut Score for the SOL Mathematics Test Based on the 2009 SOL	Round 3 Median	Articulation Committee Recommendation	Superintendent's Recommendation
Grade 3	16 out of 40	9 out of 32	9 out of 32	9 out of 32
Grade 4	17 out of 50	7 out of 40	9 out of 40	9 out of 40
Grade 5	18 out of 50	15 out of 40	13 out of 40	13 out of 40
Grade 6	16 out of 50	8 out of 40	10 out of 40	10 out of 40
Grade 7	17 out of 50	11 out of 40	11 out of 40	11 out of 40
Grade 8	17 out of 50	9 out of 40	10 out of 40	10 out of 40
Algebra I	n/a	n/a	n/a	n/a

* The VMAST assessments are based on blueprints that are derived from the SOL blueprints. However, the VMAST assessments have 20% fewer items than the SOL tests on which they are based. All VMAST mathematics tests have 40 items except for grade 3 which has 32 items.

Summary and Background Information on Proposed Cut Scores for the VMAST Mathematics Assessments for Grades 3-8 and Algebra I

	Pass/Proficient				Pass/Advanced			
	Background Information	**Standard Setting Summary**			**Background Information**	**Standard Setting Summary**		
Test Name *	Pass/Proficient Cut Score for SOL Mathematics Test Based on the 2009 SOL	Round 3 Median for Proficient	Articulation Committee Recommendation	Superintendent's Recommendation	Pass/Advanced Cut Score for SOL Mathematics Test Based on the 2009 SOL	Round 3 Median for Advanced	Articulation Committee Recommendation	Superintendent's Recommendation
Grade 3	26 out of 40	22 out of 32	22 out of 32	22 out of 32	36 out of 40	29 out of 32	29 out of 32	29 out of 32
Grade 4	31 out of 50	23 out of 40	23 out of 40	23 out of 40	45 out of 50	36 out of 40	36 out of 40	36 out of 40
Grade 5	31 out of 50	28 out of 40	28 out of 40	28 out of 40	45 out of 50	36 out of 40	36 out of 40	36 out of 40
Grade 6	28 out of 50	26 out of 40	26 out of 40	26 out of 40	45 out of 50	36 out of 40	36 out of 40	36 out of 40
Grade 7	31 out of 50	27 out of 40	26 out of 40	26 out of 40	45 out of 50	36 out of 40	36 out of 40	36 out of 40
Grade 8	31 out of 50	27 out of 40	27 out of 40	27 out of 40	46 out of 50	37 out of 40	36 out of 40	36 out of 40
Algebra I	25 out of 50	24 out of 40	24 out of 40	24 out of 40	45 out of 50	37 out of 40	36 out of 40	36 out of 40

* The VMAST assessments are based on blueprints that are derived from the SOL blueprints. However, the VMAST assessments have 20% fewer items than the SOL tests on which they are based. All VMAST mathematics tests have 40 items except for grade 3 which has 32 items.

Virginia Board of Education Agenda Item

Agenda Item: R **Date:** April 26, 2012

Title	First Review of A Recommended Cut Score for the Numeracy Requirement of the Modified Standard Diploma on the Grade 8 Standards of Learning Mathematics Test Based on the 2009 Mathematics Standards		
Presenter	Mrs. Shelley Loving-Ryder, Assistant Superintendent, Division of Student Assessment and School Improvement		
E-mail	Shelley.Loving-Ryder@doe.virginia.gov	**Phone**	804-225-2102

Purpose of Presentation:
Action required by Board of Education regulation.

Previous Review or Action:
Previous review and action. Specify date and action taken below:
Date: June 26, 2006
Action: Adoption of Cut Scores for the Literacy and Numeracy Assessments Required for the Modified Standard Diploma

Action Requested:
Action will be requested at a future meeting. Specify anticipated date below:
Date: May 24, 2012
Action: Final review

Alignment with Board of Education Goals: Please indicate (X) all that apply:

	Goal 1: Expanded Opportunities to Learn
X	Goal 2: Accountability of Student Learning
	Goal 3: Nurturing Young Learners
X	Goal 4: Strong Literacy and Mathematics Skills
	Goal 5: Highly Qualified and Effective Teachers and Administrators
	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify:

Background Information and Statutory Authority:
Goal 2: The approval of a cut score on the new grade 8 mathematics test based on the *2009 Mathematics Standards of Learning* (SOL) to meet the numeracy requirements for the Modified Standard Diploma will help schools and school divisions increase the academic success of students with disabilities.

Goal 4: The approval of a cut score on the new grade 8 mathematics test based on the *2009 Mathematics*

Standards of Learning (SOL) to meet the numeracy requirements for the Modified Standard Diploma will support the development of numeracy skills for students with disabilities.

The *Regulations Establishing Standards for Accrediting Public Schools* (SOA) effective August 31, 2011, describe the Modified Standard Diploma as "intended for certain students at the secondary level who have a disability and are unlikely to meet the credit requirements for a Standard Diploma. Eligibility and participation in the Modified Standard Diploma shall be determined by the student's Individualized Education Program (IEP) team and the student, where appropriate, at any point after the student's eighth grade year." The Standards of Accreditation also require students pursing the Modified Standard Diploma shall pass literacy and numeracy competency assessments prescribed by the Board.

In the *Guidelines for Implementing Certain Provisions of the Regulations Establishing Standards for Accrediting Public Schools in Virginia*, amended by the Board on January 13, 2011, the Board identified the grade 8 Standards of Learning (SOL) assessments in reading and mathematics as the literacy and numeracy assessments for the Modified Standard Diploma. Students may meet the numeracy requirements of the Modified Standard Diploma by achieving an adjusted cut score on the grade 8 SOL mathematics test, passing the Grade 8 Virginia Modified Achievement Standards test in mathematics, or passing an end-of-course mathematics test.

In 2011-2012 new mathematics tests based on the 2009 mathematics SOL were administered. In March 2012 a committee of educators was convened to recommend to the Board of Education a cut score on the new grade 8 SOL mathematics test that would represent the numeracy skills required by the Modified Standard Diploma. This cut score will be used by school divisions solely to verify the numeracy skills of students for the purposes of the Modified Standard Diploma and will have no impact on the scores required to pass the grade 8 mathematics tests.

Summary of Important Issues:
Information about the cut score recommended by the committees for the grade 8 Standards of Learning tests in mathematics as a measure of the numeracy requirements of the Modified Standard Diploma is included in Attachment A. The Board is asked to review this information and to adopt a cut score for the test for the purpose of verifying the numeracy skills required by the Modified Standard Diploma at the May 24, 2012, meeting.

Impact on Fiscal and Human Resources:
N/A

Timetable for Further Review/Action:
Final review on May 24, 2012

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education accept for first review a cut score of 25 out of 50 on the grade 8 SOL mathematics test as representing the numeracy requirement of the modified standard diploma.

Summary and Background Information on Proposed Cut Score on the Grade 8 Mathematics Test for the Numeracy Requirements of the Modified Standard Diploma

	Background Information	**Standard Setting Summary**	
Test* Name	Pass/Proficient Cut Score for Grade 8 Mathematics Test	Round 3 Median	Superintendent's Recommendation
Grade 8	31 out of 50	25 out of 50	25 out of 50

* Test based on the 2009 Mathematics Standards of Learning