

SCIENCE NEWS

January 2010

Teachers,

Please remember to nominate an elementary science teacher (K-6) to apply for the Presidential Award for Excellence in Mathematics and Science teaching. This is our nation's highest award for math and science teachers. You can nominate online and also find more information at <www.paemst.org> or contact me at <Jana_Rowland@sde.state.ok.us> if you have any questions.

Several of you have contacted me concerning Oklahoma's application for the Race to the Top funds. Oklahoma's application has been sent to USDE for consideration. The application was written by a committee appointed by Governor Henry.

There are many resources available to you to help prepare students for the state assessments in science. Go to <www.sde.state.ok.us>, click the Teachers picture and link, Click Accountability and Assessment, click Oklahoma Core Curriculum Tests (OCCT). These documents are essential to download and incorporate into your instruction:

- Test and Item Specifications - (test information- look for Depth of Knowledge(DOK) descriptors and sample test questions for 5th, 8th, and Bio I EOI)
- Blueprints – download both the process standards document and the content standard document as these percentages will help you to determine the amount of classroom time required for each objective
- Released Tests- more sample questions

Contact Gaile Loving in the Assessment Office at Gaile_Loving@sde.state.ok.us or me if you have questions.

Summer Field study for middle school students

Middle school students in Grades 6-8 are encouraged to apply for a summer field program offered by the Sam Noble Museum in Norman. Oklahoma Science Adventure is a one-week residential program that gives students hands-on experience working with museum scientists in real field settings at no cost to the student. Fourteen students statewide will be selected through a competitive application and interview process. The program is scheduled for July 10 – 17, 2010.

Applications are available online at <<http://explorology.snomnh.ou.edu/osa>>. Deadline is February 26, 2010. For more information, contact: Holli Langlieb, Sam Noble Oklahoma Museum of Natural History, at (405) 325-2802.

Visit <<http://explorology.snomnh.ou.edu/osa>>.

Teaching the Cell Cycle – Innovative lesson from teacher

I finished the cell cycle about 2 weeks ago & I tried something different that most of the kids really seemed to enjoy. Working in groups of 3-4, the students made a stop motion animation of the cell cycle in class. I gave them one class period of instruction on the cell cycle the day before they started and showed them one mitosis video animation from Cells Alive (website) and let them begin their projects the next day in class. It took them about 4 days to plan their animation, gather materials & take their pictures using digital cameras. It took another day or so to upload their pictures to the computers, transfer them to windows movie maker & then create their movie. Here's a link to my wiki space where you can view the finished videos. Please remember that this was the first experience with film making for both me & my students so they're a bit rough around the edges. Also, my class periods are only 40 minutes long so the kids didn't have much time between set up and clean up each day.

<http://mrszernsclass.wikispaces.com/Table+of+Contents>

Thinkfinity web site – Lesson plans, podcasts, videos for K-12

Verizon Thinkfinity contains thousands of free, engaging educational resources that make learning fun, including K-12 lesson plans, in-class activities, and videos that can be found quickly and searched by grade level, keyword, or subject.. Content for Verizon Thinkfinity is provided through a partnership between the Verizon Foundation and eleven of the nation's leading organizations in the fields of education and literacy: the American Association for the Advancement of Science, Council for Economic Education, International Reading Association, The John F. Kennedy Center for the Performing Arts, National Center for Family Literacy, National Endowment for the Humanities, National Council of Teachers of English, National Council of Teachers of Mathematics, National Geographic Society, ProLiteracy, and the Smithsonian's National Museum of American History. Find out more at (www.thinkfinity.org).

(Teachers, I looked at several of the lessons and podcasts and these would be very useful in the classroom. You can search by grade span, but even if you teach Biology, check out the videos and lab activities from the early grades. These can easily be adapted to higher grade levels using the resources. The lesson has some interesting questions at the end and these would make great bellringer discussions.)

Interactive event for HS students- Solar Dynamics Observatory

Join NASA's Digital Learning Network for exploration of an upcoming mission to understand more about the sun and its impacts on Earth.

How intense will the next solar cycle be? Can scientists predict when a violent solar storm will blast Earth with energetic particles? How does this peculiarly low activity of the sun in 2007-2010 counteract global warming trends? These are a few of the questions that scientists anticipate the new Solar Dynamics Observatory, or SDO, will help to answer. SDO is scheduled to launch in February 2010. To energize students and teachers about this mission, **NASA DLN will host a one-hour interactive event with scientists and engineers of SDO. Geared for students in grades 9-12, the event will take place on Jan. 26, 2010, at 1:00 p.m. EST.**

Slots are limited, and schools will be selected upon evidence of need and how the event will match the school's curricular activities. All schools interested in connecting to this videoconference must send a contact name, school name and address, grade level, number of students to participate, and a short description of how this event will benefit the curriculum to Dr. Marci Delaney, <marci.delaney@nasa.gov>.

Master Teachers Project - SDE

The Master Teachers Project is a plan of professional development for Oklahoma public school teachers to meet the goals of No Child Left Behind (NCLB). The professional development plan is a "train-the-trainer" model designed to develop a cadre of teacher-trainers in six regions of the state (Northwest, Southwest, Northeast, Southeast, Oklahoma City, and Tulsa). The 2010 application is now available on the Master Teachers' page of the State Department of Education web site at <<http://www.sde.state.ok.us>>. The application and information will also be mailed to school superintendents. Application deadline is Friday, February 12, 2010. Selection and notification will be completed by March 2010. For more information contact Dr. Jennifer Watson, (405) 351-3361; <Jennifer_Watson@sde.state.ok.us>.

Engineers Week- February 14-20, 2010

Free information about Engineers Week can be found at <<http://www.eweek.org>>. Teachers can download the Engineer Volunteer Kits for free. Posters, banners, and ideas are available at <<http://www.eweek.org/NewsStory.aspx?ContentID=193>>. Free hands-on activities (Discover E K-12) are available at <<http://www.eweek.org/EngineersWeek/DiscoverE.aspx>>.

HS teachers PD opportunity in Astrobiology

The Astrobiology Summer Science Experience for Teachers (ASSET) is being held July 18-24 at San Francisco State University. ASSET will feature presentations by leading astrobiology researchers from the SETI Institute, NASA and the California Academy of Sciences. Scientists will share the latest in astrobiology research on the origin of life on Earth, the extreme conditions in which life exists, Mars exploration, the formation of planetary systems around Sun-like stars, and the search for in the universe. Participants receive the entire Voyages Through Time curriculum (see www.voyagesthroughtime.org) and free astrobiology materials. **All expenses are covered by grant funds. Applications accepted Jan. 4 through February 12, 2010.** Details at <<http://www.seti.org/epo/ASSET>>.

Science Museum Oklahoma – Educator Preview

This Friday, January 22, as well as Tuesday, January 26, are our Spring Semester Educator Preview nights. All Oklahoma teachers, along with one guest of their choice, will receive free admission to the museum from 3:30 to 7:30pm, the opportunity to see our newest IMAX film Fighter Pilot: Operation Red Flag, catch a glimpse of our brand new OERB live performance and take a behind-the-scenes tour of our new forensic science exhibit Whodunit: The Science of Solving Crimes. Staff from both Science Museum Oklahoma and OERB will be on hand to answer questions about exhibit-PASS

skill correlation, field trip scholarships and more. If you or someone you know is an educator make sure that they don't miss this opportunity to see how Science Museum Oklahoma can serve as an extension of your classroom.

You can RSVP on our web site at <www.sciencemuseumok.org/register.html>.

Friday, January 22, 2010 OR Tuesday, January 26, 2010

3:30 - 4:00 Registration

4:00 - 4:45 Fighter Pilot: Operation Red Flag

5:00 - 5:45 Welcome and presentation of Science Museum Oklahoma's OERB Petro Power Show

6:00 - 7:30 Whodunit: The Science of Solving Crimes, refreshments, meet-and-greet with staff members

2100 NE 52nd St., Oklahoma City, OK 73111

(405) 602-6664 * ScienceMuseumOK.org

*Additional tickets are available for purchase for attendees who would like to bring more than one guest. Tickets are \$10.95 for adults and \$8.95 for children and seniors. Children 3 and under are admitted free.

**Seating for Fighter Pilot: Operation Red Flag is limited, and is first come, first served.

Bright Night of Science - SMO

This past Friday night Science Museum Oklahoma (SMO) held its annual Bright Night of Science. Guests from across the state participated in scientific experiments, built catapults, solved crimes and camped out inside of their favorite exhibits. The sounds of laughter and learning continued hours after the museum doors closed to the general public.

This was only one of many opportunities to spend the night at Science Museum Oklahoma. **March 19th is the Bright Night of Flight** where guests will embark on an amazing aviation adventure and explore the incredible world of flight.

For more information or to register contact us at (405) 602-3760.

The ASHG 5th Annual DNA Day Essay Contest

The submission site is now live. You can visit <http://www.ashg.org/education/dnaday.shtml> and click on '5th Annual DNA Day Essay Contest' for the submission link, rules, and more information. Please be reminded that the deadline is **March 15, 2010** at 5:00 PM EST.

2010 DNA Day Essay questions:

Option 1: Scientists can now determine the complete DNA sequences of organisms, including humans. Now that this milestone has been reached, is there a reason to continue learning about Mendel, alleles, and inheritance patterns? Explain your answer.

Option 2: Genetic testing allows geneticists to determine an individual's DNA sequence, and research has identified a number of genes, such as HMGA2 and GDF5, that are associated with height. Will such associations allow scientists and physicians to predict a person's final adult height from infancy? Explain your answer.

Questions? Please email Angie Wong (awong@ashg.org).

Exploring the Past: Archaeology in the Upper Mississippi River Valley

Walking beside thousand-year-old burial mounds, flaking raw stone into tools, learning how potsherds tell us about human behavior, and understanding how humans adapt to complex, ever-changing environments our 2010 Summer Institute features all this and more.

The Mississippi Valley Archaeology Center at the University of Wisconsin–La Crosse will offer a three-week NEH Summer Institute on July 12–30, 2010. This dynamic learning experience for K-12 teachers will explore how Native Americans and Euro-Americans have adapted to the Upper Mississippi River Valley over the past 13,500 years, and how archaeology leads to an understanding of how human cultures change and adapt through time.

The Institute will feature a one-day excavation experience, field trips to archaeological sites, hands-on laboratory and workshop activities, demonstrations, and classroom activities. Individual projects will help participants tailor the content to their own teaching areas. Participants receive a \$2,700 stipend to help offset their expenses.

Application and other information on the Institute is available online at <http://www.uwlax.edu/mvac>. **The deadline for applications is March 2, 2010.**

Moon posters

Find free posters on the origin of the moon and moon exploration from the Lunar and Planetary Institute. There are also links to moon facts, geology, exploration, and more at <www.lpi.usra.edu/education/moon_poster.shtml>.

MS-HS Life Science/Biology Activities

Activities for classroom use at

<http://serendip.brynmawr.edu/sci_edu/waldron/#trans>.

Biology-Anatomy/Physiology demo videos

These short videos are rigorous- probably for AP Bio or Anatomy/Phys. The blood type demo is a good visual for understanding differences in blood types.

See <<http://www.vcasmo.com/user/HHMIUCI&pn=1>>.

Bilingual Glossaries

The bilingual glossaries [on a variety of science, social studies and math subjects] are intended to be used by teachers, LEP students, test translators, and material and curricula developers. Students may use these documents as supplements to their texts, as study or as references. Teachers can use the glossaries as reference in preparing lessons. They should be of special value in classrooms where the teachers do not speak the targeted languages.

Available at <http://www.emsc.nysed.gov/biling/bilinged/bilingual_glossaries.htm>

Trees available to schools

Schools and non-profits in the Tulsa area can apply NOW for 3-5 gallon potted native oak and redbud trees (primarily) for projects on their school property, in city parks, along main street, etc. This is a great opportunity for trees to use in a service learning project, in conjunction with Oklahoma Arbor Week (March 21-27, 2010) or other tree planting

events. Contact Up With Trees directly at <www.upwithtrees.org>. Proof of non-profit status or school affiliation may be required.

Christina Stallings Roberson
Education Coordinator/ Project Learning Tree
405-522-6158 <www.forestry.ok.gov>

Butterflies in Space Project

Last month, Painted Lady butterflies flew aboard the Space Shuttle Atlantis to the International Space Station. The butterflies will spend several months in space as part of an exciting experiment to observe their life cycles and behaviors in microgravity. Classes are invited to participate by registering for updates about the mission. Teachers can download a free Teacher's Guide and engage students in concurrent activities with their own butterflies. Photos and videos will be transmitted back to Earth and made available online.

Find information and download a teacher's guide at <http://www.bioedonline.org/space/STS_Mission_129.cfm>

Where the Wild Things Are Activity Guide

National Wildlife Federation has teamed up with the film "Where The Wild Things Are" to launch a national campaign to get kids outside. The "Where the Wild Things Are" Activity Guide will help teachers explore the film's themes, with activities designed for grades 2–5 and extensions for younger and older students. These activities meet national standards for English/Language Arts, Science, Social Studies and Visual Arts. Available at <<http://www.nwf.org/BeOutThere/parentsguide.html>>.

Learning & Leadership Grants

These grants, funded by NEA, support public school teachers, public education support professionals, and/or faculty and staff in public institutions of higher education for one of the following two purposes: 1) Grants to individuals fund participation in high-quality professional development experiences, such as summer institutes or action research. 2) Grants to groups fund collegial study, including study groups, action research, lesson study, or mentoring experiences for faculty or staff new to an assignment. Applicants must be practicing U.S. public school teachers in grades K–12, public school education support professionals, or faculty and staff at public higher education institutions. Preference will be given to members of the National Education Association. The NEA Foundation encourages grant applications from teachers with less than seven years of experience in the profession, and education support professionals.

Average Grant Amount: \$2,000.00 - \$5,000.00

Proposal Deadline:

2/1/2010

Information is available at: <http://www.neafoundation.org/programs/Learning&leadership_Guidelines.htm>, or info-neafoundation@list.nea.org.

Resources and info for teaching soil concepts

Six thousand members strong, the Soil Science Society of America (SSSA) is a scientific organization that aims to support geoscience teaching and learning about soils. This AGI member society provides an educational resources webpage <<https://www.soils.org/lessons/>> that includes lessons, activities, fun facts, sites of interest organized by soil topic and grade level, and soil definitions for the novice soil scientist.

Anyone interested in science education is welcome to join the Science Listserv by contacting Jana Rowland at <Jana_Rowland@sde.state.ok.us>.

Jana Rowland, Science Director
Standards and Curriculum
Oklahoma State Department of Education
2500 N. Lincoln Blvd.
Oklahoma City, OK 73105
(405) 522-3524
FAX (405) 521-2971
Jana_Rowland@sde.state.ok.us