

**VDOE Science Update  
November 16, 2016**

**News**

***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.

[Framework for Local Alternative Assessment Implementation](#)

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

***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.

**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](#).

## Teacher Opportunities

### ***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:

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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.

### ***The Teacher Enrichment Program (TEP)***

The Teacher Enrichment Program (TEP) is CEE's program for middle and high school STEM teachers. TEP provides opportunities for rural and urban teachers to connect with experts from industry, academia, government, and STEM organizations to explore cutting edge research and make meaningful professional links with direct benefits for themselves and their students. TEP events are planned in California, Florida, Pennsylvania, South Carolina, Texas, and Virginia for this school year. We invite interested teachers to visit the program website at [www.cee.org/teacher-enrichment-program](http://www.cee.org/teacher-enrichment-program) to find out how to connect with scientists and engineers in your community through Bite of Science sessions and Teacher Roundtables and to explore a variety of online STEM resources. All online resources and events are cost-free for all participants.

## Student Opportunities

### ***National Youth Science Camp***

The National Youth Science Camp (NYSC) is an intense month-long camp for young scientists conducted during the summer after they graduate from high school. In a rustic setting in West Virginia, students from around the country are challenged academically in exciting lectures and hands-on studies on current science topics. The program also offers participants the opportunity to experience a wide variety of outdoor activities that have minimal impact on the environment and are challenging for the experienced but accessible to those who have never participated in outdoor excursions. The NYSC is an all-expenses-paid program. The National Youth Science Foundation will arrange round trip transportation from an airport near the delegate's home to Charleston, West Virginia. Information about the National Youth Science Camp and an application may be obtained at the [National Youth Science Camp](#) Web site. The application must be submitted through the NYSC Web site by March 1, 2017.

### ***Research Science Institute***

The Center for Excellence in Education and Massachusetts Institute of Technology co-sponsor the Research Science Institute that will be held on the MIT campus June 25-August 5, 2017. The application for this free institute is now available for current 11 grade students to apply. Students that are accepted into this institute are required to pay travel expenses to and from MIT. See application information at: <http://www.cee.org/apply-rsi>.

***USA Biology Olympiad Registration is Open!***

The 2017 Registration is now open for teachers and their respective schools. To register, please visit the USABO website <https://www.usabo-trc.org/>. Students should check *Student Info* for study resources. Registration closes **January 16, 2017**. Contact Kathy Frame, USABO Director, at [kframe@cee.org](mailto:kframe@cee.org) if you have any questions.

## Inquiry Corner

### *Second Grade*

*At this level, a high level of teacher facilitation may be required. Students need to be guided through the process of inquiry and laboratory design to build the skills that will lead them to work independently in later years.*

Condition: Given supplies such as cups (beakers), cookie sheets (flat surface), thermometers, heat lamps or sunny area, fan, ruler, scale, marker, stopwatch, etc.

Behavior:

Students will design and conduct an investigation to determine basic factors that affect the evaporation of water.

Success Criteria:

- Students (as a class) are able to identify questions to be addressed during the experiment;
- Students are able to determine general steps for a possible procedure (as a class and with teacher facilitation);
- Students are able to predict what factors will affect the evaporation of water.
- Students are able to determine what type of data they need to collect;
- Students are able to collect and record data such as length (size of the puddle), volume, mass or temperature using proper tools.
- Students are able to communicate (orally, in standard text, with models, and/or simple drawings) the factors that affect the evaporation of water.
- Students are able to analyze data and recognize unexpected or unusual quantitative data.
- Students are able to construct a simple model that can be used to describe the factors that affect evaporation.

### *Chemistry*

Condition:

Given horizontal work space, test tubes, aluminum foil pan, Bunsen burner or hot plate, iron ring and ring stand, assorted substances (sucrose, NaCl, CaCl<sub>2</sub>, citric acid, ethanol, KI, stearic acid), distilled water

Behavior:

Students will design and conduct an experiment to determine the trends and properties of ionic and covalent bonds. The experimental should include procedures designed to test melting point, solubility in water and ethanol, and conductivity as well as a description of each substance at room temperature.

Success Criteria

Prior to experimentation the students will design an experiment to include:

- a detailed, safe procedure that includes specific equipment and amounts of materials needed in the experiment.

Upon completion of the experiment, the student will analyze the experiment to include:

- a table that includes data collected in the experiment;
- an explanation of the data observed;
- an appropriate conclusion based on the data collected;

- descriptions of the general physical and chemical properties for ionic and molecular compounds;
- predictions the properties of a substance based on the type of bond; and
- any sources of error that may have been encountered in the experiment and how those errors may impact the experimental results.

## Highlighted Superintendent's Memos

- MEMO 282-16  
[Presidential Awards for Excellence in Mathematics and Science Teaching \(PAEMST\) Program](#)
- MEMO 284-16  
[New Local Alternative Assessment Guidelines](#) 

### **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.

## Contact Us

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

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