

VDOE Science Update
November 30, 2016

Every child deserves a champion – an adult who will never give up on them, who understands the power of connection and insists that they become the best that they can possibly be.

-Rita Pierson

Eric Rhoades, Director of Science and Health Education, has left the VDOE to become the Director of Curriculum and Instruction for Richmond City Public Schools. Although he will be missed at VDOE, his desire to make a difference in the lives of the students in Richmond City is laudable. We wish Eric the best of luck; he will be greatly missed by the Virginia science community.

The rest of us are still here and are willing to help with any questions or concerns you may have with science instruction. Please feel free to contact us at any time!

Anne

News

Update: ESSA

The [U.S. Department of Education](#) recently [announced final regulations](#) to implement the accountability, data reporting, and state plan provisions of the Every Student Succeeds Act (ESSA), with a focus on supporting states in using their flexibility to provide a high-quality, well-rounded education, and ensure equity remains at the core of implementation. The regulations will help states, districts and educators seize the opportunity ESSA provides to ensure a high-quality, well-rounded education that sets every student in America up for success in college and career.

For more information on the Virginia State Plan development process and an overview of ESSA changes, please visit the [VDOE website](#).

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**.

[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

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 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>. **Application due January 12, 2017.**

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 if you have any questions.

Inquiry Corner

4th Grade: Force and Motion

Conditions:

Given a designed horizontal workspace, assorted objects, string, weights, container, and other available and appropriate materials,

Behavior:

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

Success Criteria:

Prior to the experiment, the student will synthesize an experiment to include:

- appropriate tools to measure mass in metric units;
- independent and dependent variables and constants; and
- a procedure that includes the specific equipment needed to complete the experiment.

Upon completion of the experiment,

- a table that includes data collected in the experiment and a graph of the data (if appropriate);
- an explanation of the data observed;
- an appropriate conclusion based on the data collected;
- an explanation to indicate how the hypothesis was supported using evidence from the experiment;
- data collected by different groups is compared and contrasted in order to analyze similarities and differences in the findings; and
- any sources of error that may have been encountered in the experiment.

Windmill Design Challenge**Conditions:**

Given a horizontal surface, a motor, a fan, a small object to lift, and a selection of available materials (Styrofoam block, 12" sections of dowel, spools, card stock, construction paper, straws, cardboard, rubber bands, index cards, masking tape, etc),

Behavior:

Student teams are to design and construct a prototype windmill that can withstand the wind from a fan for one minute while winding a string or wire to lift a small object. Materials for the prototype may be "purchased" from the teacher. The least expensive design that meets the challenge will be considered the most effective design.

Success Criteria:***Planning Stage***

- Student teams of 3-4 students will collaborate to design a prototype of a windmill based on class/team research of windmill design.
- A schematic of the windmill, a list of the design materials, and a budget will be prepared by the team to present to the class.
- Upon presentation of each design, class feedback will be provided to the teams.
- Redesign based on feedback may occur.

Construction Stage


- Team builds prototype.
- Additional materials based on adjustments to the initial design will be regulated and revisions to the budget will be made by each team.

Testing and Evaluation

- Each team will test their windmill using a fan that is set 3 feet from the windmill being tested. The fan is to be kept at the same speed as designated by the teacher.
- The teacher will serve as timekeeper during the testing process to ensure the minimum one minute time constraint is met.

- Each student team will rate the effectiveness of their design and indicate any changes that they could make to improve the function of their windmill as well as reduce cost. If time allows, each team should adapt their work to test again.
- Apply their knowledge of renewable and nonrenewable energy resources and the geography to create an argument as to whether off shore wind power should be utilized in the state of Virginia.

Highlighted Superintendent's Memos

- MEMO 290-16
[2017 National Youth Science Camp \(NYSC\)](#)
- MEMO 282-16
[Presidential Awards for Excellence in Mathematics and Science Teaching \(PAEMST\) Program](#)
- MEMO 284-16
[New Local Alternative Assessment Guidelines](#) 

Contact Us

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

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