| **Virginia Board of Education Agenda Item** | **Seal of the Commonwealth of Virginia** |
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# Agenda Item: L

## Date: July 25, 2019

### Title: First Review of Proposed 2017 Computer Science Standards of Learning Curriculum Framework

#### Presenter: Mr. Timothy Ellis, Computer Science Specialist

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## Purpose of Presentation:

Action required by state or federal law or regulation.

## Executive Summary:

The *Standards of Learning* are a critical communication with the citizens of the Commonwealth, parents, the business community, and higher education because the Standards convey expectations and intended outcomes for K-12 education. Equally as important, the Standards and the frameworks serve as the key guidance for instructional leaders and teachers of computer science (elementary, middle, high school) in and integrating computer science concepts into K-8 instruction and planning computer science curricula at the secondary level.

The Board of Education approved the 2017 *Computer Science* *Standards of Learning* in November, 2017. The currentstandards may be viewed online at <http://www.doe.virginia.gov/testing/sol/standards_docs/computer-science/index.shtml>.

The 2017 *Computer Science Curriculum Frameworks* were developed to support teachers and administrators in the instruction of the *Computer Science Standards of Learning*. This document, constructed with the assistance of teachers and computer science leaders across the Commonwealth, outlines the expectations of students as they demonstrate mastery of the computer science content and the skills. The *Computer Science Curriculum Framework* is constructed to prepare teachers for either the integration of computer science content and practices within core content instruction (K-8) or to support the instruction of secondary computer science coursework. School divisions are encouraged to incorporate the Curriculum Framework into a broader, locally-designed curriculum. The Curriculum Framework delineates in greater specificity the minimum content that all teachers should teach and all students should learn.

In support of *Profile of a Virginia Graduate*, the proposed *Computer Science Curriculum Framework* provides support for teachers and educational leaders, strengthen pathways within K-12 computer science education through a focus on providing vertical progression of computer science content, and will better prepare students for college and careers through a greater emphasis on critical thinking and problem solving.

**Summary of Major Elements:**

The *Computer Science Curriculum Framework* structure differs from that of other disciplines. Computer Science concepts may be new to many teachers; the framework is designed to provide support to teachers that have low efficacy in computer science concepts or practices. Additional resources will be provided to support teachers in the integration of computer science into the instruction of other disciplines.

The attached drafts of the proposed *Computer Science Standards of Learning Curriculum Framework* include the following components, as listed.

Proposed 2017 *Computer Science Standards of Learning Curriculum Framework*

* Context of the Standard: Provides teachers a general background as to the content of the standard as well as the vertical articulation of the concepts.
* Essential Skills: Outlines student performance expectations.
* Essential Questions: Provides teachers student friendly questions that may be used to drive instruction.
* Essential Vocabulary: provides teachers with definitions of computer science terminology.

## Action Requested:

Action will be requested at a future meeting. Specify anticipated date below:

September 19, 2019

## Superintendent’s Recommendation:

The Superintendent of Public Instruction recommends the Board of Education accept the proposed *2017 Computer Science Curriculum Framework* for first review.

## Previous Review or Action:

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

**Date:** July 26, 2017

**Action:** The Board of Education accepted the 2017 *Computer Science Standards of Learning* for first review.

Date: September 6, 2017, September 20, 2017

Action: The Board of Education held public hearings in Roanoke and Richmond on the proposed *Computer Science Standards of Learning*.

**Date:** November 16, 2017

**Action:** The Board of Education adopted the 2017 *Computer Science Standards of Learning*.

## Background Information and Statutory Authority:

The Board of Education has made a commitment to maintain rigorous and relevant expectations for student learning that meet or exceed national and international benchmarks for college and career readiness. The proposed revised *Computer* *Science Standards of Learning* reflect rigorous, concise, and measurable standards for these courses in Virginia.

Section 22.1-253.13:1-B of the *Code of Virginia* states, “The Board of Education shall establish a regular schedule, in a manner it deems appropriate, for the review, and revision as may be necessary of the Standards of Learning in all subject areas. Such review of each subject area shall occur at least once every seven years. Nothing in this section shall be construed to prohibit the Board from conducting such review and revision on a more frequent basis…”

This Board item relates to Priority 1 of the *Virginia Board of Education Comprehensive Plan: 2018-2023* to provide high-quality, effective learning environments for all students.

## Timetable for Further Review/Action:

Following the Board of Education’s acceptance of the proposed 2017 *Computer Science Standards of Learning Curriculum Framework* for first review, the Department of Education will receive public comment for at least 30 days. During the public comment period, feedback will be solicited from stakeholders through an online comment platform and through webinars hosted by the Department of Education. This feedback will inform changes to be made to the document prior to submitting the Curriculum Framework to the Board of Education. It is anticipated that final review of the 2017 *Computer Science Standards of Learning Curriculum Framework* will be at the Board’s September 19, 2019 meeting.

Table 1

2019 Computer Science Standards of Learning Anticipated Implementation Timeline and Communication Plan

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **School Year** | **Date** | **Action** | **Communication** | **Method** |
| 2019 | July | First Review of Proposed 2017 *Computer Science Standards Curriculum Framework* | Announce initial review of the 2017 *Computer Science Standards Curriculum Framework* | Superintendent’s Memo, VDOE social media, TeacherDirect, and other communication channels |
| Draft version of the 2017 *Computer Science Standards Curriculum Frameworks* open for public comment. | Announce draft curriculum framework open for public comment | Superintendent’s Memo, VDOE social media, TeacherDirect, and other communication channels |
| July 18 | VDOE Computer Science Summit | Announced via multiple platforms. Collaborative effort between VDOE and Computer Science organizations. | Superintendent’s Memo, VDOE social media, TeacherDirect, and other communication channels |
| September | Anticipated Final Review of the proposed 2017 *Computer* *Science Standards Curriculum Framework* | Announce final review of the 2017 *Computer Science Standards Curriculum* *Frameworks* and timeline of implementation | Superintendent’s Memo, VDOE social media, TeacherDirect, and other communication channels |
| 2019-2020  | School divisions begin incorporating 2017 *Computer Science* SOL and CF into written curricula |  |  |
| Fall | VDOE provides professional development on the changes to the SOL and CF | Professional Development conducted at core discipline support organizations | Superintendent’s Memo, VDOE social media, TeacherDirect, and other communication channels |
| Winter | Conduct state wide needs assessment to include teachers and administrators to determine computer science support needed to support instruction of Computer Science. | Create needs assessment and announce opportunity to division teachers and leaders. | Superintendent’s Memo, VDOE social media, TeacherDirect, and other communication channels |
| 2020-2021 | Spring | Construct a team to work on integration of computer science concepts and practices into existing and newly developed lesson plans. | Solicit help from computer science leaders and teachers to develop integrated or discipline specific lesson plans | Teacher Direct, VDOE Computer Science Newsletter |
| Fall/Winter | VDOE integrated lesson plans within core disciplines posted on line (either on VDOE website or in OER).  | Announce posting of resource | Superintendent’s Memo, VDOE social media, TeacherDirect, and other communication channels |
| Fall and Spring | Continued Professional Development on the effective integration of computer science into instruction | Announce professional learning opportunities. | Superintendent’s Memo, VDOE social media, TeacherDirect, and other communication channels |

## Impact on Fiscal and Human Resources:

The Department of Education administers the state standards and curriculum framework review process and the implementation of those standards and curriculum, once approved by the Board. The agency’s existing resources can absorb the standard review responsibility at this time.