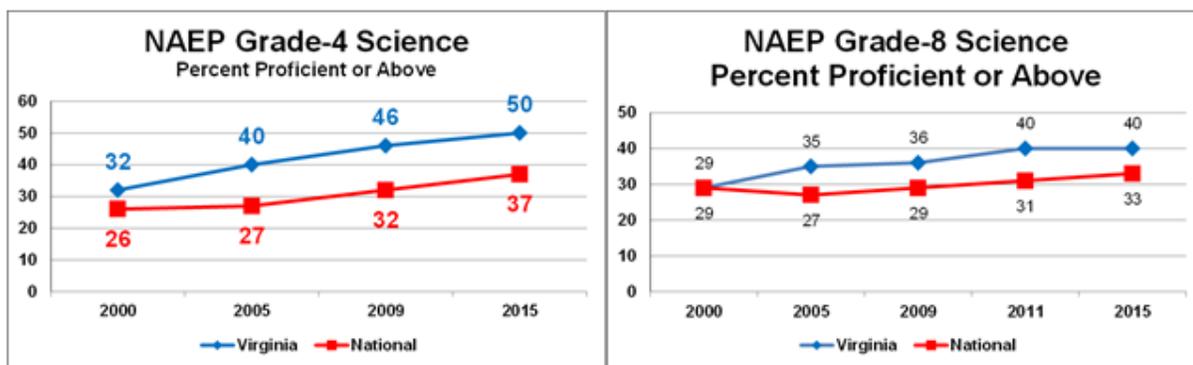


News

NAEP Results Show Virginia Students Ahead in Science

Results of 2015 national science tests announced that Virginia public school students are among the highest achieving in the nation, far outperforming their peers nationwide. The NAEP science assessment presents a broad view of what America’s students know and can do in science and is administered to students in grades 4, 8, and 12. The assessment was designed to measure students’ knowledge in three content areas reflecting the science content students are generally exposed to across the K-12 curriculum: physical science, life science, and Earth and space sciences. Results are reported at the national level for all three grades and on the state level at grades 4 and 8 only. For more information concerning Virginia’s student performance on NAEP testing, please visit [NAEP Science 2015 State Snapshot Reports](#).

“Virginia’s science standards require students to investigate and understand scientific concepts and then apply what they have learned,” Superintendent of Public Instruction Steven R. Staples said. “The commonwealth also has made significant investments in programs to increase the content knowledge of teachers and equip them with the ability to tap into their students’ sense of wonder, whether they are teaching in the classroom or in the field.”



Update: Performance Based Assessments in Virginia

[The First Review of Proposed Local Alternative Assessment](#) Guidelines for the development and implementation of Local Alternative Assessments were presented to the Board of Education on September 22, 2016. Please refer to this document to see proposed revisions to the Local Alternative Assessment Guidelines (letter H under Action/Discussion Items).

Support documents for the development and implementation of the Local Alternative Assessments provided through VDOE are listed below.

[Performance Task Development Cycle](#) (pdf)-provides common language for school divisions to use in determining their progress in implementing performance assessments.

[Framework for Local Alternative Assessment Implementation](#)

[Performance Task Development Cycle](#) (PDF)- a flow chart for the development of Performance Tasks.

Virginia Junior Academy of Sciences

It is time for students to begin thinking about science research projects and preparing for the 2017 [Virginia Junior Academy of Science \(VJAS\)](#) Research Symposium, which will be held on May 16-18, 2017,

at Virginia Commonwealth University (VCU). VJAS, a state chapter of the American Academy of Science, is dedicated to the advancement of science by discovering and encouraging scientific aptitude among Virginia's middle and high school students. Students who present at the Research Symposium have an opportunity for **publishing their science research** and receive **awards and scholarships**. View [Senator Tim Kaine's welcome address](#) from the 2016 Symposium.

The deadline for submitting papers for this year's symposium is **February 22, 2017**. Visit the [VJAS](#) Web site for more information.

Grants and Awards

[Chesapeake Bay Trust K-12 Environmental Education Mini Grants](#)

The Chesapeake Bay Trust is awarding up to \$5,000 in funding for organizations that hold meaningful outdoor learning experiences. The grant program is open and the application deadline is **January 13, 2017**.

[NOAA Climate Stewards](#)

Apply now to join the NOAA Climate Stewards 2017 Stewardship Community. Selected educators who meet project requirements will be eligible for:

- Up to \$2000 to support the execution of a climate stewardship action project.
- Travel reimbursements to attend select workshops and/or national conferences - following the successful completion of a climate stewardship project.
- Special professional development opportunities.
- Monetary and educational resources.

Applications are being accepted until midnight November 20, 2016. To learn more about this opportunity and apply, go to the [NOAA Climate Stewards Education Project Web Site](#).

[Presidential Awards for Excellence in Mathematics and Science Teaching \(PAEMST\) – Nominations Open – Grades 7-12](#)

The Presidential Awards for Excellence in Mathematics and Science Teaching is pleased to announce that the 2017 cycle for grades 7 – 12 has begun and the nomination process has been opened. Nominations close on April 1, 2017.

PAEMST are the nation's highest honors for teachers of mathematics and science (including computer science). Awardees serve as models for their colleagues, inspiration to their communities, and leaders in the improvement of mathematics and science education. Since 1983, more than 4,700 teachers have been recognized for their contributions in the classroom and to their profession. If you know great teachers, nominate them to join this prestigious network of professionals. For more information on PAEMST or to nominate a teacher, visit the [PAEMST website](#).

Technology in the Classroom

Since the theme of inquiry corner this update this letter is approaching science inquiry through a cross curricular lens, the free technologies this week are online resources that can support your science lessons.

[ReadWorks](#) is a resource that provides reading excerpts on science and other topics; you can choose the topic, lexile level, grade level, and keywords for when searching for articles. The sample attached corresponds to the Kindergarten recycling lesson attached. Reading passages and associated questions exist for science K-12. Check it out!

[Kid'sZone](#) is an online resource that allows student to design and print graphs of the data that they obtained in lab. This could also be used by teachers to generate graphs to be used to given students experience at reading and interpreting graphs. Different types of graphs are available through this easy to use resource/

Teacher Opportunities

Samsung Solve for Tomorrow

Public School teachers nationwide can help their schools with a share of \$2M in Samsung technology by entering the Samsung for Tomorrow contest. Developing projects that apply STEAM subjects to improve your local community can empower your students to learn creative problem-solving and critical thinking skills. Apply online and if selected, you will be asked to submit a lesson plan outlining how you will address the challenge, "Show how STEAM can be applied to help your local community." For more information, please go to [Samsung Solve for Tomorrow](#). **Applications are by November 15, 2016.**

NOAA's Teacher at Sea Program

The mission of the National Oceanic and Atmospheric Administration's (NOAA) Teacher at Sea Program is to provide teachers pre-kindergarten through college-level teachers a hands-on, real-world research experience working at sea with world-renowned NOAA scientists, thereby giving teachers unique insight into oceanic and atmospheric research crucial to the nation. Applications for 2017 will be accepted from November 1-30 2016. Until then, interested applicants should:

Until then, interested applicants should:

1. Visit the [Frequently Asked Questions page](#) to learn more about program eligibility and expectations.
2. Download the [pdf preview of our application](#) to review the questions that are ask and, if so inclined, begin preparing responses.

2016 Virginia Association of Science Teachers (VAST) Professional Development Institute (PDI)

The VAST PDI theme is The Faces of Science in Virginia. It builds upon last year's PDI theme Designing Inquiring Minds. The Faces of Science showcases the rich Virginia science resources that are available to you through the many science organizations and companies in Virginia. For a full description of the theme and strands, visit <http://www.vast.org/presenters.html>. The VAST Professional Development Institute will be held from **November 17-19** in Williamsburg, VA.

Student Opportunities

Kids' Tech University

Kids' Tech University is a semester-long educational research program developed by the Biocomplexity Institute and Virginia 4-H, that puts scientists and engineers in front of children to encourage the exploration of intriguing topics in Science, Technology, Engineering and Mathematics (STEM).

On Jan. 21, Feb. 18, March 18 and April 1, 2017, 450 kids (ages 9-12 by Sept. 31st 2016) and their parents will come to Virginia Tech (Blacksburg, VA) to watch Interactive Sessions by renowned research scientists and participate in hands-on activities. Each day's events will center on common themes related to everyday life.

Registration will open on Oct. 24, 2016 at 6 pm. There is a \$100 registration fee and scholarships are available. Please see- <http://kidstechuniversity.vbi.vt.edu>

Inquiry Corner

Elementary Focus: Approaching Inquiry through a Cross-curricular Lens

Finding time to teach the science standards and integrate inquiry laboratories into a hectic schedule can be a challenge. To do this effectively, teachers can approach multiple standards from different disciplines through a single inquiry lesson. Two examples of a lesson planning tool and a blank template to assist in planning a cross-curricular inquiry lesson are attached. The template is a sample tool that can be used for planning purposes; if you would like to use it, please feel free to adjust it as you need for your lesson planning.

Objective: *Given an assortment of solid and liquid substances, students will predict and describe how various materials (vinegar, milk, baking soda, powdered drink mix, sugar, salt, sand, oil, soil, rocks) act when mixed with water. Students will then classify liquids and solids into those that will dissolve in water and those that will not. Use tables and/or charts to record and display the information.*

Science Standards

1.3 The student will investigate and understand how different common materials interact with water. Key concepts include

- a) some liquids will separate when mixed with water, but others will not;
- b) some solids will dissolve in water, but others will not; and
- c) some substances will dissolve more readily in hot water than in cold water.

Language Arts Standards

1.10 The student will read and demonstrate comprehension of a variety of nonfiction texts.

- b) Use prior and background knowledge as context for new learning.
- d) Identify text features such as pictures, headings, charts, and captions.
- e) Make and confirm predictions.

Mathematics Standards

1.14 The student will investigate, identify, and describe various forms of data collection (e.g., recording daily temperature, lunch count, attendance, favorite ice cream), using tables, picture graphs, and object graphs.

1.15 The student will interpret information displayed in a picture or object graph, using the vocabulary *more, less, fewer, greater than, less than, and equal to*.

1.16 The student will sort and classify concrete objects according to one or more attributes, including color, size, shape, and thickness.

Objective: *Students will design and conduct an investigation to test the hypothesis: "If the mass of an object increases, then the force needed to move it will increase."*

Science

4.2 The student will investigate and understand characteristics and interactions of moving objects. Key concepts include

- a) motion is described by an object's direction and speed;
- b) changes in motion are related to force and mass;
- c) friction is a force that opposes motion; and
- d) moving objects have kinetic energy.

Mathematics

4.14 The student will collect, organize, display, and interpret data from a variety of graphs.

Language Arts

4.2 The student will make and listen to oral presentations and reports.

- a) Use subject-related information and vocabulary.
- b) Listen to and record information.
- c) Organize information for clarity.
- d) Use language and style appropriate to the audience, topic, and purpose.

Highlighted Superintendent's Memos

First Review of Proposed Amendments to the Regulations Establishing Standards for Accrediting Public Schools in Virginia, Parts I-VII (Proposed Stage)

- MEMO 268-16
2016 Fall Master Schedule Collection: 1) Secondary Enrollment Demographics Form (SEDF) Data; 2) Instructional Personnel and Verification of Licensure Endorsement Report; 3) Instructional Personnel Survey Data Report; and 4) Supply and Demand Report

SCED Code Updates

VDOE has transitioned from the use of state assignment codes to the School Codes for the Exchange of Data (SCED) developed by the National Center for Educational Statistics (NCES) for secondary and non-secondary schools. Revisions to the SCED codes for the 2016-2017 school year have been made in all content areas. The SCED 2016-17 Crosswalk ([PDF](#)) | ([XLS](#)) was updated October 12. See the [VDOE Master Schedule Collection](#) for more information.

MEMO 244-16

2016 Mathematics Standards of Learning and Curriculum Framework

MEMO 264-16 – October 18, 2016

Critical Shortage Positions

Information is provided about critical shortage positions in response to several recent inquiries from school administrators regarding the re-employment of retired teachers.

MEMO 258-16 – October 7, 2016

Co-teaching Demonstration Sites

As part of year three of the "Excellence in Co-teaching Initiative," the Virginia Department of Education (VDOE) invites your teachers to visit a co-teaching demonstration site in one of thirty-seven elementary, middle and high schools across the state.

Contact Us

As always, please contact one of VDOE Science Team if you have questions.

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