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1. K-12: Conference Highlights from the Science Education Council of Ohio

<http://www.secoonline.org>

SECO is the state science affiliate of the National Science Teacher Association, and has represented science educators in the state of Ohio for the past 30 years.

This year SECO's Science Professional Development Conference will be held February 8, 9, 10, 2007, at the Dayton Convention Center, in Dayton OH.

Teachers of science should attend this quality science inservice opportunity. This event can be a great financial savings to your district! Here are some highlights:

- 1). NSTA President Linda Froschauer will be addressing participants at the General session on Friday Feb 9. She will also address and discuss topics specific to pre-service and early career teachers in concurrent sessions during the afternoon.
- 2). The conference has 112+ one hour sessions to choose from. Graduate Credit is offered for attending the strand sessions.
- 3). 12 Short Courses are offered throughout the conference for grad credit.
- 4). 80 exhibitors providing the largest exposition of science related materials, lab equipment and textbooks in the State of Ohio.
- 5). CEU certificate of attendance will be signed and certified for each attendee.
- 6). Sam Zigrossi, Program Director of Special Projects, University of Texas will present "Science Education in the 21st Century: A provocative look at the evolution of science education

over the past 60 years and a peek into the future to answer the question: 'Is science education preparing students for the 21st century?' "

7). Most important the Ohio Department of Education will be presenting a 3 hour seminar each day. The presentation, called "Fundamentals of Science Education", will enable teachers to prepare students for success Grade 5, 8, and OGT. The presentation will include content knowledge gaps, the latest scientific developments, and techniques to help teach students.

For more details, try the SECO line (voice mail /fax): (330) 239-1371.

2. K-12: New Feature at ORC

The ORC has added a new weekly feature focusing on the 5th and 8th grade Ohio Achievement Tests in science. Each week for 20 weeks ORC's science specialists will identify benchmarks for grades 3-5 and 6-8 and compile a set of resources related to the identified benchmark. The commentaries for the resources point out features of the lesson that may be helpful in preparing students for success on the test while focusing on science content and processes. The feature currently appears in the FYI section of ORC's homepage. Take a look at the first two installments!

Grade 5: Earth and Space Science Benchmark B: Processes that Shape Earth's Surface
http://ohiorc.org/bookmark/view_a_folder.aspx?mid=153565740&folderID=6540

Grade 5: Life Science Benchmark B: Plant and Animal Structures and Functions
http://www.ohiorc.org/bookmark/view_a_folder.aspx?mid=156219093&folderID=6653

Grade 8: Earth and Space Science Benchmark E: Processes that Shape Earth's Surface
http://ohiorc.org/bookmark/view_a_folder.aspx?mid=182707074&folderID=6567

Grade 8: Life Science Benchmark B: Characteristics of Organisms that are Crucial for Life
http://ohiorc.org/bookmark/view_a_folder.aspx?mid=183402624&folderID=6592

Reruns

The following mini-collections from ORC appeared in earlier eBlasts but the links didn't function properly. We've included them again for your convenience.

November 20 eBlast

Elementary Physical Science: Chemical Change
http://ohiorc.org/bookmark/view_a_folder.aspx?mid=151757703&folderID=6463

Middle School Physical Science: Chemical Change
http://ohiorc.org/bookmark/view_a_folder.aspx?mid=151781184&folderID=6464

High School Physical Science: Chemical Change
http://ohiorc.org/bookmark/view_a_folder.aspx?mid=151804665&folderID=6465

November 8 eBlast:

Elementary Earth Science: Moon Phases

http://ohiorc.org/bookmark/view_a_folder.aspx?mid=148963464&folderID=6344

Middle School Life Science: Energy in an Ecosystem

http://ohiorc.org/bookmark/view_a_folder.aspx?mid=148986945&folderID=6345

High School Physical Science: Atomic Structure

http://ohiorc.org/bookmark/view_a_folder.aspx?mid=149010426&folderID=6346

3. K-12: Space Day is coming: Mark your calendars now!

<http://www.spaceday.com>

Space Day is an educational initiative that inspires young people to explore careers in mathematics, science, engineering and technology and to realize the vision of our space pioneers. The first Friday in May has been designated “Space Day”, and people of all ages in the U.S. and around the world will come together to advance education in these areas.

In honor of President George W. Bush’s commitment to human exploration of the moon, this year’s theme is *Space Day 2007... 50 Years In Space... And Still Havin’ A Blast!* In 2007 Space Day will take place on May 4, and offers a variety of educational programs to inspire the 21st century space explorers, scientists and inventors.

For more information please visit the web site, which serves as “mission control” for Space Day activities. This site links to educational resources, space-related information sites and provides the details about Space Day educational programs and events that will be taking place across the country... including:

3a. Gr 4-8: The 2007 Design Challenges

These offer real opportunities for your students to be involved and engaged. Organize your students into teams and have them enter the appropriate grade level challenge to win recognition as “Stellar” Design Challenge Teams in Washington, D.C. on Space Day. Submit your students’ Design Challenges by February 1, 2007.

4. K-12: Light Science in the Sky and other shocking science

<http://www.arborsci.com/CoolStuff/cool25.htm>

The sky offers a wide variety of stunning optical effects. A source of inspiration for poets and songwriters alike, these atmospheric phenomena include red sunsets, rainbows, mirages, halos, glories, and coronas. Read more online!

Other areas of interest

Free Download! Double-Slit Diffraction with just a Laser Pointer and a Laser Printer, Each of your students can now generate their own double-slit patterns -- and it's FREE! View now:

http://www.arborsci.com/Products_Pages/Lasers/LasersBuy1.htm#DoubleSlit

"Shocking Gas Station Experience: Electrostatic Charge" The all-time most popular video feature from CoolStuff. This clip shows the very real danger of an electrostatic charge captured

by a gas station security camera. Download this file and keep it on hand for future use...

<http://clickmeter.dundee.net/t/23605190/32497023/61824/0/>

Hands-on student activity for Electrostatics! Have your students build their own "Electrostatic Generator". Complete instructions and teacher notes covering the concepts behind this popular device. Get this and other great activities from the CoolStuff Archives. Go now:

<http://www.arborsci.com/CoolStuff/cool18.htm#Vandegraaff>

5. K-12: A Fin is a Limb is a Wing

<http://www7.nationalgeographic.com/ngm/0611/feature4/index.html>

The November 2006 National Geographic magazine featured an article on Evolution. Check out the web site, or find a copy of the magazine for more about how “scientists are tracing the steps through which evolution forged its successes.” They are finding that the same genetic tool kit can build structures both simple and complex.

The father of evolution was a nervous parent. Few things worried Charles Darwin more than the challenge of explaining how nature's most complex structures, such as the eye, came to be. "The eye to this day gives me a cold shudder," he wrote to a friend in 1860.

Today biologists are beginning to understand the origins of life's complexity—the exquisite optical mechanism of the eye, the masterly engineering of the arm, the architecture of a flower or a feather, the choreography that allows trillions of cells to cooperate in a single organism.

The fundamental answer is clear: In one way or another, all these wonders evolved.”

6. K-12: ARMADA Project- Research and Mentoring Experiences for Teachers

<http://www.armadaproject.org>

The University of Rhode Island's Office of Marine Programs is now accepting applications for the ARMADA Project- Research and Mentoring Experiences for Teachers. The ARMADA Project provides K-12 teachers an opportunity to actively participate in ocean, polar, and environmental science research and peer mentoring.

Selected Master Teachers (with five or more years teaching experience) are paired with leading scientists and participate in shipboard, field, or laboratory research with all expenses paid. Research experiences will take place during the summer, although there may be opportunities during the school year. Upon completion of their research experience, Master Teachers develop ways to bring the fruits of their research experiences, including scientific data, methodologies, and technology into their classrooms. They share their experiences by mentoring new teachers in their school district and by presenting their results at the National Science Teachers Association National Conventions.

The ARMADA Project has involved teachers in research experiences all over the world. Past experiences include taking part in the largest North Pacific humpback whale study in the waters off the coast of Alaska, investigating the impacts of global change in the Arctic Ocean, monitoring and assessing tidal creeks in South Carolina, studying the impact of human activity

on dusky dolphins in New Zealand, exploring the seafloor off the coast of Sumatra to better understand the forces that lead to the 2004 Asian tsunami, water circulation studies in the Norwegian Sea, and a variety of ecosystem monitoring projects in the Bay of Fundy, Narragansett Bay, Gulf of Maine, Stellwagen Bank, Western Shelf of Florida, Sargasso Sea, Bahamas, Alaska, and Block Island Sound.

The application deadline is February 5, 2007. For more information about teacher qualifications, responsibilities, and to download an application see the ARMADA Project website www.armadaproject.org or contact Andrea Kecskes at 401-874-6211 or armada@gso.uri.edu.

7. K-12: A Professional Reading that is well worth the time!

"What is Science?"

[http://www.ohiosci.org/WhatisScienceOJS106\(4\)130-135.pdf](http://www.ohiosci.org/WhatisScienceOJS106(4)130-135.pdf)

The article from the Ohio Academy of Science defines science, and also discusses what the Scientific Method is, what a scientific hypothesis is, what “theory” means in science, what is NOT science, and what the importance of science is. The references are provided, so depending on where you plan to cite this article, you can have even more reading to tackle over the holidays!

8. K-12: Take a closer look: Orange County, California has some great ideas to share

<http://science.ocde.us/SciWeb.html>

Check out the resources at this site, especially the Podcasts of Science Misconceptions and the California Assessment items. These may both be very useful – even here in the midwest!

9. K-12: Think big and outside the box

<http://pbskids.org/designsquad/>

Over 13 episodes, eight teenagers will compete to design and build fantastic, whimsical, and fully operational machines — everything from peanut butter and jelly sandwich makers to race cars. Teams will be scored for their ability to think outside the box and meet (or surpass) the demands of the challenge at hand. In the final episode, the top two scorers will battle for the Grand Prize — a \$10,000 college scholarship provided by the Intel Foundation.

NSF is a major funder, although most of the other sponsors are engineering firms; still – check it out!

10. K-12: Welcome to a wonderful world of water!

<http://www.thirteen.org/h2o/>

Discover water hot-spots around the world. Investigate terrific new water technology. Learn about cool careers. Watch videos, and more! Water is the universal dissolver – visit this site to learn all this and more. Download a free teachers’ guide, link to resources, and more!

11. K-12: Need plain or specialized graph paper for your students?

<http://www.incompetech.com/> and http://www.mathematicshelpcentral.com/graph_paper.htm

Between these two sites (you may want to bookmark them) you should be able to print off all the graph paper you might ever need. The first site is a graph paper generator – fill in the radio buttons to select the attributes for your PDF Document Size: paper size, border size, grid line weight, whether to bold the major axes or not, the grid spacing and color. There are 5 common graph paper configurations at the bottom of the page.

The second site has numerous Adobe Acrobat graph files ready for you to download – three, four, or eight per page, polar, x-y coordinates, logarithmic graph paper, and a graph paper generator software program that you may download for free if you would like.

12. Gr. PK-2: Stories, Science, and Sponges

<http://www.storyplace.org/preschool/other.asp>

Looking for just the right activity or book to go with a selected preschool theme? Visit the Story Place Pre-School Library for activities, online stories, and suggested reading lists...all organized by theme.

How about a sponge theme? Kids love Sponge Bob Square Pants and his adventures under the sea. Learn and explore with sponges using our Squishy, Squashy Sponges Early Childhood Unit Guide for teachers. The Terrific Science Books, Kits, & More at Miami University can even provide the sponges! See http://www.tsbkm.com/prod_line/14 for a resource that may help

13. Gr 6-8: Would YOU like a chance to go to Space Academy? Read on!

<http://www.honeywell.com> [and search for “2007 Space Academy”].

Honeywell is sponsoring fully-paid teacher scholarships to the 2007 Space Academy in Huntsville, Alabama. This opportunity will be awarded to 200 middle school science and mathematics teachers selected through an online application process.

The Honeywell Educators at Space Academy program provides 40 hours of intensive classroom, laboratory and training time, focusing on space science and space exploration. During the program, you’ll participate in astronaut-style training and simulations, along with activities designed to promote life-long learning in a classroom setting. All lessons and activities are correlated to National Science and Math Standards and are ready to use in the classroom.

An Ohio teacher who participated last year highly recommends this experience! The Honeywell scholarships cover the following costs:

What do you get for participating?

Tuition for the 5-day Space Academy program at U.S. Space Camp in Alabama

Roundtrip airfare

Meals and double occupancy accommodations

Workbooks and program materials for participating teachers

To apply for a Honeywell Hometown Solutions scholarship, please fill out the online application or download the application in PDF format and return it by Wednesday, January 3, 2007

