

Virginia Board of Education Agenda Item



Agenda Item: H

Date: January 22, 2015

Title	Final Review of Proposed <i>Guidelines for the Use of Computer Science Courses to Satisfy Graduation Requirements</i> Developed in Response to House Bill 1054 of the 2014 General Assembly		
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Purpose of Presentation:

Action required by state or federal law or regulation.

Previous Review or Action:

Previous review and action. Specify date and action taken below:

November 20, 2014: First Review

Action Requested:

Final review: Action requested at this meeting.

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
X	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
	Other Priority or Initiative. Specify:

Background Information and Statutory Authority:

Goal Three: The approval of these guidelines may expand options for students to apply certain rigorous computer science coursework as substitute coursework in meeting current graduation requirements in mathematics, laboratory science, and career and technical education

The 2014 General Assembly passed House Bill 1054 (Loupassi), which amended and re-enacted § [22.1-253.13:4](#) of the *Code of Virginia*. The amendment pertains to the use of computer science credits for high school diploma course and credit requirements, and the Virginia Board of Education was directed to develop guidelines addressing how computer science courses can satisfy graduation requirements. The specific amended language (in italics below) reads as follows:

Be it enacted by the General Assembly of Virginia:

1. That § [22.1-253.13:4](#) of the Code of Virginia is amended and reenacted as follows:

§ [22.1-253.13:4](#). Standard 4. Student achievement and graduation requirements.

D. In establishing course and credit requirements for a high school diploma, the Board shall:

8. Consider all computer science course credits earned by students to be science course credits, mathematics course credits, or career and technical education credits. The Board of Education shall develop guidelines addressing how computer science courses can satisfy graduation requirements.

The Virginia Department of Education conducted a review of existing options for computer science coursework and the role of this coursework in meeting graduation credits in mathematics, laboratory science, and career and technical education. Currently, Advanced Placement (AP) Computer Science A is approved by the Virginia Board of Education as a mathematics course (standard credit); however, the AP assessment is not a substitute assessment for a mathematics verified credit. AP Computer Science A has been historically grouped with mathematics courses due to the role of the high school mathematics endorsement in teaching those courses. In the area of career and technical education (since 2000), students scoring a three or above on the AP Computer Science A examination earn the equivalent of a career and technical education credential. AP Computer Science has no parallel standing in the Board-approved laboratory sciences due to it not being a biological or physical science.

Summary of Important Issues:

The proposed *Guidelines for the Use of Computer Science Courses to Satisfy Graduation Requirements* that meet the 2014 legislation may be found in Attachment A. Since the guidelines were reviewed at the November 20, 2014, meeting, the following changes were made:

- A statement regarding the role of school counselors in advising students and parents.
- Revisions that allow Computer Science A to satisfy mathematics, laboratory science, or career and technical education graduation requirements as a standard credit regardless of the diploma type.

Impact on Fiscal and Human Resources:

There is minimal impact on resources.

Timetable for Further Review/Action:

Following approval, the proposed *Guidelines for the Use of Computer Science Courses to Satisfy Graduation Requirements* will be disseminated to school divisions via a Superintendent’s Memorandum.

Superintendent’s Recommendation:

The Superintendent of Public Instruction recommends that the Board of Education approve the proposed *Guidelines for the Use of Computer Science Courses to Satisfy Graduation Requirements*.

Rationale for Action:

Approving the Proposed *Guidelines for the Use of Computer Science Courses to Satisfy Graduation Requirements* will allow the Board of Education to comply with the 2014 General Assembly that passed House Bill 1054, which amended and re-enacted § [22.1-253.13:4](#) of the *Code of Virginia*. The guidelines will allow for a consistent application of rigorous computer science course credits in place of mathematics, laboratory science, and career and technical education course credits as school counselors and teachers advise students and parents as they plan for the variability of computer science course credits acceptance by institutions of higher education.

Proposed Guidelines for the Use of Computer Science Courses to Satisfy Graduation Requirements

Guidelines

Pursuant to House Bill 1054 (2014), *Advanced Placement (AP) Computer Science A* may be considered a mathematics course, a laboratory science course, or career and technical education course under the conditions outlined below. A student may apply *AP Computer Science A* coursework to only one of the aforementioned areas. These guidelines are effective for the students entering ninth grade for the first time in 2015-2016 and beyond.

- I. For **mathematics**, *AP Computer Science A* currently provides a standard credit to satisfy graduation requirements.
- II. For **laboratory science**, *AP Computer Science A* may provide a standard credit to satisfy graduation requirements when students successfully complete laboratory science courses from the different science discipline areas in accordance with the 2012 *Regulations Establishing Standards for Accrediting Public Schools in Virginia* (SOA).*

For *AP Computer Science A* to be applied as a standard credit for laboratory science, the course must include a significant experimental component where:

1. a testable question is developed based on a review of literature;
2. an hypothesis drives a sequential experimental design;
3. parameters are manipulated under controlled conditions to test how variables behave;
4. systematic methods of organizing derived experimental data are employed;
5. analysis of data requires statistical processes to form conclusions; and
6. conclusions and findings are formally presented, defended, and argued.

International Baccalaureate (IB) Computer Science coursework may be applied as a laboratory science as part of the recognized IB diploma requirement, which is currently governed under the 2012 SOA regulations.*

- III. For **career and technical education**, *AP Computer Science A* may provide a standard credit to satisfy graduation requirements.

AP Computer Science A currently provides a student-selected verified credit for students who (i) successfully complete a career and technical education program sequence in programming or a related programming sequence **and** (ii) successfully complete the *AP Computer Science A* examination with a score of three or higher.

Colleges and universities have varying ways of applying computer science course credits during the admission process. Many colleges and universities do not accept computer science as a mathematics or laboratory science course on student transcripts. In all cases, teachers and school counselors must carefully advise students and parents to ensure that their high school credit-bearing course selections and graduation planning career pathways are consistent with admission standards and program requirements for post secondary education and training.

*Footnotes 2, pages 12 and 14; http://www.doe.virginia.gov/boe/accreditation/soa_2012.pdf