Science Bytes

February 2, 2009 Volume 23

This is an information exchange that is available to all teachers in the Anchorage School District. Please read and then DO it!

In this Issue:

For your Calendar:

NSTA Conferences 2008-2009

2009 National NSTA Conference

New Orleans, LA – March 19-22, 2009

Science Fair 2008 - 2009

Alaska Science and Engineering Fair

March 27-29, 2008 @ Begich Middle School - Anchorage
Looking for volunteers for the SF Board.

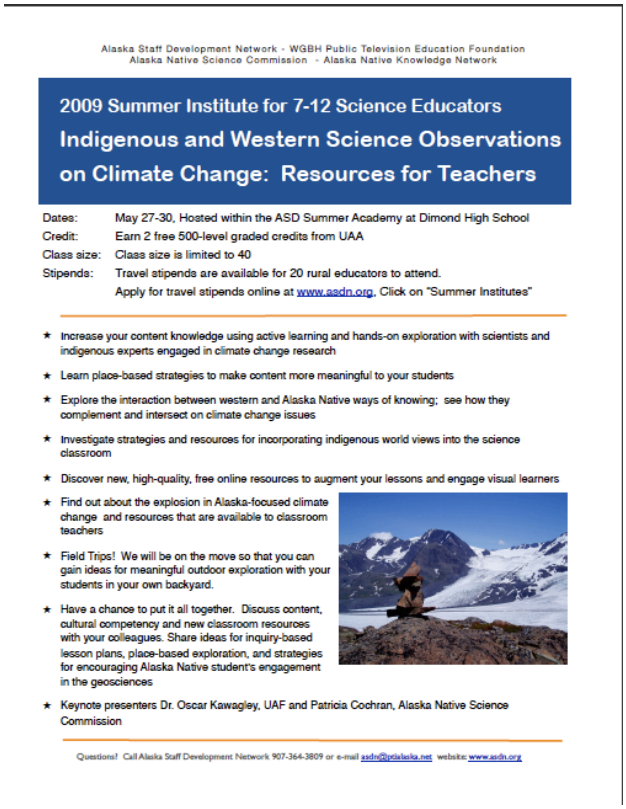
Science Olympiad 2008-09

April 4, 2009 @ Begich Middle School - Anchorage

2009 - Alaska Math & Science Conference

INQUIRY - The Bridge to Understanding

October 14-17, 2009 Juneau, AK



Alaska Staff Development Network - WGBH Public Television Education Foundation
Alaska Native Science Commission - Alaska Native Knowledge Network

2009 Summer Institute for 7-12 Science Educators
Indigenous and Western Science Observations on Climate Change: Resources for Teachers

Dates: May 27-30, Hosted within the ASD Summer Academy at Dimond High School
Credit: Earn 2 free 500-level graded credits from UAA
Class size: Class size is limited to 40
Stipends: Travel stipends are available for 20 rural educators to attend.
Apply for travel stipends online at www.aadn.org. Click on "Summer Institutes"

- Increase your content knowledge using active learning and hands-on exploration with scientists and indigenous experts engaged in climate change research
- Learn place-based strategies to make content more meaningful to your students
- Explore the interaction between western and Alaska Native ways of knowing; see how they complement and intersect on climate change issues
- Investigate strategies and resources for incorporating indigenous world views into the science classroom
- Discover new, high-quality, free online resources to augment your lessons and engage visual learners
- Find out about the explosion in Alaska-focused climate change and resources that are available to classroom teachers
- Field Trips! We will be on the move so that you can gain ideas for meaningful outdoor exploration with your students in your own backyard.
- Have a chance to put it all together. Discuss content, cultural competency and new classroom resources with your colleagues. Share ideas for inquiry-based lesson plans, place-based exploration, and strategies for encouraging Alaska Native student's engagement in the geosciences
- Keynote presenters Dr. Oscar Kawagley, UAF and Patricia Cochran, Alaska Native Science Commission

Questions? Call Alaska Staff Development Network 907-364-3809 or e-mail asdn@ptialaska.net website: www.asdn.org

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NASA - ISS Earth KAM

Middle school educators are invited to join NASA for the International Space Station EarthKAM Winter 2009 Mission on Feb. 3-6, 2009. Find out more about this exciting opportunity that allows students to take pictures of Earth from a digital camera on board the International Space Station.

ISS EarthKAM is a NASA-sponsored project that provides stunning, high-quality photographs of Earth taken from the space shuttle and International Space Station. Since 1996, ISS EarthKAM students have taken thousands of photographs of Earth by using the World Wide Web to direct a digital camera on select spaceflights and, currently, on the International Space Station.

For more information about the project and to register for the upcoming mission, visit the ISS EarthKAM Home Page: <http://www.earthkam.ucsd.edu/>www.EarthKAM.ucsd.edu.

If you have questions about the EarthKAM project, please e-mail <mailto:ek-help@earthkam.ucsd.edu>ek-help@earthkam.ucsd.edu.

Lunar and Planetary Science Conference (LPSC) Education/Public Outreach Forum

This year's pre-LPSC education forum will be held on Sunday, March 22, 2009, from 8:30 a.m. to 4:30 p.m. at the Woodlands conference venue.
http://www.lpi.usra.edu/meetings/lpsc2009/lpsc20092nd.shtml
<http://www.lpi.usra.edu/meetings/lpsc2009/lpsc20092nd.shtml>

Reaching Audiences through New Media: Lessons We Are Learning from the International Year of Astronomy will explore how immersive new media technologies such as collaborative web environments, social networks, virtual worlds, and inexpensive and accessible production tools are changing the way that people interact, work, learn, and teach. These technologies provide high-impact opportunities for reaching an audience of young adults that largely is not accessed by, or accessing, NASA. What have we learned about these tools of interaction and communication? Join us to explore new media pathways, and to reflect on what we are learning from employing new media during the International Year of Astronomy (IYA).

Participants will:

· learn about paths for involving audiences in IYA through new media
· discover challenges and benefits in using various new media technologies
· share their own experiences and explore new directions and collaborations; and
· actively use new media venues during the forum to share their LPSC experiences.

Participants should bring computers and/or handheld mobile devices to participate. The registration fee for the forum, which will include continental breakfast and lunch, will be $65.00.

Teacher Workshops at McDonald Observatory – Summer 2009

Are you a science teacher looking for a unique professional development experience? Consider McDonald Observatory's TPD summer workshops, held at a world-class research campus in the beautiful Davis Mountains of West Texas. All workshops include daily hands-on activities in a classroom setting, interaction with astronomy professionals and researchers, tours of research telescopes, night-time telescope observations (weather permitting), and lodging in the scenic Davis Mountains State Park. 20 hours or more of Continuing Education credit will be awarded to all participants. There are copious scholarships available for teachers to attend, especially at the high school level, apply soon!

More information and applications can be found at
http://mcdonaldobservatory.org/teachers/profdev/
<http://mcdonaldobservatory.org/teachers/profdev/>

New Education Materials at NASA Website

Rockets Educators Guide -- Grades K-12

Few classroom topics generate as much excitement as rockets. The scientific, technological, engineering and mathematical foundations of rocketry provide exciting classroom opportunities for authentic hands-on, minds-on experimentation. The activities and lesson plans contained in this educator guide emphasize hands-on science, prediction, data collection and interpretation, teamwork, and problem solving. The guide also contains background information about the history of rockets and basic rocket science. The rocket activities in this guide support national curriculum standards for science, mathematics and technology.

The Rockets Educator Guide is available as a complete guide or can be downloaded in easy-to-use individual lesson plans.
http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Rockets.html

Spacesuits Bookmark -- All Grades

Mark your place and learn about spacesuits. This downloadable bookmark has the Web address for the educational spacesuit site.
http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Spacesuits_Bookmark.html

Space Faring: The Radiation Challenge Unit -- Grades 6-12

Space radiation can be an obstacle to exploration. In this teaching unit, students learn about the types of radiation, the types of damage to DNA caused by radiation and how to prevent exposure. The lesson plans in these units of study are hands-on investigations that encourage the use of science, mathematics, engineering, technology, problem solving and inquiry skills. The activities provide a general framework that can be modified based on student needs and classroom resources.
http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Space_Faring_Radiation.html

Meteorology: An Educator's Resource for Inquiry-Based Learning -- Grades 5-9

Supplement your existing curricula with this guide. Many of the activities build upon each other. They use the inquiry from the previous activity to assist in the activity that follows. Thus, this publication enhances the

understanding of meteorology by beginning with basic and essential parameters of weather and then moving through mind-engaging interactions with complex meteorological systems. Students will build and use weather instruments; then they will build a weather station. Students will collect weather information and combine it with existing information about cloud systems. They can then apply their knowledge to predict weather systems.
http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Meteorology_Guide.html

Ceres and Pluto: Dwarf Planets as a New Way of Thinking about an Old Solar System Teacher Guide -- Grades 5-8

In 2006, the International Astronomical Union defined the terms "planet" and "dwarf planet." The IAU's decision created an opportunity for students to understand the solar system better by considering the definitions of planet, dwarf planet and asteroid. New discoveries in the solar system require a change in the language used to discuss it. This activity uses direct vocabulary instruction to help students learn these new definitions.
http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Ceres_and_Pluto_Dwarf_Planets.html

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Mystery Class 2009 is About to Begin!

Free Online Geography, Science, and Math Project

Teachers and students in grade 4 to 12 classrooms are invited to participate this winter/spring in Journey North's Mystery Class project in which students try to find ten secret classes "hiding" around the globe. The central clue is the changing amount of sunlight (photo period) at each site. Students first use only sunrise and sunset times, and later receive geographic, climatic, and cultural clues about each site. In the meantime, they also track day length in their hometowns. On this inspiring eleven-week journey, young geographers must use reasoning, graphing, and research skills to pinpoint exact locations of the mystery classes.

Students discover that as spring sweeps across the Northern Hemisphere, day length also changes everywhere on earth. They learn that this is related to the tilt of the earth's axis in relation to the sunlight striking the planet. This, in turn, drives all seasonal changes and affects the entire web of life. Students develop a deep grasp of these important concepts because they puzzle them out in real time as the project unfolds.

Mystery Class is an excellent project to combine with the GEMS unit The Real Reasons for Seasons. To learn more and register to participate, visit this area on the Journey North Web site:
http://www.learner.org/jnorth/tm/mclass/About.html
<http://www.learner.org/jnorth/tm/mclass/About.html>

URBAN BIRDS - Science Mini-Grant

Sun Earth Day (SED) 2009

Our Sun Earth Day Team is working to create yet another special event for Sun Earth Day, Our Sun, Yours to Discover. I hope you have had time to see the resources on the web page http://sunearthday.nasa.gov and are continuing to listen to the podcasts. The new Hinode vodcasts are also featured, one each month!

We are making plans for a webcast on March 20 at 1:00 EST. We will have a panel of scientists, students monitoring the Sun and some really cool and exciting images and visualizations. Several groups of students will be connected live for a chance to ask questions. I will be sharing the script and more details as March 20th gets closer. Be sure to let me know what your plans are for this year's Sun Earth Day.

In early February our new and improved Space Weather Action Center will make an appearance. We thank everyone who sent in suggestions for improvement, we listened to everyone!

The Sun-Earth Day Team

Calling All Inventors!

What inspires you to create cool contraptions and dream up ingenious inventions? If you know what inspires you, then we need your help!

Enter to win the Inspiring Invention Contest. Create a public service announcement that motivates others to get inspired and start inventing. Show us how invention enriches everyday life and your school could win a prize package from Sony Creative Software!
http://www.discoveryeducation.com/inspiringinvention/

Volcano Precautions and Response (UNCLASSIFIED)

For those interested on the latest and greatest on Redoubt.
http://www.avo.alaska.edu/activity/Redoubt.php

Math Consortium Offers Summer Institute

The Alaska Math Consortium's Basic Institute will be held June 8-26 in Fairbanks. There are one-week, two-week and three-week options.

The institute will focus on lessons that reinforce the state's math standards. Each lesson is linked to the performance standards and grade-level expectations. Techniques include manipulatives, technology, assessments, skill practice and problem solving.

For more information, contact Sandy Schoff at Schoff_sandy@asdk12.org
<mailto:Schoff_sandy@asdk12.org>

Girls on Ice 2009 Team

2009 Expedition will take place July 30 to August 9, 2009.
Applications Now Available: http://girlsonice.org/apply
Girls on Ice is a unique, FREE, wilderness science education program for high school girls. Each year a team of 9 teenage girls and 3 instructors spend 11 days exploring and learning about mountain glaciers and the alpine landscape through scientific field studies with professional glaciologists, mountaineers, and artists.
For more information, please visit: http://girlsonice.org.
