Virginia Board of Education Agenda Item

Agenda Item: H **Date:** July 23, 2015

Title	Report from the Virginia Advisory Committee for the Education of the Gifted on Educational Opportunities for Gifted Middle School Students		
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Purpose of Presentation:
For information only. No action required.

Previous Review or Action:
No previous review or action.

Action Requested:
No action requested.

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

	Goal 1: Accountability for Student Learning
	Goal 2: Rigorous Standards to Promote College and Career Readiness
	Goal 3: Expanded Opportunities to Learn
	Goal 4: Nurturing Young Learners
	Goal 5: Highly Qualified and Effective Educators
	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
X	Other Priority or Initiative. Specify: Report in response to charge from the Board of Education given in the fall of 2013.

Background Information and Statutory Authority:
Gifted learners at the middle school level are a population with distinct educational and social needs. They have potential that requires differentiated and challenging educational services beyond those provided in the general education program. While the Virginia *Regulations Governing Educational Services for Gifted Students* require that identified students be served through twelfth grade, school divisions are challenged to provide special program options that meet the educational needs of gifted middle school learners. Recognizing that every student is different, and that there is not one way to best serve all gifted learners, research-based best practices suggest that schools and school divisions must offer a continuum of services. The National Association for Gifted Children (NAGC) defines this continuum as "a menu of educational options that are respectful of individual student differences and mindful of classroom and community resources."

A letter from the Virginia Board of Education (BOE) in September 2013 charged the Virginia Advisory Committee for the Education of the Gifted (VACEG) with researching quality programming options for high-ability learners at the middle school level. BOE President Mr. David M. Foster indicated that the middle school document should closely resemble the VACEG 2013 document *Educational Opportunities for Gifted Students at the High School Level*.

Over the 2013-2015 timeframe, 24 VACEG members contributed to the research and development of this document. Throughout the research and development process, VACEG members compared the various components of each service option to the *NAGC Pre-K-Grade 12 Gifted Programming Standards* as well as the *Regulations Governing Educational Services for Gifted Students*.

Summary of Important Issues:
Educational Opportunities for Gifted Middle School Students (Attachment A) is designed to help school divisions establish or improve programs for gifted middle school students. This document provides research and guidance regarding the social-emotional needs of gifted middle school students in addition to giving school divisions critical information for the development and evaluation of quality gifted programs. This document is not meant to be a comprehensive review of all possible service options for gifted middle school students. Rather it can serve as a foundation for creating and reviewing middle school gifted programs to extend and enrich the educational experiences of gifted learners throughout the Commonwealth of Virginia.

Educational Opportunities for Gifted Middle School Students identifies various service options that address the needs of gifted learners in middle school and satisfy the requirements for best practices in the *Regulations Governing Educational Services for Gifted Students.* These options are grouped into three categories: advanced learning opportunities in the classroom, accelerated content, and beyond the classroom. For each service option, the document addresses:

- The ways the option satisfies requirements for best practices in the *Regulations*;
- The support mechanisms associated with the option, such as differentiation, professional development, staffing, funding, space, face-to-face opportunities, virtual learning, and/or technology;
- The learner outcomes that specify what students should know, understand, and be able to do as a result of the learning experiences and student academic growth as well as the social-emotional benefits students receive from participating in the programs;
- The Virginia Department of Education (VDOE) priorities associated with the option, such as STEM, college and career readiness, 21st Century Skills, Early College Scholars, Virginia Plan for Dual Enrollment; and/or Virtual Virginia; and
- Selected examples of locations in Virginia where the option is being implemented.

Impact on Fiscal and Human Resources:
None.

Timetable for Further Review/Action:
No further action is required of the Board. VDOE will post the report on the Web site and notify school divisions that the document has been posted.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education receive the report.

Attachment A

Educational Opportunities for Gifted Middle School Students

Virginia Department of Education
Virginia Committee for the Education of the Gifted

2015

Acknowledgements

Virginia Department of Education

Dr. Steven R. Staples, Superintendent of Public Instruction
Dr. John W. Haun, Chief Academic Officer/Assistant Superintendent for Instruction
Mr. Michael Bolling, Director, Office of Mathematics and Governor's Schools
Dr. Donna L. Poland, Specialist, Governor's Schools and Gifted Education

Virginia Advisory Committee for the Education of the Gifted

The Virginia Department of Education would like to express its gratitude to each committee member who has been instrumental in the successful completion of this project. The following subcommittees met from October 2013 through May 2015.

Introduction

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Understanding and Nurturing the Social-Emotional Development of Gifted Middle School Students

Sandra Cole, Retired Secondary and Gifted Education Supervisor, Buchanan County Public Schools
Dr. Janice C. Robertson, School Psychologist, Amelia County Public Schools

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Introduction

The National Association for Gifted Children (NAGC) and the National Middle School Association share a commitment to serving gifted middle school learners as stated in their 2004 joint position paper which emphasizes the variability of middle school gifted learners in the following paragraphs:

> *Early adolescence is generally described as the time between ages 10 and 15. During this developmental span, young adolescents experience a wide range of growth rates in cognitive, physical, social, emotional, and moral dimensions. Change in young adolescents can be rapid and uneven. In addition to the diversity of development implicit in early adolescence, middle schools also reflect diversity in student gender, culture, experience, economic status, interests, and learning preferences. Every middle school classroom also represents a wide array of talents.*
>
> *In light of the inevitable variance in middle school populations, it is critical that middle school educators develop increasing awareness of and skill necessary to address the full range of learner needs—including needs of those who already demonstrate advanced academic abilities and those who have the potential to work at advanced levels.*
>
> *High-ability adolescents may differ from fellow classmates in cognitive skills, interests, modes of learning, and motivation. As a result, their educational needs may also differ in some important ways from those of other young adolescents. Attending to those needs requires informed attention to both equity and excellence in all facets of schooling.*
>
> *Critical to healthy development in the middle grade years is development of positive student affect. Students benefit greatly from learning environments that reinforce their worth as individuals and simultaneously support them in becoming more powerful and productive. For advanced learners, this may require helping students affirm both their abilities and their need to belong to a peer group. Middle level educators need to understand and address the unique dynamics that high-ability and high-potential young adolescents may experience as they seek to define themselves and their roles among peers.*

Gifted learners at the middle school level are a population with distinct educational needs. They have potential that requires differentiated and challenging educational services beyond those provided in the general education program. While the Virginia *Regulations Governing Educational Services for Gifted Students* require that identified students be served through twelfth grade, school divisions are challenged to provide special program options that meet the educational needs of gifted middle school learners.

In July 2013, the Virginia Board of Education charged the Virginia Advisory Committee for the Education of the Gifted (VACEG) with researching quality programming options for high-ability learners at the middle school level. Recognizing that every student is different, and that there is not one way to best serve all gifted learners, research-based best practices suggest that schools and school divisions must offer a continuum of services. The National Association for Gifted Children (NAGC) defines this continuum as "a menu of educational options that are respectful of individual student differences and mindful of classroom and community resources."

This document is designed to help school divisions establish or improve programs for gifted middle school students. It gives schools and school divisions critical information for the development of quality programs that may be helpful during the program planning and evaluation process. It identifies various service options that address the needs of gifted learners at the middle school level and satisfy the requirements for best practices in the *Regulations Governing Educational Services for Gifted Students.* These options are grouped into three categories: advanced learning opportunities in the classroom, accelerated content, and beyond the classroom. Within each category, there are numerous examples to consider. For each service option, the document addresses:

- the ways the option satisfies requirements for best practices in the *Regulations*;
- the support mechanisms associated with the option, such as differentiation, professional development, staffing, funding, space, face-to-face opportunities, virtual learning, and/or technology;
- the learner outcomes that specify what students should know, understand, and be able to do as a result of the learning experiences and student academic growth as well as the social/emotional benefits students receive from participating in the programs;
- the Virginia Department of Education (VDOE) priorities associated with the option, such as Science, Technology, Engineering, Mathematics (STEM), college and career readiness, 21st Century Skills, linking student growth to teacher/program evaluation, Early College Scholars, Virginia Plan for Dual Enrollment and/or Virtual Virginia; and
- selected examples of where the option is being implemented.

Throughout the research process, VACEG members compared the various components of each service option to the *NAGC Pre-K-Grade 12 Gifted Programming Standards*. The standards provide a framework of seven student outcomes with accompanying evidence-based practices.

Please Note: This document is not meant to be a comprehensive review of all possible service options for gifted middle school students. Rather it can serve as a foundation for creating and reviewing programs to extend and enrich the educational experiences of gifted learners throughout the Commonwealth of Virginia.

Understanding and Nurturing the Social-Emotional Development of Gifted Middle School Students

Although those unfamiliar with the gifted population may believe the myth that, overall, these students cope well and even flourish without unique academic and social-emotional

interventions, their exceptional potential and unique life experiences call for tailored affective supports in addition to appropriate academic challenges (Moon, 2009; Peterson, 2003, 2009). Counselors and instructors should teach high-ability students strategies for success geared to their special needs, as many do not learn these vital skills on their own. Unfortunately, many counselors, as well as other school professionals who support students, receive minimal or no preservice training about giftedness (Cross & Cross, 2012). One recent survey of adolescents identified as gifted in arts and humanities revealed that few had received counseling practices specifically designed to address their unique needs (Wood, 2010). This makes high quality inservice training an imperative.

The groundwork for excellence begins before the elementary grades and continues in middle school. For those who later reach prominence in their fields of choice, psychosocial health is a key factor (Subotnik & Jarvin, 2005). Mental health and happiness are positively associated with academic achievement (Huang, 2011; Huebner, 2010; Padhy, Rana, & Mishra, 2011). As highlighted by Peterson and Colangelo (1996), the middle school years are the prime time when gifted students may begin to underachieve. Positive experiences and influences are important at this time of life. Middle schools should emphasize that being studious is positive, and help counteract the prevalent culture of anti-intellectualism (Cross, 2014). Learning to actively cope with rigorous coursework, as well as social and emotional challenges, builds confidence and resilience (Olszewski-Kubilius, 2000; Seligman & Csikszentmihalyi, 2000). Students should be counseled by school professionals as well as parents to navigate a variety of social groups, create meaningful positive relationships, and gain the "grit" needed to excel in their passion areas (Neihart, 2008).

The emergence of outstanding talent from natural ability is a developmental process that involves not only the influence of "environmental catalysts" such as the right learning opportunities, relationships with other youth, mentoring, enrichment activities, school climate, and family characteristics, but also innate personal strengths or "intrapersonal catalysts," as described in the Differentiated Model of Giftedness and Talent (Gagné, 2012). Each student has the right to attain affective well-being (National Association of School Psychologists, 2012), and should have access to appropriate advanced curricula, as well as receive support from family, school, and community to sustain psychological health. The psychological adjustment of advanced students appears to result from the fit of educational placement, the type and level of giftedness, personal attributes, and life circumstances (Neihart, 1999).

Gifted middle school students face unique psychosocial challenges as well as the usual emotional and social struggles associated with puberty (Neihart, Reis, Robinson, & Moon, 2002; Peterson, 2009). Gifted youth share many psychological characteristics with their more typical peers. However, intellectual and analytical development may proceed at a more advanced pace, which can help foster resilience as well as result in asynchronous development and adjustment issues. Social-emotional diversity exists across the gifted population, as well as wide variation in coping mechanisms (Cross, Coleman, & Stewart, 1995; Neihart, 1999). Students who are identified by their schools as both gifted and with a disability for which they receive special education services (twice-exceptional) form one vulnerable subgroup that needs understanding and tailored support.

To foster mental health at the middle school level, teachers and other staff members can help talented students by providing advanced curricula and differentiated instruction, and concurrently teaching strategies that develop resilience, confidence, and positive affect. School professionals should be aware that some gifted students experience a dip in academic self-concept when enrolled in advanced programs with other high-ability students (Marsh & Hau, 2003; Robertson, 2013; Zeidner & Schleyer, 1999). Gifted students need teachers who understand their unique emotional characteristics and the factors affecting their development, their special talents, the need to strengthen personal identity, and the natural drive to belong to a group of peers (National Association for Gifted Children and the National Middle School Association, 2004).

The emerging model of Positive Psychology emphasizes that personal strengths such as physically healthy habits, mindfulness, optimism, thoughtful analysis and decision-making, goal setting, organization, time management, strong communication, relationship building, and stress reduction techniques are learned skills that pave the way to excellence (Neihart, 2008). The three pillars of Positive Psychology are positive traits and strengths, positive experiences, and positive institutions (Seligman & Csikszentmihalyi, 2000). A mindset acknowledging that success results from effort (even for highly able individuals), and an understanding that one's mistakes are opportunities to learn and not indicators of low ability, are also essential skills that can be taught to gifted students (Dweck, 2006). Motivation and intelligence can improve in a school that has adequate resources, differentiates instruction, focuses on problem-solving skills, and provides instructors and coaches well trained to challenge students (Nisbett, 2009).

Emotional intensity, increased academic workload, unrealistic expectations, and pressure to excel in multiple areas in order to gain admission to highly competitive high schools and universities, can increase stress in gifted youth. The risk of depression can increase during transition times such as these. Low income teens often face particular doubts and barriers during transitional times (Tough, 2014). Even the most psychologically healthy gifted middle and high school students can be temporarily thrown off balance when determining how to meet personal needs and external expectations while developing their unique talents. The middle school can help gifted students recognize and identify future possibilities by introducing them to exemplary professionals and mentors who set examples of how personal as well as professional goals can be accomplished. Academically-oriented gifted students tend to explore academic and career interests early, making middle school career investigation, along with acquiring prerequisite academic skills, of prime importance (Achter, Lubinski, & Benbow, 1996; Kim, 2012).

During the final years of middle school, gifted students and their parents must explore the complex maze of high school options, such as Academic Year Governor's Schools and specialty high schools, as they make program and course selections that will have ramifications for higher education and career paths. Academic success does not simplify the career planning process, as academic decisions made as early as middle school can significantly influence their futures. Gifted and talented middle school students need guidance in order to find a good high school match where they will feel comfortable intellectually, as well as emotionally, and where they can become important members of the school community, as school satisfaction is one predictor of academic engagement and success (Elmore & Huebner, 2010).

Evidence-based counseling strategies can improve emotional health. O'Mara , Marsh, Craven, and Debus (2006) conducted a meta-analysis of 145 studies investigating a total of 200 interventions for improving self-concept in children and found that positive change can occur, particularly in programs that address specific domains of self-concept. Learning "active coping" strategies can improve adjustment under controllable stress conditions (Clarke, 2006). A structured small-group model for middle school gifted students (grades 5 through 8), such as the weekly discussion group curriculum developed by Dr. Jean Peterson and associates, can lead the way toward healthier perspectives; insight about social-emotional development and giftedness; improved communication between students, parents, and teachers; and meaningful sharing among the participants, even when initial student resistance is present (Peterson & Lorimer, 2011). School counselors and school psychologists are qualified to lead such groups in middle schools, and gifted program coordinators and teachers can become effective group facilitators when provided with training and support (Peterson, 2008; Peterson & Lorimer, 2011).

The research base for social and emotional learning has grown over the past three decades, and cost-effective school curricula and counseling programs now exist that focus on prevention of social-emotional difficulties and the development of personal and interpersonal strengths (Durlak, Weissburg, Dymnicki, Taylor, & Schellinger, 2011; Greenberg, et al., 2003). One important resource is the *Handbook for Counselors Serving Students with Gifts and Talents*, edited by Cross and Cross (2012) of The College of William and Mary. There are several national resources promoting coordinated efforts to improve social-emotional health in conjunction with academic learning: Supporting Emotional Needs of the Gifted (SENG); The Collaborative for Academic, Social, and Emotional Learning (CASEL); and The National School Climate Center (NSCC). Middle schools as positive supportive institutions should focus on building social-emotional as well as academic strength.

Advanced Learning Opportunities in the Classroom: Differentiated Instruction

Differentiated instruction in the heterogeneous classroom offers all students opportunities to learn at increasingly advanced levels, appropriate to their level of readiness. To meet the needs of identified gifted students who differ in achievement, ability, and interests from their age-level peers, teachers and administrators must plan sequential and systematic instruction supported by high-quality curricular materials (NAGC, 1994). Tomlinson, Brimijoin and Narvaez (2008) characterize differentiation of instruction as "systematic attention to readiness, interest, and learning profiles" of students through the flexible use of classroom "space, time, materials, groupings and instruction." They emphasize the critical importance of pre-assessment in order to ensure students' advancement through targeted learning experiences.

Advanced Learning Opportunities in the Classroom: Differentiated Instruction & Cluster Grouping

Cluster grouping of gifted students provides them the opportunity to engage in learning experiences with intellectual and academic peers on a regular basis in the general education

classrooms. These students are assigned to cluster teachers who must have training in meeting the unique educational needs of advanced learners to foster continuous intellectual growth. In the middle school setting, this model allows students access to an appropriately paced curriculum providing for increased depth and complexity. Cluster teachers and gifted resource teachers work collaboratively to plan and implement appropriate curricular interventions. These interventions include, but are not limited to: formative assessments, performance assessments, compacted general education curriculum, cooperative learning within the cluster group, and other differentiated learning opportunities.

How does the program/model satisfy requirements for best practices in the *Regulations Governing Educational Services for Gifted Students*?

Virginia Regulations	How Does Cluster Grouping Satisfy This Requirement?
8 VAC 20-40-60A.10 Evidence that gifted education service options from kindergarten through twelfth grade are offered continuously and sequentially, with instructional time during the school day and week to (i) work with their age-level peers, (ii) work with their intellectual and academic peers, (iii) work independently; and (iv) foster intellectual and academic growth of gifted students. Parents and legal guardians shall receive assessment of each gifted student's academic growth. Subject-related advanced courses that draw small numbers of students can be clustered together with one teacher.	Cluster grouping of gifted students provides the opportunity to engage in learning experiences with intellectual and academic peers on a regular basis in the general education classrooms in addition to independent work and learning time with age-level peers.

What support mechanisms are associated with the program/model?
Support mechanisms associated with cluster grouping require in-depth understanding by building and division administrators. In addition, students should be instructed by teachers with strong knowledge of the academic and social-emotional needs of gifted learners. Teachers need on-going professional development opportunities with release time, funding for continuing education, and substitute support. (See *NAGC Pre-K-Grade 12 Gifted Programming Standards, Standard Six Professional Development, 2010* for further information.)

What learner outcomes and student benefits occur with the program/model?
Learner outcomes associated with cluster grouping include:

- improved academic achievement; and
- increased student engagement.

Student benefits associated with cluster grouping include:

- better preparation for advanced-level courses in high school;
- provision for the social-emotional needs of gifted learners;
- opportunities to experience challenging learning with intellectual peers; and
- meaningful interactions with age-level peers.

What VDOE initiatives are associated with this program/model?
STEM: Cluster grouping based on readiness and interest in STEM classes prepares students for advanced STEM courses in postsecondary education.

College and Career Readiness: Through cluster grouping, students explore advanced content and areas of interests with academic and intellectual peers.

21st Century Skills: Cluster grouping affords students increased opportunities to collaborate on content problems and issues, to explore creative processes and solutions, and to develop competency in online technology resources and tools.

What are examples of where this program/model is being implemented?
Examples of cluster grouping include:

- Amherst County Public Schools
  Identified gifted middle school students are cluster grouped in core classes to provide collaborative opportunities for advanced students. Administrators ensure that identified students are placed with intellectual peers when making class assignments, and teachers of gifted cluster groups are uniquely trained and supported so that they may best meet the needs of highly-able learners.

- Fairfax County Public Schools
  In the Franklin Middle School Spectacle Program, gifted students are clustered together for the four core subject areas and they work with their teachers on interdisciplinary projects based on student interest with a focus on critical and creative thinking, collaboration, and citizenship.

- Salem City Public Schools
  Sixth grade students are organized in cluster groups in the four core subject areas which allow a team of teachers to provide for the academic and social-emotional needs of gifted learners. Students are prepared to succeed in advanced courses in seventh and eighth grades.

- Lexington City Schools
  Sixth grade students are clustered for language arts and math so that teachers can plan differentiated activities in those specific academic areas. These sixth-grade clusters are merged in ability-grouped seventh-grade classes that move at an accelerated learning pace.

Advanced Learning Opportunities in the Classroom: Differentiated Instruction and Acceleration

Educational acceleration is the practice of presenting curricular content at a faster pace or at an earlier age than usual. Common examples of acceleration include, but are not limited to, advanced-level classes, completing curriculum in a shorter period of time, acceleration in content areas, credit by examination, grade skipping, and early entrance into college. In all forms of acceleration, it is important that the content be differentiated to meet the needs of individual

students. The choice of how to accelerate the curriculum should be based on students' individual strengths and their progress toward expertise in a particular subject or field.

Other aspects of acceleration are discussed under the heading Accelerated Content, starting on page 18. These include high school courses for middle school students, Pre-Advanced Placement, Center for Talented Youth at Johns Hopkins University, honors classes, International Baccalaureate (IB) Middle Years, and early college academies.

How does the program/model satisfy requirements for best practices in the Regulations Governing Educational Services for Gifted Students?

Virginia Regulations	How Does Acceleration Satisfy This Requirement?
8 VAC 20-40-20 "Appropriately differentiated curriculum and instruction" means curriculum and instruction adapted or modified to accommodate the accelerated learning aptitudes of identified students in their areas of strength. Such curriculum and instructional strategies provide accelerated and enrichment opportunities that recognize gifted students' needs for (i) advanced content and pacing of instruction, (ii) original research or production, (iii) problem finding and solving, (iv) higher-level thinking that leads to the generation of products; and (v) a focus on issues, themes, and ideas within and across areas of study. Such curriculum and instruction are offered continuously and sequentially to support the achievement of student outcomes, and provide support necessary for these students to work at increasing levels of complexity that differ significantly from those of their age-level peers.	The placement and grouping of students, based on their academic progress and intellectual needs rather than strictly adhering to age or grade-level curricula, provides access to advanced learning opportunities.

What support mechanisms are associated with the program/model?
Support mechanisms for acceleration include the professional staff's in-depth understanding of the model, clear guidelines for implementation, professional development, and ongoing and appropriate monitoring and evaluation of the program.

What learner outcomes and student benefits occur with the program/model?
Learner outcomes that may be associated with acceleration include:

- improved academic achievement and/or higher standardized test results;
- instruction that fits the academic needs of the accelerated student;
- access to more challenging options in their strength area(s) during the high school years;
- opportunity to take a broader range of Advanced Placement (AP), STEM, and other advanced courses by completing prerequisites prior to entering high school or earlier in their high school program; and

- reduction of the time needed for students to complete high school and college education.

Student benefits that may be associated with acceleration include:

- increased motivation toward schooling;
- increased student satisfaction and well-being;
- challenging academic experiences that develop sound work ethics; and
- meaningful interactions with intellectual peers.

What VDOE initiatives are associated with this program/model?
College and Career Readiness: Through acceleration, students pursue interests at their cognitive ability level, which prepares them for appropriate postsecondary opportunities.

Virtual Virginia: The VDOE's Virtual Virginia program offers preparation for AP and honors classes, as well as academic electives and world languages. Eligible students enroll in Virtual Virginia through their local schools.

What are examples of where this program/model is being implemented?
Many school divisions across the Commonwealth offer a variety of acceleration opportunities such as Pre-AP courses, high school courses offered at the middle school, IB Middle Years Program, and Virtual Virginia.

Advanced Learning Opportunities in the Classroom: STEM Programs

STEM is a student-centered, project-based, interdisciplinary instructional approach that integrates science, technology, engineering, and mathematics. STEM programs are based on student driven inquiry and problem solving to facilitate innovation through collaboration, communication, creativity, and critical thinking. STEM programs allow students to access fast-paced, in-depth learning of curriculum content with time for students to go into greater depth and or breadth on a given topic.

How does the program/model satisfy requirements for best practices in the *Regulations Governing Educational Services for Gifted Students*?

Virginia Regulations	How Do STEM Programs Satisfy This Requirement?
8 VAC 20-40-20 "Appropriately differentiated curriculum and instruction" means curriculum and instruction adapted or modified to accommodate the accelerated learning aptitudes of identified students in their areas of strength. Such curriculum and instructional strategies provide accelerated and enrichment opportunities that recognize gifted students' needs for (i) advanced content and pacing of instruction, (ii) original research or production, (iii) problem finding and solving, (iv) higher-level thinking that leads to the generation of products; and (v) a focus on issues, themes, and ideas within and across areas of study. Such curriculum and instruction are offered continuously and sequentially to support the achievement of student outcomes, and provide support necessary for these students to work at increasing levels of complexity that differ significantly from those of their age-level peers.	STEM is a student-centered, project-based, interdisciplinary instructional approach that integrates science, technology, engineering, and mathematics. STEM programs may also include the arts to stimulate connections between critical and creative thinking.

What support mechanisms are associated with the program/model?

- An integrated 6th-8th grade STEM curriculum for teachers to implement in their classrooms is the key component to a successful STEM program.
- Professional development for teachers in project based learning and student inquiry is strongly suggested.
- Dynamic partnerships with businesses, higher education institutions, parents, and community organizations support collaboration and real-world application opportunities.
- Clear guidelines for program implementation with ongoing monitoring and evaluation are strongly suggested.
- Afterschool STEM clubs and summer camps provide additional support mechanisms.

What learner outcomes and student benefits occur with the program/model?

Learner outcomes associated with STEM Programs include:

- creation of digital portfolios to demonstrate knowledge, skills and understanding;
- improved understanding of STEM content;
- access to more innovative and challenging curriculum content;
- attainment of prerequisite skills for STEM careers; and
- increased numbers of students entering STEM career fields.

Student benefits associated with STEM Programs include:

- instruction that is tailored to skill development for the 21st Century to include collaboration, communication, critical thinking, and creative problem solving;
- challenging academic experiences that help develop STEM skills and thinking;
- opportunities to participate in a rigorous, hands-on, and relevant educational model;
- meaningful interactions with like-minded peers and educators;
- opportunity for exploration of innovative ideas incorporating a broad range of digital tools; and
- increased student engagement.

What VDOE initiatives are associated with this program/model?

College and Career Readiness: Student's Academic and Career Plans incorporate courses that include STEM related options.

21st Century Skills: Many STEM programs, such as FIRST® robotics, are supported by the schools in ordered to provide opportunities for students to demonstrate 21st Century skills in a real-world setting.

What are examples of where this program/model is being implemented?

- Virginia Beach City Public Schools
  Corporate Landing Middle School is a comprehensive middle school in a large school division, Virginia Beach City Public Schools, with approximately 1,400 students in grades 6-8. Integrated STEM has been a focus at this school for the past three years. All teachers and staff have participated in professional development related to STEM and each interdisciplinary team has designed and implemented at least one interdisciplinary problem-based learning STEM unit. A majority of teams continue to design and implement several STEM focused units of study each year.

- Fairfax County Public Schools
  Project SPARK is an innovative project designed to prepare middle school students to be exemplary global citizens, strong creative thinkers, and problem solvers, under the guidance of highly qualified educators from FCPS in partnership with George Mason University.

Advanced Learning Opportunities in the Classroom: Digital Learning

Digital learning, which includes online and virtual education, allows gifted students to select courses that meet their readiness and interests levels, to proceed at their own pace, and to enroll in specific classes earlier than their age peers. Teachers can use technology tools such as wikis, blogs, Weblogs, digital media, and podcasting to create free and open access to academic environments that support creativity and achievement. Students can participate in student-focused instruction with rich resources that have expert guidance readily available. Twice exceptional students (students identified as gifted with a disability that requires accommodations in order for their potential to be realized) in particular may benefit from online learning experiences due to the potential for accommodating individual learning strengths. Researchers

report that few online programs are designed specifically for gifted students; however, higher-level courses can provide appropriate opportunities for advanced learning (Adams & Olszewski-Kubilius, 2007; Olthouse, J. M., 2012; Olszewski-Kubilius and Corwith, 2011).

How does the program/model satisfy requirements for best practices in the *Regulations Governing Educational Services for Gifted Students*?

Virginia Regulations	How Does Digital Learning Satisfy This Requirement?
8 VAC 20-40-40A Each school division shall establish uniform procedures for screening, referring, identifying, and serving students in kindergarten through twelfth grade who are gifted in general intellectual or specific academic aptitude. If the school division elects to identify students in general intellectual aptitude, it shall provide service options from kindergarten through twelfth grade. Identification in a specific academic aptitude area may occur as assessment instruments exist to support identification. If the school division elects to identify students in one or more selected academic aptitude areas, it shall provide service options through twelfth grade.	Schools can use online resources to offer gifted service options that continue from one grade level and/or content area to the next. Students can select curricular options online in multiple academic areas. Digital learning allows for variance in readiness and pacing appropriate to gifted learners.
8 VAC 20-40-60A.10 Evidence that gifted education service options from kindergarten through twelfth grade are offered continuously and sequentially, with instructional time during the school day and week to (i) work with their age-level peers, (ii) work with their intellectual and academic peers, (iii) work independently; and (iv) foster intellectual and academic growth of gifted students. Parents and legal guardians shall receive assessment of each gifted student's academic growth.	Distance learning offers students opportunities to work with academic peers in order to foster intellectual growth. Assessment tools offered by online programs can be used to report academic growth.

What support mechanisms are associated with the program/model?
Support mechanisms associated with digital learning include enhanced access to online technology, differentiation for individual students' needs, professional development through online toolkits, and the collaborative development of pedagogical and evaluative strategies and practices. Professional development should address both the intellectual and the social-emotional needs of gifted learners.

What learner outcomes and student benefits occur with the program/model?
Learner outcomes associated with digital learning include:

- increased student responsibility for self-paced learning; and

- success on course evaluations: Olszewski-Kubilius and Corwith (2011) reports that 64 percent of gifted students who take online AP courses also take the AP test and, of those taking the test, 63 percent earn a score of a 4 or 5.

Student benefits associated with digital learning include:

- access to challenging courses while students remain at home, in school, and with peers;
- access to courses not offered at the school; and
- ability to pursue advanced interests.

What VDOE initiatives are associated with this program/model?

College and Career Readiness – Through distance learning programs, middle school students have access to online advanced courses.

21st Century Skills – Online courses include technology courses such as Information Technology Essentials and Applied Multimedia Technology.

Virtual Virginia – The VDOE's Virtual Virginia program offers flexible options for the diverse educational needs of middle school students and their families. Offerings include preparation for Advanced Placement and honors courses, as well as academic electives and world languages. Eligible students enroll in Virtual Virginia through their local schools.

What are examples of where this program/model is being implemented?

Examples of virtual education include but are not limited to:

- Virtual Virginia offers preparation for AP and honors courses as well as academic electives and world languages. Eligible students enroll in Virtual Virginia through their local schools.
- Virginia Beach City Public Schools' Quality Connection, a video conferencing instructional technology, allows students in middle school to enroll in a course that is not offered on-site due to low enrollment.
- Arlington Public Schools' Virtual@APS offers for-credit courses, such as Arabic and Chinese, to middle school students as well as other courses available through other distance learning organizations.

Additional opportunities for distance learning include:

- MIT OpenCourseWare (OCW) is a learning program of secondary level and college/university courses with materials, activities, educational videos/tutorials, and other online resources for students, parents, and educators. OCW has over 2,000 courses in 33 different disciplines.
- OCW Consortium provides interested participants access to the free materials/networks by registering with the consortium.
- Talent Identification Program (TIP), Duke University offers an electronic studies program with eight Web-based courses for grades 8-12 which includes online discussions and real-time collaboration.
- Center for Talent Development (CTD), Northwestern University oversees Gifted LearningLinks courses for gifted students in grades 3-12, which includes enrichment

courses, AP courses, online discussions, and allows communication with teachers via e-mail.

- Center for Talented Youth (CTY), Johns Hopkins University serves advanced K-12 learners worldwide offering computer-based multimedia programs in mathematics and computer science at the elementary through beginning college level. In addition, CTY allows students to earn high school credit and take AP courses.

Advanced Learning Opportunities in the Classroom: Advocacy and Access for Underrepresented Groups

Advocacy and access for underrepresented groups refers to the practice within the field of gifted education of recognizing and supporting the potential for superior performance among students who may be overlooked due to various factors (i.e., disadvantaged environment, learning English as a second language, or a learning disability). Divisions strive to address specific needs of high potential students by creating inclusive identification protocols, utilizing teaching programs and strategies that meet their needs, and providing extra support such as afterschool tutoring and community and university mentors.

How does the program/model satisfy requirements for best practices in the *Regulations Governing Educational Services for Gifted Students*?

Virginia Regulations	How Does Advocacy and Access for Underrepresented Groups Satisfy This Requirement?
8 VAC 20-40-20 "Gifted students" means those students in public elementary, middle, and secondary schools beginning with kindergarten through twelfth grade who demonstrate high levels of accomplishment or who show the potential for higher levels of accomplishment when compared to others of the same age, experience, or environment. Their aptitudes and potential for accomplishment are so outstanding that they require special programs to meet their educational needs.	Students with experiential or environmental disadvantages, who show potential for superior accomplishment, are encouraged to take advantage of advanced learning opportunities.

Virginia Regulations	How Does Advocacy and Access for Underrepresented Groups Satisfy This Requirement?
8VAC 20-40-40.D1 Identification of students for the gifted education program shall be based on multiple criteria established by the school division and designed to seek out those students with superior aptitudes, including students for whom accurate identification may be affected because they are economically disadvantaged, have limited English proficiency, or have a disability. Data shall include scores from valid and reliable instruments that assess students' potential for advanced achievement, as well as instruments that assess demonstrated advanced skills, conceptual knowledge, and problem-solving aptitudes.	Students with experiential or environmental disadvantages are able to demonstrate their superior potential or ability for achievement through reliable and valid identification instruments. Once identified as gifted, students receive advanced instruction that meets their educational needs.
8VAC 20-40-60.A7 The local plan shall include the following components: Assurances that (i) the selected and administered testing and assessment materials have been evaluated by the developers for cultural, racial, and linguistic biases; (ii) identification procedures are constructed so that those procedures may identify high potential or aptitude in any student whose accurate identification may be affected by economic disadvantages, by limited English proficiency, or by disability; (iii) standardized tests and other measures have been validated for the purpose of identifying gifted students; and (iv) instruments are administered and interpreted by a trained personnel in conformity with the developer's instructions;	Students have opportunities to demonstrate their gifted potential or ability through multiple criteria and testing instruments that are deemed to be free of bias toward any disadvantaged group.
8VAC 20-40-60.A14 Procedures for the annual review of the effectiveness of the school division's gifted education program, including the review of screening, referral, identification, and program procedures toward the achievement of equitable representation of students, the review of student outcomes and the academic growth of gifted students. Such review shall be based on multiple criteria and shall include multiple sources of information.	Divisions continuously review their procedures and data related to gifted education programs to ensure equal representation of all student groups.

What support mechanisms are associated with the program/model?

Olszewski-Kubilius and Clarenbach (2012) report that successful programs for underrepresented groups incorporate extra learning time, the provision of expanded student support networks, and

an enriched curriculum. They further note that students need certain psychological skills such as a growth mindset (Dweck, 2006), safety from stereotype threat (Steele & Aronson, 1995), intrinsic motivation, and belief in their abilities. Students' well-being and growth is enhanced by an emphasis on strengths and problem solving.

What learner outcomes and student benefits occur with the program/model?
Learner outcomes associated with advocacy and access for underrepresented groups include:

- increased development and achievement in areas of giftedness; and
- improved college and career opportunities.

Student benefits associated with advocacy and access for underrepresented groups include:

- increased opportunities to maximize learning;
- collaborating with academic peers; and
- increased options for advanced learning.

What are examples of where this program/model is being implemented?
Examples of advocacy and access for underrepresented groups include:

- Norfolk Public Schools
  The Young Scholars Program is a citywide advanced liberal arts program offered at two middle schools in low-income neighborhoods. Students identified as gifted in the area of general intellectual ability are invited to apply. To ensure equitable representation, guidance counselors and gifted education staff at each elementary school are trained in the application process and urged to identify and prepare potential applicants.

- Fairfax County Public Schools
  It's Electrifying: Engage, Excite, Excel is offered to rising seventh- and eighth-grade gifted students from underrepresented groups, including disadvantaged and twice exceptional students. During this summer program, students will have an opportunity to raise questions about real-world problems, propose solutions, present data from independent studies, and work in collaborative groups to develop authentic final products.

Accelerated Content

Gifted students benefit when given opportunities to progress at an accelerated pace through content that meets both their academic needs and personal interests. The *Code of Virginia* (2012) defines an accelerated course as "one that can be completed in less than the normal amount of time; the process of progressing through the school grades at a rate faster than that of the average student, either by skipping grades or by rapidly mastering the work of one course and moving to the next higher course."

While there are several means to provide accelerated content to students, common structures include:

- High School Courses for Middle School Students
- Pre-Advanced Placement
- Honors Classes

- International Baccalaureate (IB) Middle Years Programme (MYP)
- Early College Academies
- Online Educational Opportunities
- Magnet Schools and Academies
- Center for Talented Youth, Johns Hopkins University

Accelerated Content: High School Courses for Middle School Students

To meet the need for increased academic rigor, school divisions offer high school level courses to middle school students. These courses provide opportunities for gifted students to explore advanced curricula while receiving credit that transfers to high school.

How does the program/model satisfy requirements for best practices in the *Regulations Governing Educational Services for Gifted Students*?

Virginia Regulations	How Do High School Courses for Middle School Students Satisfy This Requirement?
8 VAC 20-40-40 Identified gifted students shall be offered placement in an instructional setting that provides: 1. Appropriately differentiated curriculum and instruction provided by professional instructional personnel trained to work with gifted students; and 2. Monitored and assessed student outcomes that are reported to the parents and legal guardians.	Although not geared towards gifted students only, school divisions can recommend high school courses to identified gifted students. Furthermore, divisions can ensure teachers who teach high school courses to middle schools students are trained to teach gifted students.

What support mechanisms are associated with the program/model?
Support mechanisms for teaching high school courses to middle school students include teachers who are highly qualified in the subject area, high-quality professional development, instructional planning and assistance from gifted resource teachers, and policies in place to ensure full transfer of credit for high school courses taken in middle school.

What learner outcomes/student benefits occur with the program/model?
- advanced academic rigor within the middle school program;
- earlier access to advanced course work such as AP courses in high school;
- exposure to high school workload and expected academic standards; and
- high school credit earned during middle school.

What VDOE initiatives are associated with this program/model?
STEM: By completing core high school math courses in middle school, students have the ability to pursue advanced courses in STEM fields once they reach high school.

College and Career Readiness: Completing high school courses in middle school provides a foundation for a robust high school transcript when applying to college. It allows students to

pursue a more varied course of study, such as vocational training within their high school careers, thus helping to build greater career awareness and readiness.

21st Century Skills: Some divisions offer elective courses at the high school level to middle school students that build 21st Century Skills such as life and career skills, information media and technology skills, and learning and innovation skills in courses such as computer and business application (Curriculum and Instruction, 2009).

What are examples of where this program/model is being implemented?
Throughout Virginia, students have access to high school credit courses in math and world languages such as Algebra I and Spanish I. Additionally, middle school students can access high school courses through Virtual Virginia.

Accelerated Content: Pre-Advanced Placement

Pre-Advanced Placement (Pre-AP) is a way to identify curriculum that is strategically planned to prepare students with the skills and knowledge base they will need to be successful in subsequent Advanced Placement courses. According to the College Board,

> *Pre-AP is based on the following two important premises. The first is the expectation that all students can perform well at rigorous academic levels. This expectation should be reflected in curriculum and instruction throughout the school such that all students are consistently being challenged to expand their knowledge and skills to the next level. The second important premise of Pre-AP is the belief that we can prepare every student for higher intellectual engagement by starting the development of skills and acquisition of knowledge as early as possible. Addressed effectively, the middle and high school years can provide a powerful opportunity to help all students acquire the knowledge, concepts, and skills needed to engage in a higher level of learning (Preparing Every Student, 2014).*

The College Board provides an official Pre-AP program in English language arts and mathematics for grades 6-12 called SpringBoard®. This is a comprehensive curriculum aligned with Common Core State Standards that includes professional development, formative assessments, and instructional software and materials; however, many divisions may find this cost-prohibitive.

The College Board offers alternative professional development opportunities in Pre-AP strategies to "equip all middle and high school teachers with the strategies and tools they need to engage their students in active, high-level learning, thereby ensuring that every middle and high school student develops the skills, habits of mind, and concepts they need to succeed in college" (Preparing Every Student, 2014).

How does the program/model satisfy requirements for best practices in the *Regulations Governing Educational Services for Gifted Students*?

Virginia Regulations	How Does Pre-AP Program Satisfy This Requirement?
8 VAC 20-40-20 "Appropriately differentiated curriculum and instruction" means curriculum and instruction adapted or modified to accommodate the accelerated learning aptitudes of identified students in their areas of strength. Such curriculum and instructional strategies provide accelerated and enrichment opportunities that recognize gifted students' needs for (i) advanced content and pacing of instruction, (ii) original research or production, (iii) problem finding and solving, (iv) higher-level thinking that leads to the generation of products; and (v) focus on issues, themes, and ideas within and across areas of study. Such curriculum and instruction are offered continuously and sequentially to support the achievement of student outcomes, and provide support necessary for these students to work at increasing levels of complexity that differ significantly from those of their age-level peers.	The College Board intends for Pre-AP courses to ensure that "students are consistently being challenged to expand their knowledge and skills to the next level" in an effort to prepare them "for higher intellectual engagement by starting the development of skills and acquisition of knowledge as early as possible." With this preparation for ever more challenging coursework in high school, these middle school courses allow students to accelerate in their areas of strength and begin developing college level skills such as writing essays or solving complex, free response mathematics and science questions.
8 VAC 20-40-40 Each school division shall establish uniform procedures for screening, referring, identifying, and serving students in kindergarten through twelfth grade who are gifted in general intellectual or specific academic aptitude. If the school division elects to identify students in general intellectual aptitude, it shall provide service options from kindergarten through twelfth grade. Identification in a specific academic aptitude area may occur as assessment instruments exist to support identification. If the school division elects to identify students in one or more selected academic aptitude areas, it shall provide service options through twelfth grade.	As a precursor to AP, the Pre-AP Program allows divisions to offer students the opportunity to build skills and background knowledge through rigorous courses in academic subjects, preparing them for the increasing demands of challenging coursework in their high school careers. This supports the requirement that students identified as gifted in general intellectual or specific academic aptitude receive continuous service through twelfth grade.

Virginia Regulations	How Does Pre-AP Program Satisfy This Requirement?
8 VAC 20-40-60A.10 Evidence that gifted education service options from kindergarten through twelfth grade are offered continuously and sequentially, with instructional time during the school day and week to (i) work with their age-level peers, (ii) work with their intellectual and academic peers, (iii) work independently; and (iv) foster intellectual and academic growth of gifted students. Parents and legal guardians shall receive assessment of each gifted student's academic growth.	The Pre-AP Program provides an opportunity for students to spend time with intellectual and academic peers as well as with their age-level peers who share their interest in specific academic areas and who may share their intellectual strengths. It also provides skills and background knowledge to prepare students for the increased demand of challenging high school coursework, like AP, thus ensuring a smoother continuum of service options from middle school to high school.
8 VAC 20-40-60A.12 Policies and procedures that allow access to programs of study and advanced courses at a pace and sequence commensurate with their learning needs.	Like AP, the Pre-AP program provides flexibility for schools and students. Students can enroll in Pre-AP courses appropriate to their interests and abilities within the guidelines of the local school division.

What support mechanisms are associated with the program/model?

- Live workshops that provide professional development for Pre-AP teachers are available through many institutions, including the College of William and Mary's Annual Pre-AP Summer Institute. A list of available workshops and online seminars is available on the College Board Web site.

- In addition to the summer institute and occasional half-day workshops, the College Board offers free webinars on a monthly basis. Topics range from creating a college-going culture or mindset to tips on AP exam preparation. Such resources could assist middle school teachers in preparing gifted students for higher-level curricular opportunities in high school in college.

- Teachers also have access to an active online community through AP Central and can connect with subject area and grade level peers around the world to share ideas and resources.

What learner outcomes and student benefits occur with the program/model?

- development of the skills, habits of mind, and concepts that students need to succeed in higher-level classes and in college, since Pre-AP teacher training reflects topics, concepts, and skills found in AP courses;
- building academic confidence;
- enrichment opportunities for outstanding middle school students in academic coursework; and
- exposure to the rigor of higher-level high school coursework.

What VDOE initiatives are associated with this program/model?
STEM: In 2013, the College Board's *9th Annual AP Report to the Nation*, documented that the number of students taking AP mathematics and science exams nationally is increasing. Further, the report cites a study from the Harvard Education Press indicating that minorities and females who take AP mathematics and science exams are more likely to major in STEM field. One Boston College study cited in the report involved the Trends in International Mathematics and Science Study (TIMSS); it revealed that students who took AP mathematics and science courses, and in particular those who earned exam scores of at least three, performed better than students from most other countries on the international tests. If Pre-AP students are better prepared for AP coursework in science and mathematics, they may score better on the corresponding exams and magnify the positive impact of an AP curriculum.

College and Career Readiness: Pre-AP courses play an important role in preparing students for college by exposing them to the advanced content and skills they will encounter in advanced high school courses and college.

What are examples of where this program/model is being implemented?
One example of a Pre-AP program is:

- Newport News City Public School
  Booker T. Washington Middle School is a Marine Science & Pre-Advanced Placement Magnet School that offers an interdisciplinary curriculum with an emphasis on Virginia's coastal habitats. It is designed to prepare students with skills, concepts, and habits of mind needed to succeed in AP courses and in college.

Throughout the Commonwealth of Virginia, Pre-AP courses are offered at the middle school level. Aside from those schools that choose to purchase the SpringBoard® curriculum, the College Board allows individual school divisions to determine the curriculum and teacher training required for a course that is labeled "Pre-AP"; however, the expectation of high-level content and appropriate professional development persists.

Accelerated Content: Honors Classes

The *Code of Virginia* defines an honors course as "a course offered to academically advanced students to provide opportunities to study and learn with other advanced students and to accelerate their learning in a specific content area . . . courses are designed to be more challenging by covering additional topics or some topics in greater depth" (8VAC20-160-10).

Providing honors-level course options is a flexible means of introducing increased rigor into middle school programming to better meet student needs. School divisions can purposefully determine which courses and areas of study need to be offered as an honors course in each grade.

How does the program/model satisfy requirements for best practices in the *Regulations Governing Educational Services for Gifted Students*?

Virginia Regulations	How Do Honors Courses Satisfy This Requirement?
8 VAC 20-40-20 Learning needs of gifted students for advanced and complex content that is paced and sequenced to respond to their persistent intellectual, artistic or technical curiosity; exceptional problem solving abilities; rapid acquisition and mastery of information; conceptual thinking processes; and imaginative expression across a broad range of disciplines. **8 VAC 20-40-60.10** Students work with age-level peers; students' work fosters intellectual and academic growth of gifted students.	Students in the middle school have the opportunity to be grouped with academic peers. Honors classes are not populated with only gifted students. Gifted students are typically enrolled in honors classes if they are the only advanced coursework available. The National Association for Gifted Children's publication, *2012-2013 State of the States in Gifted Education,* reported that honors/advanced coursework was the most frequently used delivery model in middle school among reporting states.

What support mechanisms are associated with the program/model?
Support mechanisms vary by division. Courses can be designed to integrate concepts and skills that are above grade level. Exposure to advanced curriculum is a mechanism that can help meet the needs of gifted students by accelerating their eligibility to take advanced coursework at an earlier age. Endorsement in gifted instruction is not mandated at the state level for instructing honors courses. However, some divisions may require an add-on gifted education endorsement or specific training in gifted education in order to teach honors or gifted courses.

What learner outcomes/student benefits occur with the program/model?
Gifted students benefit from meaningful and challenging learning activities that address their academic needs in a discipline of interest or strength.

Student benefits associated with honors courses could include:

- grouping with intellectual peers;
- accelerated pacing of content;
- in-depth exploration of content;
- regular access to problem-based learning;
- research and independent study opportunities; and
- development of enhanced critical thinking skills.

What VDOE initiatives are associated with this program/model?
STEM: Access to more rigorous curriculum in middle school allows students to develop the analytical skills and interest in science and math classes that create the foundation for STEM courses and extracurricular opportunities in both their middle and high school years.

College and Career Readiness: Completing honors courses in middle school prepares students for a more rigorous course load in high school and creates a foundation for more varied experiences such as internships or work-study programs.

21st Century Skills: Honors courses provide access to greater rigor in both content and skills for students. Working with academic peers, students are able to enhance their collaborative, creative, and critical thinking skills while exploring more complex content.

Accelerated Content: International Baccalaureate (IB) Middle Years Programme (MYP)

As cited in the *Virginia Administrative Code,* an International Baccalaureate® (IB) course is "an advanced-level course with a syllabus approved by the International Baccalaureate Organization (IBO) and meeting the criteria offered through the IBO program" (8VAC20-16-10).

The International Baccalaureate® (IB) "aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect. To this end, IB works with schools, governments, and international organizations to develop challenging programs of international education and rigorous assessment. These programs encourage students across the world to become active, compassionate, and lifelong learners who understand that other people, with their differences, can also be right" (International Baccalaureate Organization, 2013).
IB consists of the following elements:

- development of curriculum;
- assessment of students;
- training and professional development of teachers; and
- authorization and evaluation of schools.

IB works with 3,290 schools in 141 countries to offer the four IB programmes to approximately 969,000 students. IB offers three programs for students aged 3 to 19. The programs can be offered individually or as a continuum by IB World Schools.

- The Primary Years Programme (PYP) for students aged 3 to 12 started in 1997 and is offered by 845 IB World Schools.
- The Middle Years Programme (MYP) for students aged 11 to 16 started in 1994 and is offered by 916 IB World Schools.
- The Diploma Programme (DP) for students aged 16 to 19 started in 1968 with first examinations in 1970 and is offered by 2,292 IB World Schools.
- The Career-related Programme (CP) for students aged 16 to 19 is a new program within the IB and is offered at 53 IB World Schools.

(International Baccalaureate Organization, 2013)

The MYP is designed to be the curriculum for the entire school. It serves as the link in the IB continuum between the PYP and the DP.

How does the program/model satisfy requirements for best practices in the *Regulations Governing Educational Services for Gifted Students*?

Virginia Regulations	How Does an IB Programme MYP Satisfy This Requirement?
8 VAC 20-40-60A.10 Evidence that gifted education service options from kindergarten through twelfth grade are offered continuously and sequentially, with instructional time during the school day and week to (i) work with their age-level peers, (ii) work with their intellectual and academic peers, (iii) work independently; and (iv) foster intellectual and academic growth of gifted students. Parents and legal guardians shall receive assessment of each gifted student's academic growth.	The IB Programme MYP consists of eight subject groups integrated through five areas of interaction providing global contexts for learning. Students are required to study at least two languages, humanities, sciences, mathematics, arts, physical education, and technology. In their final year, students develop an independent personal project to demonstrate the development of their skills and understanding. There are learner profile traits which serve as the fundamentals of the IB mission and they are addressed throughout the curriculum. The entire curriculum and instructional strategies of the IB programme are research-based with the aim of challenging all learners. The MYP's core consists of five contexts for learning. Teachers organize the curriculum through the following areas of interaction: • Approaches to learning (ATL) • Community and service • Health and social education • Environments • Human ingenuity Schools also make use of quantitative and qualitative assessment strategies and tools that provide opportunities for peer- and self-assessment.

What support mechanisms are associated with the program/model?

The IB programme offers continuous training workshops for instructors on three levels ranging from novice to experienced. Workshops are also available for administrators, counselors, and coordinators. Several professional development sessions are offered to focus on instructional strategies. Regional organizations meet to offer collaboration sessions. The IB programme has several websites which can be used to facilitate collaboration between colleagues throughout the world. One Web site, Online Curriculum Centre, has full information about the courses, program policies, and program standards. If school divisions cannot financially afford to send faculty to the workshops, they are able to participate online. IB Answers is a 24 hours a day/7 days a week answering service to address any questions or concerns. While it is not a requirement of the IB programme, schools are encouraged to develop intervention programs to

assist students who may experience difficulty adjusting socially or academically in the IB programme.

What learner outcomes/student benefits occur with the program/model?
The IB Programme:

- offers a continuum of education, consisting of three programs for students aged 3 to 19;
- encourages international-mindedness in IB students (students must first develop an understanding of their own cultural and national identity);
- encourages a positive attitude to learning by encouraging students to ask challenging questions, to critically reflect, to develop research skills, to learn how to learn, and to participate in community service; and
- ensures that the programs are accessible to students in a wide variety of schools - national, international, public, and private - through a worldwide community.

The IB learner profile, found in the IB mission statement, is translated into a set of learning outcomes for the 21st century. The IB learner profile provides a long-term vision of education. It is a set of ideals that can inspire, motivate, and focus the work of schools and teachers, uniting them in a common purpose.

What VDOE initiatives are associated with this program/model?

STEM: The International Baccalaureate® Programme offers a liberal arts education that includes instruction in math, technology, and sciences.

College and Career Readiness: Generally, a large percent of the students enrolled in an IB Programme are college-bound. This fact dictates the schools' implementation of workshops to assist the student with the quest for developing career goals. Because of the emphasis on global understanding, students have a wider view of issues and the ability to express their thoughts effectively. Their writing and analytical skills are strong. The liberal arts education gives them a view of several subjects, and they are able to appreciate and explore a wider range of professions as global citizens.

21st Century Skills: The ability to think, learn, work, solve problems, communicate, collaborate, and contribute effectively are naturally incorporated through the IB learner profile traits which are emphasized throughout the curriculum.

What are examples of where this program/model is being implemented?
As of May 2014, 41 IB (MYP) models were being conducted in the Commonwealth. Each school must apply for, meet the criteria, and be accepted as an IB World School. Each school division has established specific criteria for enrollment of students in the MYP. The IB model is developed for whole school participation.

Accelerated Content: Online Educational Opportunities

Virtual Virginia offers fourteen designated courses to middle school students. These include courses in the languages (Arabic, I, II, and III; Chinese I and II; French I and II; Latin I and II; Spanish I and II), Survey of World Language and Culture, World History, and Geography I.

How does the program/model satisfy the requirements for best practices in the *Regulations Governing Educational Services for Gifted Students*?

Virginia Regulations	How does online coursework satisfy this requirement?
8 VAC 20-40-20 "Appropriately differentiated curriculum and instruction" means curriculum and instruction adapted or modified to accommodate the accelerated learning aptitudes of identified students in their areas of strength. Such curriculum and instructional strategies provide accelerated and enrichment opportunities that recognize gifted students' needs for (i) advanced content and pacing of instruction, (ii) original research or production, (iii) problem finding and solving, (iv) higher-level thinking that leads to the generation of products; and (v) a focus on issues, themes, and ideas within and across areas of study. Such curriculum and instruction are offered continuously and sequentially to support the achievement of student outcomes, and provide support necessary for these students to work at increasing levels of complexity that differ significantly from those of their age-level peers.	Although not specifically for gifted students, school divisions and teachers can recommend online high school courses to identified gifted students and thus provide appropriate content not otherwise available.

What support mechanisms are associated with the program/model?
Students interact with Virtual Virginia support mentors who provide student support along the following lines:

- monitoring students' progress and needs through daily contact with students taking online courses;
- monitoring classroom activities and progress of students taking online classes within the school;
- serving as a liaison between the student, the school, and Virtual Virginia instructors and supervisors regarding student performance and progress;
- proctoring tests and examinations on school grounds;
- collecting student forms required by Virtual Virginia;
- working with the local technology staff to ensure that all students have access to the appropriate technology;
- providing the school with student grades on locally designated dates through the online grade book; and

- notifying counselors immediately of any student's intent to withdraw from Virtual Virginia courses.

What learner outcomes/student benefits occurring with the program/model?
Learner outcomes of advanced academic rigor within the middle school include:

- faster access to AP courses in high school;
- exposure to high school workload;
- earlier exposure to language instruction;
- increased awareness of global cultures;
- high school credit earned during middle school; and
- access to more rigorous coursework.

What VDOE initiatives are associated with this program/model?
College and Career Readiness:

- demonstrably higher college success rates among students who study languages prior to attending college; and
- completing high school courses in middle school provides an academic benefit to students applying to college.

21st Century Skills:

- development of language skills in global languages; and
- taking online course may enhance technology literacy.

What are examples of where this program/model is being implemented?
Virtual Virginia is available to any middle school student who meets the course prerequisites and has approval from the division.

Accelerated Content: Magnet Schools and Academies

The U.S. Department of Education (2014) reports that some localities within the Commonwealth of Virginia have magnet schools, academies, or specialty programs designed for middle school students. There are 29 magnet public schools in Virginia serving 30,787 students. Magnet Schools are public schools that focus on a particular area of study, such as arts, STEM, or science and technology but also offer regular school subjects. The U.S. Department of Education defines magnet schools as schools that "focus on a specific subject, such as science or the arts; follow specific themes, such as business/technology or communications/humanities/law; or operate according to certain models, such as career academies or a school-within-a-school. Some magnet schools require students to take an exam or demonstrate knowledge or skill in the specialty to qualify to go to the school, while others are open to students who express an interest in that area" (School Choices for Parents, 2009).

How does the program/model satisfy requirements for best practices in the *Regulations Governing Educational Services for Gifted Students?*

Virginia Regulations	How do Magnet Schools and Academies satisfy this requirement?
8 VAC 20-40-60A.12 Policies and procedures that allow access to programs of study and advanced courses at a pace and sequence commensurate with their learning needs.	Students have access to a community of learners and to an enriched, accelerated, and advanced curriculum designed to extend and deepen learning opportunities within and outside of the school setting. Although not specifically for gifted students, magnet schools and academies do provide a challenging and rigorous learning environment that provides the opportunity for appropriately differentiated curriculum and instruction. Magnet schools typically have a distinctive curriculum and/or instructional approach that distinguish them.

What learner outcomes/student benefits occur with the program/model?
Gifted students benefit from meaningful and challenging learning activities addressing their unique characteristics and needs. Many magnet schools operate with a cohort model, allowing students consistent interaction with similarly skilled students. Magnet schools provide a challenging and rigorous program, based upon the unique needs of identified gifted learners, which allows these students to be risk-takers as they develop their potential through the pursuit of original and innovative curricula. Students also gain the opportunity to work with a similarly advanced cohort in a rigorous and accelerated environment.

What learner outcomes are associated with magnet/specialty schools?

- understanding the importance of free expression, intellectual curiosity, individual responsibilities, and maturity/respect for others;
- forming relationships characterized by commitment to scholarship and discovery, openness to ideas, and trust;
- creating products in an environment that is intellectually safe and challenging;
- participating in unique classes that use both traditional and contemporary instructional techniques;
- developing both individual and group talents;
- allowing for plans and objectives to be developed, taking into account the physical, social, emotional, and academic development of each student;
- experiencing a variety of academic experiences in the humanities, arts, sciences, and technology;
- reaching their individual learning potential in an academically and intellectually challenging and nurturing environment;
- learning the skills of rational thinking, integration of mind and body, self-actualization, intuitive development, and self-evaluation;

- encouraging creative expression in all of its aspects of thinking, feeling, intuiting, and expressing talent through products;
- developing a sense of social awareness and commitment to humanity and to their environment, and a respect for the worth and dignity of others; and
- learning using a hands-on approach and/or in the field and classroom.

What support mechanisms are associated with the program/model?
While the support services for individual programs vary, most magnet schools surveyed have all the support services found in a middle school environment (counseling, guidance, etc.). Many also have plans for continual improvement that identify additional and ongoing strategies to ensure continued improvement in targeted areas (e.g., math, creative thinking, critical thinking problem solving). Other support mechanisms associated with magnet/specialty centers include: professional development provided for staff members, differentiated instruction, and individualized instruction.

What VDOE initiatives are associated with this program/model?
The VDOE initiatives associated vary depending on the specific magnet school and the focus of its specialty program, as detailed below:

STEM: Magnet schools that have STEM areas as the specific focus of their curriculum (e.g. Crittenden Middle School or Booker T. Washington Middle School both in Newport News, Virginia) are advancing the VDOE STEM initiative.

College and Career Readiness: The opportunity to participate in accelerated content in a cohort environment provides preparation for more advanced high school courses and college readiness. Other initiatives associated with magnet schools include support for future career opportunities, additional precollege preparation in a specific area, and accelerated classes to advance to higher-level courses at an earlier age.

21st Century Skills: Consistent with the VDOE guidelines, most magnet schools have as part of their regular curriculum an emphasis on 21st century skills such as information and technology literacy, critical thinking, and communication integrated into core subjects standards. Other initiatives associated with magnet schools support individual and collaborative critical and creative thinking and the direct application of learning in real-world experiences.

What are examples of where this program/model is being implemented?
Below is a representative list of the diversity and range of magnet schools for middle school students within the Commonwealth of Virginia:

- Virginia Beach City Public Schools
  Kemps Landing Magnet School focuses on academic rigor and challenge. Students pursue topics at an accelerated pace and explore course topics in greater depth and detail.

- Newport News City Public School
  Crittenden Middle School is a math, science and technology magnet school for the city of Newport News.

- Williamsburg-James City County Schools
  Middle School Arts Magnet provides middle school students the opportunity to explore literary, theatre, and rhythmic arts in an interdisciplinary manner while completing required CORE academic subjects and electives.

- Norfolk Public Schools
  Ruffner Academy hosts application-based Young Scholars Program for students who show unique academic promise and qualify through the city's gifted education services. Its core includes academically advanced curricula and opportunities for school and community leadership.

Accelerated Content: Center for Talented Youth, John Hopkins University

The Johns Hopkins University Center for Talented Youth (CTY) "identifies and develops the talents of the most advanced K-12 learners worldwide. CTY is accredited for grades 5 through 12 by the Commission on Secondary Schools of the Middle States Association of Colleges and Schools. The program provides a model for middle schools to access gifted curriculum options for accelerated content to students via digital learning platforms during the regular school year. Moreover, opportunities for students to access enrichment in areas of interest to meet their gifted educational needs are also available through CTY summer programs in both the traditional, face-to-face format, or the more contemporary learning option of virtual education" (John Hopkins, 2014).

How does the program/model satisfy requirements for best practices in the *Regulations Governing Educational Services for Gifted Students?*

Virginia Regulations	How Does CTY Satisfy This Requirement?
8VAC 20-40-40E Identified gifted students shall be offered placement in an instructional setting that provides: 1. Appropriately differentiated curriculum and instruction provided by professional instructional personnel trained to work with gifted students; and 2. Monitored and assessed student outcomes that are reported to the parents and legal guardians.	Schools can use online resources to offer gifted service options for accelerated content that continue from one grade level and/or content area to the next. Students can select curricular options online in multiple accelerated content academic areas throughout the entire year and with no interruption of services. CTY uses assessments for placement and advancement allows for variance in readiness and pacing appropriate to the gifted learners.

Virginia Regulations	How Does CTY Satisfy This Requirement?
8VAC 20-40-60A.10 Evidence that gifted education service options from kindergarten through twelfth grade are offered continuously and sequentially, with instructional time during the school day and week to (i) work with their age-level peers, (ii) work with their intellectual and academic peers, (iii) work independently, and (iv) foster intellectual and academic growth of gifted students. Parents and legal guardians shall receive assessment of each gifted student's academic growth.	Through CTY middle school students have access to a community of learners and to an enriched, accelerated, advanced curriculum designed to extend and deepen learning opportunities within and outside of the school setting. The CTY*Online* program provides a challenging and rigorous learning environment and the opportunity for appropriately differentiated curriculum and instruction. Additionally, the research conducted by JHU for the development of gifted adolescents through CTY ensures a distinctive curriculum and/or instructional approach for students in need of advanced content. Assessment tools offered by CTY programs can be used to report academic growth.

What support mechanisms are associated with the program/model?
The CTY program requires registration fees and placement assessments to be taken by each student to access the accelerated content courses and programs. Scholarships and tuition assistance are available for students/families in need. To be eligible to take courses in writing, some grammar, some critical reading, visual fluency, humanities, or social science, students must achieve qualifying verbal scores in the appropriate above-grade level test. To be eligible to take courses in math, science, computer science, or English Language Learners (ELL) for STEM, students must achieve qualifying math scores in the appropriate above-grade level test. Students who have qualifying math or verbal scores are eligible to take world languages (except ELL), some critical reading, Grammar FUNdamentals, web design, JavaScript, chess, or music courses.

Additional support mechanisms associated with the program/model include enhanced access to online technology, differentiation for individual students' needs, and professional development that address online learning and the social-emotional needs of gifted learners.

What learner outcomes and student benefits occur with the program/model?
Each year, thousands of students in Pre-K to 12, from more than 60 countries, enroll in CTYOnline, CTY's unique distance learning program that offers challenging courses throughout the year. Programs like CTY provide an opportunity for students to explore advanced and accelerated content at an appropriate pace through distance learning. A study of similar online programs through the Center for Talent Development (CTD) at Northwestern University "indicated that students' interests in the subject areas and desire for enriching and accelerating themselves (69.4%), and the unavailability of the courses in their home schools (37.1%) were the major reasons they enrolled in the CTD distance-learning courses. Other reasons included the desire to work through the study material at one's own pace (30.6%) and to advance more quickly to the next level in the subject area (22.6%). Honors level students thought that the

honors level courses had an appropriate level of challenge for them. They also were generally satisfied with the quality of communication with instructors and/or classmates, and the majority agreed that they enjoyed communicating with their instructor and/or classmate via e-mail (81.3%), that their teacher provided useful feedback and information about their work in the class (76.6%) and that getting in touch with the instructor was easy (64.0%)" (Olszewski-Kubilius and Lee, 2004).

When students are able to be the architects in the design of their academic futures, their quest becomes more engaging and less prescribed. The buy-in for learning is expedited because the student's interests are a primary component of the accelerated content selection for the CTYOnline program.

What VDOE initiatives are associated with this program/model?
College and Career Readiness: Through distance learning programs like CTY, middle school students have access to online accelerated content.

21st Century Skills: CTY supports virtual learning to ensure equitable learning opportunities for all students, including gifted students in need of advanced content.

What are examples of where this program/model is being implemented?
Throughout Virginia, students have access to CTY and the accelerated content offered through the online courses and summer enrichment programs.

Beyond the Classroom: Summer Enrichment

Summer educational experiences provide students with enrichment and acceleration opportunities that offer an environment that strengthens and develops their potential. They also provide an appropriate social experience for students to interact with intellectual peers. High expectations, continuous challenge, and novel learning experiences are important components that support the academic success of gifted students.

Within the United States, many school divisions and universities have developed specialized summer programs that bring together academically talented middle school students and offer an educational experience geared to their high abilities. Moreover, summer programs foster independence and strong work habits in an intellectually challenging environment that also develops important 21st Century Skills to include critical thinking and creativity.

Summer programs designed to meet the needs of high-ability learners include Summer Governor's Schools, programs sponsored by colleges and universities on their campuses or at satellite sites, and various options developed by local school divisions as part of their gifted and talented programming. Programs can be residential or day, and they span the arts, humanities, mathematics, and sciences. While most are offered in a course format, many programs are devoted to internships, research experiences, or specialized mentorships. The majority of the residential programs, however, are limited to grades nine through twelve.

Many programs are intended to provide enrichment and acceleration in order to build motivation in students who are underrepresented in traditional programs. Many also emphasize inquiry-based learning and an opportunity for students to explore specialized topics not typically studied in the regular classroom. Admission to summer enrichment programs can be highly competitive and selective. A variety of criteria are utilized in selecting high-ability students, such as grades, recommendations, nominations, and achievement or aptitude tests.

The **Center for Talented Youth (CTY)** is a program for students founded in 1979 by Julian Stanley at Johns Hopkins University. Through a Talent Search model, CTY became the first program of its kind to identify academically talented youth and provide learning opportunities. CTY offers numerous programs around the world and online but is best known for its fast-paced summer programs, which are held on many university campuses throughout the United States and the world, serving over 10,000 students each year.

How does the program/model satisfy requirements for best practices in the *Regulations Governing Educational Services for Gifted Students*?

Virginia Regulations	How Does Summer Enrichment Satisfy this Requirement?
8 VAC 20-40-20 "Instruction. . . to accommodate the accelerated learning aptitudes of identified students in their areas of strength . . . accelerated and enrichment opportunities that recognize gifted students' needs for (i) advanced content and pacing of instruction, (ii) original research or production, (iii) problem finding and solving, (iv) higher-level thinking that leads to the generation of products; and (v) a focus on issues, themes, and ideas within and across areas of study"	These programs provide opportunities for students with gifts and talents to explore, develop, and research their areas of interest, talents, and/or potential career paths. Summer enrichment provides opportunities for self-exploration, pursuit of interests, and development of personal identity.
8 VAC 20-40-60A ". . .gifted service options. . . are offered . . .(i) to work with their age-level peers, (ii) to work with their intellectual and academic peers, (iii) to work independently, and (iv) to foster intellectual and academic growth of gifted students."	Summer enrichment options extend and deepen learning opportunities outside of the school setting and interaction with other intellectual peers.

What support mechanisms are associated with the program/model?
Elementary and middle school personnel must disseminate information about summer enrichment opportunities to parents and community members in a timely manner. Middle school counselors must remain up-to-date on summer opportunities that are available to their students and on financial support that might be available to defray costs, if any. Many programs have financial aid available, and counselors are urged to encourage parents or guardians to complete relevant information. Personnel at the schools should be available to assist students in completing forms and applications, providing appropriate test scores, academic records, and recommendations, and in finding community resources to reduce or eliminate the financial barriers to summer enrichment opportunities.

What learner outcomes occur with the program/model?
In accordance with NAGC PreK-Grade 12 Gifted Programming Standards many positive outcomes are apparent. Students have the opportunity to interact with same-age peers, mentors, or experts with similar interests, abilities, and/or experiences. They become independent investigators and demonstrate growth in personal competence such as self-awareness, self-advocacy, self-efficacy, confidence, motivation, resilience, independence, curiosity, and risk taking. In residential summer enrichment, for example, students learn to live and interact with a wide range of peers and learn to value the language, heritage, and circumstance of others. At the same time, students develop competence in interpersonal and technical communication skills. Summer enrichment programs provide opportunities to identify future career goals and to develop the pathways to reach those goals. In addition, they provide environments in which gifted learners, in all their diversity, understand and accept themselves and are understood, valued, nurtured, and supported. Many of the friendships made during these summer experiences are sustained throughout college and beyond.

What VDOE initiatives are associated with this program/model?
STEM: The summer enrichment programs in Virginia related to mathematics, technology, science, and engineering have objectives in common with STEM. The majority of programs are linked to Career and College Readiness as well as 21st Century Skills (see descriptions below).

College and Career Readiness: Summer enrichment programs support the exploration of future career interests through exposure to a wide range of topics not traditionally addressed within the classroom. Since many of these programs are housed on college campuses, students become comfortable navigating the campus environment.

21st Century Skills: Summer enrichment programs support individual and collaborative critical and creative thinking and problem-solving strategies, the direct application of learning in real-world experiences, and development of collaborative skills.

What are examples of where this program/model is being implemented?

- The Curry School of Education at the University of Virginia has offered its residential Summer Enrichment Program for more than thirty years to gifted and/or high-ability students enrolled in grades 4-10. Students are engaged in learning activities that foster critical thinking, creative thinking, and inquiry processes.

- The College of William and Mary offers summer camps for high-ability middle school students both on campus and at various locations in Richmond. Students explore specialized areas of science, mathematics, and the arts and humanities.

- Middle school students interested in Shakespeare can participate in William and Mary's week-long day camp to learn about the production of Shakespeare's plays and to participate in a performance.

- Longwood University, in conjunction with Region 8 Gifted Education Progress, offers an on-site summer two-week day program. Middle School students can choose from a variety of short courses with themes of the arts, science, and technology.

- Summer Regional Governor's School Programs are held in various locations for middle school students across the Commonwealth.

Beyond the Classroom: Saturday Enrichment

Saturday educational experiences provide middle school students with enrichment and acceleration opportunities that offer an environment that strengthens and develops their potential. Participation with other high-ability peers in unique challenges that focus on critical thinking skills and problem solving that incorporate cutting-edge technology are important components that support the academic success of gifted students.

Many school divisions and universities have developed specialized Saturday programs that offer academically advanced students a varied selection of courses. Programs span the arts, humanities, mathematics, engineering, and sciences.

How does the program/model satisfy requirements for best practices in the *Regulations Governing Educational Services for Gifted Students*?

Virginia Regulations	How does Saturday Enrichment Satisfy this Requirement?
8 VAC 20-40-20 "Instruction. . . to accommodate the accelerated learning aptitudes of identified students in their areas of strength . . . accelerated and enrichment opportunities that recognize gifted students' needs for (i) advanced content and pacing of instruction, (ii) original research or production, (iii) problem finding and solving, (iv) higher-level thinking that leads to the generation of products; and (v) a focus on issues, themes, and ideas within and across areas of study"	These programs provide opportunities for students with gifts and talents to explore, develop, and research their areas of interest and to develop their talents.
8 VAC 20-40-60A ". . .gifted service options. . . are offered . . .(i) to work with their age-level peers, (ii) to work with their intellectual and academic peers, (iii) to work independently, and (iv) to foster intellectual and academic growth of gifted students."	Saturday enrichment options broaden intellectual and social horizons of gifted middle school students outside the school setting.

What support mechanisms are associated with the program/model?
Middle school personnel must disseminate information about Saturday enrichment opportunities to parents and community members as they become available. Middle school counselors must remain up-to-date on Saturday and summer opportunities that are available to their students. As for other special programs for gifted students, many parents and students from disadvantaged backgrounds may find the application and scholarship processes for Saturday programs daunting. School personnel should offer coaching services and help identify resources throughout the

application process, in order to reduce or eliminate the logistical and financial barriers to enrichment opportunities.

What learner outcomes occur with the program/model?
In accordance with NAGC PreK-Grade 12 Gifted Programming Standards many positive outcomes are apparent. Students have the opportunity to interact with individuals who share their interests and talent areas. They develop confidence in team-building, communication, and presentation skills. Saturday enrichment programs provide environments in which gifted learners are valued for their unique interests and personalities. Program directors and teachers provide valuable personal support.

What VDOE initiatives are associated with this program/model?
STEM: The Saturday enrichment programs in Virginia related to mathematics, technology, science, and engineering have objectives in common with STEM. The majority of programs are linked to College and Career Readiness as well as 21st Century Skills (see descriptions below).

College and Career Readiness: Saturday enrichment programs support the exploration of future career interests through exposure to a wide range of topics not traditionally addressed within the classroom. Some are housed on college campuses, thereby acquainting students with higher learning environments.

21st Century Skills: Saturday enrichment programs support individual and collaborative critical and creative thinking and problem-solving strategies, the direct application of learning in real-world experiences, and development of collaborative skills.

What are examples of where this program/model is being implemented?

- The University of Virginia Curry School of Education Saturday Enrichment Program follows instructional best practices for gifted students with the goals of talent development and the fostering of life-long learning. Students in kindergarten through fifth grade are hosted on campus and at satellite sites for a rich variety of classes.

- The College of William and Mary Saturday Enrichment Program for gifted students in kindergarten through grade nine learners is academically challenging and emphasizes inquiry-based learning. The program strives to go beyond the regular school curriculum to explore specialized areas in science, mathematics, humanities, and arts. Opportunities are provided that nurture self-directed learners at locations on the main campus in Williamsburg and at a satellite location in Richmond.

- The Richmond Area Mensa Gifted Youth Group provides gifted children (evaluated by American Mensa at or above the 98th percentile on one of several nationally-normed assessments) an opportunity to advance their skills and socialize with other high-ability student members. The group offers a Facebook page for students and schedules activities and short courses organized by the group's youth coordinator. Some of the group's activities include touring Bear Island Paper Company; touring an observatory and star-gazing; observation of a city newspaper editorial board meeting; a variety of other

demonstrations and classes, such as 3D printing in archaeology, mastering Rubik's Cube, art, self-defense, environmental studio, and cooking.

Beyond the Classroom: Seminars, Guest Speakers, and Field Trips

Other opportunities for middle school students beyond the classroom include seminars, guest speakers, and field trips. School divisions may offer such opportunities as a means of interacting with community experts and practicing professionals. These opportunities are most often local in nature and occur as a result of school-community contacts.

In much the same way that Governor's Schools provide regular enrichment opportunities for gifted students, schools can offer occasional enrichment experiences to students to enhance their classes and projects.

How does the program/model satisfy requirements for best practices in the *Regulations Governing Educational Services for Gifted Students*?

Virginia Regulations	How Do Seminars, Guest Speakers, and Field Trips Satisfy this Requirement?
8 VAC 20-40-20 "Instruction . . . to accommodate the accelerated learning aptitudes of identified students in their areas of strength . . . accelerated and enrichment opportunities that recognize gifted students' needs for (i) advanced content and pacing of instruction, (ii) original research or production, (iii) problem finding and solving, (iv) higher-level thinking that leads to the generation of products; and (v) a focus on issues, themes, and ideas within and across areas of study. . . ."	Seminars, speakers, and field trips offer hands-on enrichment opportunities that expose students to a wider range of experiences than the typical classroom curriculum can provide.

What support mechanisms are associated with the program/model?
Program/speaker identification sources for gifted resource personnel are limitless, to include local, regional, and national resources. These sources may be a combination of on-site and virtual contacts. Funding may be needed for transportation, speaker honoraria, and materials.

What learner outcomes occur with the program/model?
Students identified as gifted and talented are able to develop knowledge and gain from experiences that provide skills for living in a diverse global society. These experiences introduce students to the needs as well as resources of their community. There is the potential for deeper, hands-on individual investment within a student's vocational interest. This model provides a student with an opportunity to learn the knowledge, skills, understandings, and tools of experts in the field.

What VDOE initiatives are associated with this program/model?
These enrichment programs can be designed to meet any/all of the previously listed VDOE initiatives, as determined by a local assessment of needs.

What are examples of where this program/model is being implemented?
Seminars, speakers, and field trips are a common element of gifted programs throughout the Commonwealth. One well implemented example for seminars and field trips comes from Henrico County Public Schools. Students at Moody Middle School who are identified gifted but have not chosen Academic Enrichment as their elective may select to be pulled out during their APP directed study hall time. These students are scheduled into a section that meets once per week for several weeks. These seminar-based sessions focus on such topics as: creative problem solving and critical thinking, deductive logic skills, social and emotional changes in middle school, personal inventory, and high school and college preparation. They also participate in content-relevant field trips at local cultural institutions such as the Federal Reserve as an extension of their finance unit, VMFA or Richmond's Holocaust Museum.

Several organizations provide a pool of guest speakers who are eager to visit schools and offer enrichment opportunities. For example, the *Rule of Law Project* will connect lawyers with students studying civics.

Beyond the Classroom: Competitions and Talent Searches

Competitions and talent searches offer middle school students opportunities beyond the classroom. Academic competitions can provide middle school gifted students with opportunities to develop in many different ways. Research has shown that academic competitions can serve as motivators for students, have the ability to nurture a healthy self-concept, and can teach students how to cope with subjectivity. In addition, they can offer students the opportunity to work with role models, such as real-world scholars and researchers at the top of their career ladders (Ozturk and Debelak, 2008). Academic competitions can also provide gifted middle school students with opportunities to compete against gifted peers, social support, and a more realistic perception of their abilities. This could be particularly important in the middle grades because gifted adolescents can be vulnerable to the influence of an anti-intellectual culture in their schools (Olszewski-Kubilius and Lee, 2004).

The first talent search was started by Julian Stanley at Johns Hopkins University in 1972. Because the early talent searches were so successful in identifying academically advanced students, the concept grew and is now present nationwide. Primarily, talent searches are conducted annually by four regional university centers at Northwestern University, Duke University, Johns Hopkins University, and the University of Denver. These talent searches involve off-level testing, where a younger student would be administered a test such as the SAT (Scholastic Aptitude Test) or ACT (American College Test) typically designed for an older student (Olszewski-Kubilius, 1998). Each of the regional talent searches run summer programs for students who have participated and many have expanded to offer online or distance learning programs as well (DeLong, 1994).

How does the program/model satisfy requirements for best practices in the *Regulations Governing Educational Services for Gifted Students*?

Virginia Regulations	How Do Competitions and Talent Searches Satisfy This Requirement?
8 VAC 20-40-20 "Appropriately differentiated curriculum and instruction" means curriculum and instruction adapted or modified to accommodate the accelerated learning aptitudes of identified students in their areas of strength. Such curriculum and instructional strategies provide accelerated and enrichment opportunities that recognize gifted students' needs for (i) advanced content and pacing of instruction; (ii) original research or production; (iii) problem finding and solving; (iv) higher level thinking that leads to the generation of products; and (v) a focus on issues, themes, and ideas within and across areas of study.	Competitions provide middle school gifted students with opportunities to create original products and solve problems. Students involved in academic competitions engage in higher level thinking. Talent searches allow students to access advanced content. Often the enrichment curriculum involved with such programs is cross-curricular and follows a thematic focus.
8 VAC 20-40-60.10 …with instructional time during the school day and week to (ii) work with their intellectual and academic peers…	Competitions and talent searches both allow students to interact with peers of similar academic ability.

What support mechanisms are associated with the program/model?
Middle school gifted students participating in academic competitions benefit from role models and adult supervisors who serve as mentors. These adults are instrumental in making the experience meaningful for the students involved (Ozturk and Debelak, 2008).

Talent searches provide support for middle school gifted students in the way of educational placement and guidance. Students also become part of a network of support including direct services from the universities, advice from expert professionals, access to other programs, and contact with other students who have similar capabilities and interests (Olszewski-Kubilius, 1998).

What learner outcomes/student benefits occur with the program/model?
Learner outcomes associated with competitions and talent searches include:

- participation in mathematics competitions provide gifted and talented students with opportunities to meet with, compete against, and compare themselves to other talented peers, which gives them social support and a more realistic picture of their abilities (Subotnik, Miserandino, Olszewski-Kubilius, 1996);
- students who participate in talent searches continue to achieve at higher levels compared to other students (Burton, 1988); and
- talent search participants score better than average college bound seniors on the SAT when they take it in high school, take more accelerated and advanced courses, earn more awards and honors, and continue to have very high educational aspirations (Burton, 1988).

Student benefits associated with competitions and talent searches include:

- academic competitions provide the potential for a number of affective benefits (Ozturk and Debelak, 2008);
- participation in competitions provides support and recognition which is particularly important for gifted adolescents who may be vulnerable to peer pressure due to superior abilities (Olszewski-Kubilius and Lee, 2004); and
- students who participate in talent searches have the opportunity to access summer residential programs with opportunities for academic acceleration (DeLong, 1994).

What VDOE initiatives are associated with this program/model?

STEM: Many competitions for gifted students are in the fields of science technology, engineering, and math, including the FIRST® LEGO® League and Robotics programs and various other math and science contests.

College and Career Readiness: Talent searches help to foster college and career readiness by exposing gifted middle school students to tests such as the SAT and ACT, which are traditionally used as components of the college admissions process.

21st Century Skills: Critical and creative thinking and problem solving are instrumental in many competitions for gifted students at the middle school level. Additionally, such competitions often place students in real-world situations where they have to work collaboratively and communicate effectively.

What are examples of where this program/model is being implemented?

Representative competitions include the following:

- Odyssey of the Mind is an international educational program that provides creative problem-solving opportunities for students from kindergarten through college.
- Destination Imagination encourages teams of learners to have fun, take risks, focus and frame challenges while incorporating STEM, the arts, and service learning.
- Future Problem Solving of Virginia is a year-long educational program that combines the rigorous intellectual challenge of creative problem solving with an interdisciplinary study of the future.
- Virginia Mathematics League builds student interest and confidence in mathematics through solving worthwhile problems
- MATHCOUNTS is a national middle school coaching and competitive mathematics program that promotes mathematics achievement through a series of fun and engaging "bee" style contests.
- William & Mary Middle School Model United Nations is an educational program that engages middle school students in an exploration of current world issues through interactive simulations and curricular materials.

Representative talent searches include the following:

- Center for Talent Development at Northwestern University
- Talent Identification Program at Duke University
- Center for Talented Youth at Johns Hopkins University
- Rocky Mountain Talent Search at the University of Denver

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