Subject: Science Update - December 12, 2013
Date: Thursday, December 12, 2013 at 8:25:15 PM Eastern Standard Time
From: Rhoades, Eric (DOE)
To: VSELA

Good afternoon all,

We hope there is something in this update for everyone. The Supt's memos are at the bottom, but there are several that are science-related for you to read.

NEWS

We know many of you have likely seen the PISA results already. In addition to the PISA results, we thought you might want to take a look at some of the companion documents like sample items and the draft 2015 PISA Science Framework. It is interesting to see the contexts they choose for their items.

PISA RESULTS: U.S. Slips in International Reading, Science, and Mathematics Rankings According to Latest Results from Programme for International Student Assessment

(Straight A's, 12/3/13) - Released December 3, the results of the 2012 Programme for International Student Assessment (PISA) show that American 15-year-olds ranked 17th in reading, 20th in science, and 27th in mathematics among the 34 countries of the Organisation for Economic Co-Operation and Development (OECD).1 Those rankings are lower than in the previous PISA given in 2009 when the United States ranked fourteenth in reading, 17th in science, and 25th in mathematics. Like traditional tests, PISA, which consists of multiple-choice and open-ended questions, tests students on what they have learned, but it goes one step further by also asking students to extrapolate what they have learned and apply that knowledge in unfamiliar settings, both in and outside of school. Full article

Standard Setting Study – Praxis Middle School Science Assessment

The Educational Testing Service (ETS), which develops and facilitates assessment requirements for Virginia licensure, has informed the Virginia Department of Education that the Praxis II Middle School Science assessment (0439) is being revised.

The revisions will require a new standard-setting study to be conducted for the assessment. Virginia will participate in the multistate standard setting study to be conducted by ETS.

The VDOE is requesting your assistance to nominate middle school science teachers to serve on a study panel. Two multistate panels will be formed for this Praxis Middle School Science assessment (5440). Nominated teachers must be available to serve on the panel dates but will only be selected to serve on one of the panels. The studies will be held at the Chauncey Conference Center, ETS Princeton Campus, Princeton, New Jersey. The schedule is as follows:

- Middle School Science Panel 1 – February 10-11, 2014
- Middle School Science Panel 2 – February 10-11, 2014

The VDOE would appreciate receiving your nominations as soon as possible but no later than January 6, 2014. Middle school science classroom teachers must meet the following criteria to be nominated for the study:

- Hold a full, valid Collegiate Professional License or Postgraduate Professional License with a middle education: 6-8: science endorsement;

- Have served as a middle school science classroom teacher for a total period of **three to ten years**; and
- Are available to travel and attend the study on February 10-11, 2014, in Princeton, New Jersey.

The Educational Testing Service (ETS) will be facilitating the study. ETS will reimburse panelists' travel, lodging, and meals costs in accordance with ETS guidelines for travel reimbursement.

Please fax the attached nomination form (attached) to Ms. Tamika Claiborne at (804) 530-4510. Individuals will be notified whether or not they are selected. Additional information will be provided to nominees at that time. **Please remind nominees that all individuals may not be selected to participate as we need to ensure statewide representation. ETS makes the final selection of nominees to serve on the panel.**

The VDOE very much appreciates your assistance in nominating middle school science teachers to participate in the study. If you have any questions, please do not hesitate to contact Dr. Mark Allan, director of licensure and school leadership, at (804) 371-2471 or Mark.Allan@doe.virginia.gov.

Future Education and Environmental Development (FEED) – Due January 30, 2014

The General Assembly called on the Secretary of Education, in consultation with the Virginia Community College System and the Board of Education to work with key stakeholders from school divisions, higher education institutions and the private business sector to consider and review potential planning steps necessary to develop and implement a conceptual model for an Integrated School of the Future. To meet the needs of the 21st century work force and higher education system, the integrated school of the future would include, but not be limited to, a cohesive approach to learning that infuses multiple principles across all curriculum areas and focus on providing state-of-the-art technology learning opportunities to all students.

Innovation funds allocated by the General Assembly were released to the Science Museum of Virginia to oversee the High School of the Future project which included the Next Generation Weekend and the Future Education and Environmental Development (FEED) Grant. The FEED Grant provides a small amount of funding to pilot new, innovative high school practices that could potentially be scaled throughout the state. If you are interested in applying for this small grant up to $20,000, please visit http://www.smv.org/teachers/virginia-stem. If you have any questions, please e-mail stem@smv.org.

Teacher Resources

EarthEcho Expedition: Into the Dead Zone

On Monday, Nov 25th all of the Expedition modules became live on their website. Educators can access videos and resources from all 5 days of **EarthEcho Expedition: Into the Dead Zone**, spanning topics from urbanization and air pollution to wastewater and biodiversity. As the year continues, they will be adding new resources to the website

Throughout the year, they will also be hosting a series of Google+ Hangouts on Air. They will be (generally) the first week of the month, however that varies due to holidays. Topics will range from service learning and professional development to virtual field trips.

Opportunity Reminder and new video for NOAA Climate Stewards

The application process for the NOAA Climate Stewards Class of 2014 is open. A video introducing the program, reviewing Project goals, benefits, and the expectations of all participants along with a link to the online application is posted on the Project Web page:http://oceanservice.noaa.gov/education/climate-stewards/.

Applications will be accepted until Friday, December 13, 2013.

NRC Workshop on Exploring the Overlap between "Literacy in Science" and the Practice of Obtaining, Evaluating, and Communicating Information

Interest in the workshop was been beyond the NRC's expectations. The background readings from the workshop are posted on their workshop webpage.

Update to the Standards of Learning (SOL) Science, Writing, and End-of-Course (EOC) Reading Practice Item Sets on the Virginia Department of Education Web Site

Additional practice items have been added to the grades 3, 5, and 8 science, End-of-Course (EOC) Earth Science, EOC Biology, EOC Chemistry, grades 5, 8, and EOC Writing, and EOC Reading practice item sets located at http://www.doe.virginia.gov/testing/sol/practice_items/index.shtml. The number of additional items varies by test, but in all cases the additional items have been added to the end of the existing practice items.

Should you have any questions, please contact the student assessment staff by e-mail atStudent_Assessment@doe.virginia.gov or by phone at (804) 225-2102.

Safety Updates

OSHA Resources

OSHA has set a **December 2013 deadline** for all employers--*including schools*--to provide training to ensure that teachers and staff understand how to read new Globally Harmonized System (GHS) chemical labels. OHSA has created a host of resources. Please visit the OSHA Hazard Communication website to view and download the Hazard Communication Wallet Card, Training Requirement Fact Sheet, and more.

Teacher Opportunities

Now Accepting Applications for the AP Biology Leadership Academy - Now Accepting Applications!

We invite you to apply for the next cohort of the BSCS/NABT AP Biology Leadership Academy. This popular and highly acclaimed Academy is only available to 40 biology teachers a year who are ready to become leaders in biology education.

The goal of the Academy is to develop a new generation of leaders in biology education. Not only will participants understand more about the AP Biology Curriculum Framework, they will be able to design and teach a course that exemplifies the framework. We have designed the Academy to be a specialized professional development experience for you as an AP teacher.

The Academy is designed to help you stop, reconsider, and rejuvenate your ideas about teaching and

learning biology, while also preparing you to lead others in this process. Apply here to be a part of Cohort 3 of the AP Biology Leadership Academy.

Reaching For The Stars sponsored by the Virginia Instructors of Physics and James Madison University

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The meeting will start with coffee/snacks and introductions. Then we will have a presentation by Dr. Shanil Virani (Director, John C. Wells Planetarium) and Dr. Brian Utter (Associate Physics Professor/Physics Education Advisor) about the resources/programs available to both teachers and students through the the Department of Physics and Astronomy. Following the presentation we will enjoy a show in the planetarium. After the planetarium show we will have a short sharathon* then break for lunch. (Lunch will be provided.) Once lunch has conclude we will start our afternoon session with a presentation on the Science on a Sphere.
Following Science on a Sphere we will wrap up our AP Physics 1/2 test question writing started in September and move into the next phase of our AP Physics ½ project.
*Attendees are encouraged to bring a demonstration appropriate for material typically taught in the second semester of physics. See attached flyer.
Registration: Contact Joe Mahler, mahlerjm@jmu.edu, by email to register.

Meteorology course for graduate credit for middle and high school teachers

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The Blue Ridge Earth Science Collaborative, a joint project of the University of Virginia and James Madison University, is now accepting applications for the second of four graduate-level Earth Science courses for middle and high school teachers. The Meteorology course will be offered in a blended format, with online components from January 20-April 19, 2014 and three face-to-face meetings at JMU (February 8, March 22, and April 19.)

The course includes inquiry-based classes on meteorology, instruction on innovative methods for teaching meteorology, time for developing your lesson plans, and hands-on laboratory work. The instructor will be Dr. Eric Pyle, professor of geology in the Department of Geology and Environmental Science at James Madison University. Thanks to funding from a SCHEV Improving Teacher Quality State Grant, teachers are required to pay a reduced tuition of only $150 for the course and will receive three graduate credits. This is approximately 1/5 of the cost of full tuition. Please check with your school division on reimbursement policies for professional development courses. For the face-to-face meeting, free housing (double occupancy) is available for teachers who cannot commute each day.

Meteorology and the other courses in the Blue Ridge Earth Science Collaborative series are designed to contribute to an add-on endorsement in Earth Science for teachers already holding a secondary science certification in Virginia.

For more information and registration, please visit http://www.astro.virginia.edu/BRESC/index.html.

Shell Lab Challenge competition help requested - Science Matters State Coordinators

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Shell and the National Science Teachers Association (NSTA) have pannered to recognize outstanding middle and high school programs for their exemplary approaches to science lab instruction utilizing limited school and laboratory resources. The Shell Science Lab Challenge will showcase the work of teachers, representing their schools, who submit innovative, replicable strategies to deliver quality lab experiences with limited equipment/resources, and award teachers/schools with additional tools, resources, and rich professional development opportunities needed to support high-quality science teaching and strengthen their existing capabilities.

Application for 2013–2014
Download an application

Deadline: December 20, 2013

"Ask NICE"

Educator Professional Development from NASA Innovations in Climate Education (NICE).
Online sessions on third Thursdays from 4-5pm ET are offered to all teachers.

Schedule:
October 17: Earth's Energy Budget/ Student Cloud Observations On-Line: S'COOL
November 21: Climate Change Summary: What We Know and How We Know It
January 16: Impacts of Climate Change/The GLOBE Program: Green-Up
Additional Sessions: TBA

Visit the NICE website to connect: https://nice.larc.nasa.gov/
Sponsored by Minority University Research and Education Program (MUREP) - NICE

Toshiba/NSTA ExploraVision

ExploraVision is a competition that encourages K-12 students of all interest, skill and ability levels to create and explore a vision of a future technology by combining their imaginations with the tools of science. Teams of two to four students research scientific principles and current technologies as the basis for deigning innovative technologies that could exist in 20 years. Students compete for up to $240,000 in savings bonds (maturity value) for college and cool gifts from Toshiba. First- and second-place teams also receive an expenses-paid trip with their families, mentor and coach to Washington, D.C. for a gala awards weekend in June 2014.

Student Opportunities

Youth Rover Challenge

Registration for the Youth Rover Challenge (YRC), a multi-tier robotics education development program, is now open. Sponsored by The Mars Society, YRC is a STEM-related educational effort that is designed for schools and organizations with students or members in grades 5-12 to have the chance to build and compete at a global level with a LEGO Mindstorms NXT 2.0 based robotic rover and competition arena intended to simulate the surface of Mars. The sandbox where the robotic rover operates is intended to be replicated so participants can operate the competition locally. Winners of the best place times will be invited to one of four events held in each region.

The Rover built for the competition is pre-designed accomplish specific experiments (tasks) similar to what Mars Rovers accomplish today on the surface of Mars and other harsh environments on remote places on Earth. The competition is operated on-site at your self-built sandbox and the final operation of the field tasks are then videotaped and sent to YRC for submission. Teams that have submitted videos that show the final operation of the rover completing the tasks under a time limit are then ranked against other teams.

Registration for the competition closes **January 31, 2014**. For more information about YRC, click here.

Highlighted Superintendent's Memos

MEMO #304-13
Nominations for the 2014 Standards of Learning Item and Test Review Committees

MEMO #314-13
Virginia Initiative for Science Teaching and Achievement – Applications Open for 2014-2015 School Year

MEMO #306-13
Reimbursements for Advanced Placement and International Baccalaureate Test Fee Payment Program for 2012-2013

MEMO #312-13
Virginia Junior Academy of Science

MEMO #302-13
Application for 2014 Innovative Learning Teams

As always, please contact one of us if you have questions.
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Jim Firebaugh (jim.firebaugh@doe.virginia.gov)
Eric Rhoades (eric.rhoades@doe.virginia.gov)

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