

# Virginia Board of Education Agenda Item



Agenda Item: G

Date: July 27, 2017

<b>Title</b>	Report on the Amended Timeline for the <i>Science Standards of Learning</i>		
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**Purpose of Presentation:**

For information only. No action required.

**Previous Review or Action:**

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

Date: January 28, 2016

Action: The Board of Education accepted the Report on Timeline for the Review and Approval of the Revised *Science Standards of Learning*.

**Action Requested:**

No action requested.

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

X	Goal 1: Accountability for Student Learning
X	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
	Other Priority or Initiative. Specify:

**Background Information and Statutory Authority:**

Goal 1: The Board of Education’s comprehensive plan calls for a review of all Standards of Learning on a regular schedule. The *Code of Virginia* also requires a review of Virginia’s Standards of Learning every seven years.

*Code of Virginia*, Section 22.1-253.13:1-B... “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...”

The *Science Standards of Learning* were approved by the Board of Education on January 28, 2010, and are scheduled for review and approval in 2017. The 2010 science standards may be viewed online at [http://www.doe.virginia.gov/testing/sol/standards\\_docs/science/index.shtml](http://www.doe.virginia.gov/testing/sol/standards_docs/science/index.shtml)

Goal 2: In its 2012-2017 Comprehensive Plan, the Board of Education (BOE) commits to raising the bar on academic performance standards to ensure global competitiveness of Virginia’s graduates. “Building on the success of the Standards of Learning program, more rigorous and relevant expectations will continue to be implemented that meet or exceed national and international benchmarks for college and career readiness.” In the plan (page 22), the BOE has set the adoption of revised *Science Standards of Learning* for 2017.

The Standards of Learning are a critical communication with the citizens of the Commonwealth, especially parents, the business community, and higher education, as 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 science (elementary, middle, high school) in planning science curricula and science programming.

The *Science Standards of Learning* (SOL) were first developed in 1983 with subsequent revisions in 1988, 1995, 2003, and again in 2010. Virginia’s science standards have consistently been rated at the top of state standards documents, most recently in 2013 receiving a rating of nine out of ten (along with the TIMMS Science Framework and NAEP Science Framework) by the prestigious [Fordham Foundation](#) and rated “Clearly Superior” to the national *Next Generation Science Standards*. Periodic revisions are necessary to update science content, fine tune and clarify important concepts, and refocus emphasis on emerging areas of importance. The Board of Education approved the 2010 *Science Standards of Learning* on January 14, 2010. The current standards may be viewed online at [http://www.doe.virginia.gov/testing/sol/standards\\_docs/science/index.shtml](http://www.doe.virginia.gov/testing/sol/standards_docs/science/index.shtml).

On January 28, 2016, the Board accepted the timeline for the review of the current standards. Upon acceptance of the timeline, the following action occurred:

- posted Superintendents Memo #052-16, March 11, 2016, which (a) solicited review input from teachers, administrators, curriculum supervisors, and the general public; and (b) requested division superintendents to submit nominations for participants on the Science SOL review teams;
- received and reviewed 261 online comments from 29 different sources on the 2010 *Science Standards of Learning* from stakeholders;
- received and reviewed comments from eight engineers (marine, mechanical, chemical, and aeronautical)
- identified Science SOL steering committee and review team members for each discipline from individuals nominated by school divisions;
- developed reference documents including documents that outlined vertical progression of science concepts and documents to provide correlations to Next Generation Science Standards (NGSS); National Assessment of Education Progress (NAEP); and Trends in International Mathematics and Science Study (TIMMS);
- met with the ten-person SOL steering committee to review public comment, key national and international science education documents and reports, and frame the major issues for the summer review team.

- met for three days on July 12-15, 2017, with the SOL review team to review the public comments and to consider recommendations and reports from stakeholder groups. The committee had participation from all seven Superintendent’s Regions and included teachers, principals, science specialists and instructional leaders from 27 different school divisions;
- met with the No Child Left Inside Coalition to discuss its recommendations provided during public comment and how they could be addressed (August 2016).
- met with and received feedback on suggested standards revisions from the Virginia Association of Science Teachers (VAST) (January 2017);
- met with and received feedback on suggested standards revisions from the Virginia Resource-Use Education Council (February 2017);
- provided an Issue Brief to the Board on February 14, 2017, which amended the timeline to accelerate the standards revision process;
- met with and received feedback on preliminary standards revisions from the Virginia Science Education Leadership Association (April 2017);
- reviewed preliminary revisions on an informal and ongoing basis with staff of state agency stakeholders, including Department of Environmental Quality, Department of Game and Inland Fisheries, Science Museum of Virginia,
- established a secure website allowing stakeholders representing (a) businesses and (b) institutions of higher education, to comment on the preliminary revisions (Five universities and one business responded);
- developed a propose draft of the 2017 Science SOL for the additional stakeholder review.

With the initial review of the *Science Standards of Learning* complete, the Office of Science, Technology, Engineering, and Mathematics (STEM) requests the adjustment of the timeline of the Science SOL revision process, which includes the revision of the standards and the companion science curriculum frameworks for kindergarten through physics. The proposed timeline is a modified version of the original timeline adjusted: (a) to allow stakeholders to review the standards with an expanded focus on STEM education; (b) to include revisions in the standards to support the Virginia Profile of a Graduate and Deeper Learning further; and (c) to provide additional opportunities for collaboration and integration among the core areas.

**Impact on Fiscal and Human Resources:**

The Department of Education administers the state standards review process and the implementation of those standards, once approved by the Board. Additional funding resources will be needed to support meetings to allow for further stakeholder input and to revise, as required, the current documents based on stakeholder feedback. The Office of Science, Technology, Engineering, and Mathematics staff will work collaboratively to review comments of the stakeholders and synthesize revisions to align to the current VDOE initiatives to include STEM education, Virginia Profile of a Graduate, and Deeper Learning.

**Timetable for Further Review/Action:**

The proposed timeline for the revision of the *Science Standards of Learning* allows for the opportunity for Virginia stakeholders (educators, businesses, scientists, engineers, and other members of the public) to view the *Science Standards of Learning* with an expanded focus on innovation and “out-of-the-box” thinking in creating Virginia’s next iteration of science standards.

**September 2017: STEM Stakeholder Review Team Meetings**

The STEM Stakeholder Review Team meets to:

- analyze statewide input on suggested standards revisions;
- review current state practices for STEM education;

- review national and international documents and reports as necessary; and
- make recommendations for potential changes.

The Department science staff, science review team members, and STEM stakeholders will meet both remotely and as groups to review the *Science Standards of Learning* and *Science Standards of Learning Curriculum Framework*.

**June 2018: First Review of Proposed Revised 2018 *Science Standards of Learning***

VDOE science team presents drafts of the proposed revised 2018 *Science Standards of Learning* to the Board of Education for first review.

**August – September 2018: Public Comment Period and Public Hearings**

Prior to finalizing proposed revisions to the 2018 *Science Standards of Learning* the VDOE solicits comments from teachers of science and other science educators, curriculum supervisors, school administrators, education organizations, scientists, workforce representatives, parents, and other members of the public.

A Superintendent’s Memorandum announces the process for submitting public comment on the proposed science standards and the schedule for two (2) public hearings. The public comment period is active from August 1 – September 15, 2018. The two public hearings are held in September 2018 at locations around the state. Public comment is reviewed, and revisions are made as warranted.

**October 2018: Final (Anticipated) Review of *Science Standards of Learning***

The Superintendent of Public Instruction presents the proposed revised 2018 *Science Standards of Learning* to the Board of Education for its consideration for final review and adoption. If approved, a preliminary copy of the approved 2018 *Science Standards of Learning* is posted on the VDOE website.

**February 2019: First Review of Proposed Revised 2018 *Science Standards of Learning Curriculum Framework***

VDOE presents a draft of the proposed 2018 *Science Standards of Learning Curriculum Framework* to the Board of Education for first review.

**February 2019: Public Comment Period Proposed Revised 2018 *Science Standards of Learning Curriculum Framework***

A Superintendent’s Memorandum announces the process for submitting public comment on the proposed 2018 *Science Standards of Learning Curriculum Framework*. The public comment period is active from February 23 – March 23, 2019 (tentative).

**April 2019: Final (Anticipated) Review of the Proposed Revised 2018 *Science Standards of Learning Curriculum Framework***

The Superintendent of Public Instruction presents the proposed revised 2018 *Science Standards of Learning Curriculum Framework* to the Board of Education for its consideration for final review and adoption. If approved, a preliminary copy of the 2018 *Science Standards of Learning Curriculum Framework* is posted on the VDOE website.

**Summer 2019: Regional 2018 *Science Standards of Learning* Professional Development Institutes**

The Office of Science, Technology, Engineering, and Mathematics presents the 2018 *Science*

*Standards of Learning* and the 2018 *Science Standards of Learning Curriculum Framework* and support materials to teachers, administrators, and science leaders. These Institutes provide training that focus on deepening participants' understanding of the Standards of Learning review and revision process, progression of the science standards, and the use of science skills and processes that provide Deeper Learning opportunities for students.

**2019-2020 Ancillary Cross-Curricular Lessons and Continued Professional Development Provided to Divisions**

Ancillary cross-curricular lessons and support professional development are provided to divisions to facilitate transition to the Revised *2018 Science Standards of Learning*. Copies of lessons are posted on the VDOE website.

**Superintendent's Recommendation:**

The Superintendent of Public Instruction recommends that the Board of Education accept the report on the amended timeline for the revisions to the *Science Standards of Learning*.