



SCIENCE BYTES

APRIL 20, 2009 VOLUME 33

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

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For your Calendar:

2009 - Alaska Math & Science Conference

INQUIRY - The Bridge to Understanding

October 14-17, 2009 Juneau, AK

NSTA Conferences 2009-2010

Would Young People Learn Science Better If It Were Packaged in a Video Game?

That's the question at the heart of the Selene project. Named after the Greek lunar goddess, Selene challenges players to learn the major geologic processes scientists believe formed the modern moon. Players create their own moon and then pepper it with impact craters and flood it with lava. The game offers a great opportunity

for students to learn about lunar geology while helping researchers study some key videogame design principles.

The game is designed for students between the ages of 13-18 and takes about an hour to complete. But more time can be spent checking out Selene's various resources about the moon. To play, participants must be enrolled by an adult recruiter to ensure parent or guardian consent for participation.

If you're an adult who'd like to help out, visit the Selene Web site and click on the Recruiter button. Recruiters help find players to play the game and take part in the study. Being a recruiter is simple and does not involve a lot of paperwork. The whole process involves getting oral consent from a parent or guardian, then forwarding Selene registration access to recruited players.

Selene: A Lunar Construction GaME was created through NASA by the Center for Educational Technologies® at Wheeling Jesuit University in Wheeling, W. Va., and its learning research continues through a National Science Foundation grant.

To learn more about the game and how you can play, visit selene.cet.edu. If you have questions about this project, please e-mail your inquiries to selene@cet.edu.

CCSC Fireside Chat - May 20: Homesteading Alaska Style

Alaska wasn't even part of the United States when Congress passed the Homestead Act of 1862. But between 1898 when homesteading began here and 1986 when it ended, people filed thousands of homestead claims in Alaska. Many of these claims fell under special Alaska-only amendments to the original Homestead Act. Come learn more about the often times surprising story of homesteading in Alaska from Robert King, archaeologist with the Bureau of Land Management. The program begins at 7:00 pm on Wednesday May 20 at the BLM Campbell Creek Science Center (5600 Science Center Drive). Please call 267-1247 for more information.

Earth-Moon Institute for Teachers July 27-31, 2009

Presented by the Lunar and Planetary Institute, Houston, TX

Who: 5th – 8th grade in-service teachers and pre-service teachers

What: A 35-hour institute, investigating the Moon

The Institute Will:

• Provide numerous hands-on standards-aligned classroom resources that allow you to bridge content from the Moon to the Earth and address science content TEKS:

2.7D, 4.6A, 5.6A, 5.12C, 6.5A, 6.5B, 6.13A, 7.13B, 8.12A, and multiple science process TEKS

- Provide tools to address student misconceptions
- Incorporate authentic inquiry experiences for your students
- Provide the opportunity to interact with lunar scientists
- Include a field trip to Johnson Space Center's lunar rock curation facility
- Offer certification to bring lunar samples into your classroom
- Include a lunar viewing evening with the local astronomical society and
- Provide professional development and TAGT

Awareness credit hours

Topics include:

Moon Phases and Eclipses

Earth-Moon Comparisons

Tides and Gravity

Formation of the Moon

Geology of the Moon

Volcanism

The Rock Cycle

Plate Tectonics

The Solar System

Institute registration is \$150, and includes lunches. Participants receive professional development hours, 15 Texas GT hours, and numerous classroom resources, and are eligible to receive college credit hours.

For further information, go to

<http://www.lpi.usra.edu/education/workshops/earthMoonInst/>

Or Contact:

Christine Shupla, Lunar and Planetary Institute
3600 Bay Area Boulevard, Houston, TX 77058
281-486-2135, shupla@lpi.usra.edu

NASA's Website - Educational Materials

The Educational Materials section of NASA's Web site offers classroom activities, educator guides, posters and other types of resources that are available for use in the classroom. Materials are listed by type, grade level and subject. The following items are now available for downloading.

NASA's Hispanic Astronauts Fact Sheet

NASA selects astronauts from a diverse pool of applicants with a wide variety of backgrounds. From the thousands of applications received, only a few are chosen for the intensive Astronaut Candidate training program. Only 321 astronauts have been selected to date. This fact

sheet lists those astronauts of Latin-American and/or Spanish descent. This fact sheet is available in English and Spanish.

http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Hispanic_Astronauts.html

Challenges of Spacewalking Video Clips

Hear firsthand how astronauts have encountered their own challenges during EVAs (spacewalks). This six-part video series allows you, the viewer, to choose the correct "fix" for real problems astronauts faced while spacewalking. See if you have the right stuff to think quickly when things do not go as planned.

http://www.nasa.gov/audience/foreducators/spacesuits/home/challenges_spacewalking_index.html

Bending Under Pressure Activity Demonstration Video

While making spacewalks possible, pressure produces its own problems. An inflated spacesuit can be very difficult to bend. In essence, a spacesuit is a balloon with an astronaut inside. The rubber of the balloon keeps in oxygen that is delivered to the suit from pressurized oxygen tanks in the backpack. But, as pressure inside the balloon builds up, the balloon's walls become stiff, making normal bending motions impossible. Lack of flexibility defeats the purpose of the spacewalk -- mobility and the ability to do work in space. In this activity, students use balloons and rubber bands to demonstrate the pressure inside a spacesuit.

In addition to the lesson plan, a video of the lesson demonstration is now available online.

http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Bending_Under_Pressure.html

Alaska Agriculture in the Classroom

Alaska AITC Educator Institutes

Fairbanks - June; Palmer - August

Professional development credits are available at both of Alaska AITC's K-12 Educator Institutes this summer. Each course features a parade of special speakers, hands-on activities, Alaska Grown lunches, take-home materials and plenty of fun ideas of how to bring agricultural literacy to your students. This year the course will feature break-out sessions for upper and lower grades. It's a fast-paced, fun way to learn a lot about agriculture to pass on to your students. Course fee is \$100 and includes lunches, snacks, materials, tours. Cost for credits is additional — \$69 for one or \$89 for two through UA. Please note that to receive credit, there are additional requirements beyond attending the course. Enrollment is limited

to 25 in each. Enroll early for bonus materials. For details and syllabi, visit www.agclassroom.org/ak

The Fairbanks course will be Tuesday-Thursday, June 2-4 at UAF and offers 1-2 pro dev credits in Natural Resources Management (NRM F595) through UAF. The course will feature a tour to Delta Junction farms and an Alaska Grown cookout hosted by the Farm Bureau. There will also be special speakers and tours of ag projects on campus. Assisting with the course is Marilyn Krause, Fairbanks middle school teacher, farmer and youth leader. Early registration deadline is May 1; cutoff is May 25.

The Palmer course will be Tuesday-Thursday, Aug. 4-6 at the UAF Experiment Farm near Palmer and offers pro dev credits in Education (ED 580) through UAA. The course will feature tours to several Valley farms and ag facilities, as well as tours at the host site. Assisting will be Anchorage elementary teacher Patrick Ryan, Alaska AITC's consulting teacher, and Dr. Polly Rowell, Mat-Su elementary teacher. Early registration is July 1; cutoff is July 30.

Alaska Agriculture Day is Tuesday, May 5

We are celebrating Alaska's agriculture — past, present and future — on the first Tuesday of May as we do every year (please get this in on your 2010 school calendar now to avoid conflicts next spring). Once again Alaska AITC is promoting ag literacy by matching guest readers and presenters with classrooms. If you haven't contacted Alaska AITC about a reader on or around May 5, please do so asap. There are limited numbers of readers available. For those of you in the Fairbanks North Star School District, please cc Tami Seekins, your local coordinator at Fairbanks Soil & Water Conservation District, at education@gci.net

There are lots of ways your class and school can celebrate Alaska Ag Day. Look for ideas on the Alaska AITC website by following the Alaska Ag Day links. From fun activities to a special lunch menu, you will get ideas of ways to make agriculture important to your students. And if you have a great idea to share, send it and I will post it online.

There are still our first-edition Alaska Ag Day posters available, if you need some at your school.

Our thanks and congratulations to those schools who are planning special events again this year. Mountain View Elementary in Kenai is in its fourth year of all-school activities for Alaska Ag Day.

Alaska AITC has a DVD library

Thanks to a grant from the American Farm Bureau Foundation for Agriculture, Alaska AITC has 35 different

agriculture-related DVDs available for you to borrow that will give you and your students new insights on agriculture. There are DVDs suitable for all grade levels. Loan period is two weeks. For a list of the DVDs and the borrowing instructions, visit the Alaska AITC website at www.agclassroom.org/ak and find the information on the Teachers page. You can also download the descriptions there. Please note that there will not be any DVDs requests honored after May 8 this school year, and the library will be available again at the end of summer. Also note there are limited copies of each title. To reduce shipping costs, please consolidate school orders.

Stay tuned for new ag trivia cards available from Alaska AITC.

Spring may be finally here. I hope agricultural literacy is growing in your classroom.

If you have any questions or I can help in any way, please let me know.

Victoria Naegele

Alaska Agriculture in the Classroom

907-746-2172

cell 982-2219

fax 746-2173

www.agclassroom.org/ak

from ANROE Electronic Newsletter

Workshops & Training Opportunities

Anchorage: May 5, 7, 11 & 13- Watershed Stewardship Class- will be held from 5 to 9pm at the Anchorage Cooperative Extension Office. This is designed to give the public a general understanding and knowledge of hydrology, stream

habitats, water monitoring, watershed, and stewardship.

The first 3 days

will be in class the last day will be a field trip. Cost: \$10.

Call Fred

Sorensen 786-6311 to register. For more information, go to

<http://www.uaf.edu/ces/water/>.

<<http://www.uaf.edu/ces/water/>>

Denali National Park Field Courses

June 8 – 10- High Country Wildflowers for beginners

June 12 – 14 High Country Wildflowers A closer look

June 15 – 17- Drawing Inspiration from Denali

June 22 – 25 – Ecology of Birds

The Field Camps include rustic tent cabins and a common dining tent. All meals, accommodations, transportation, and instruction are included in the

course fee. Professional development credit is available through UAA.

For more information or to register, go to www.murieslc.org, email courses@murieslc.org, or call 1-888-688-1269.

Resources for Educators

Every Drop Counts

A series of water-related lessons beginning with a water trivia game and a short demonstration of how much of Earth's water is available for human and other species' needs. The series includes a "water walk" and a personal water-use audit. It is designed for use in middle and high school classrooms and is available as a free download. Check out the other free materials on the website.

<http://www.facingthefuture.org/Curriculum/DownloadFreeCurriculum/tabid/114/Default.aspx>
<<http://www.facingthefuture.org/Curriculum/DownloadFreeCurriculum/tabid/114/Default.aspx>>

Alaska Native Perspectives on Earth and Climate

Teachers' Domain has launched a new collection of media resources that looks at earth sciences from the perspective of the people of Alaska. In this collection, students learn both Native ways of knowing nature, and ongoing scientific research about Alaska's unique geology, and how climate change and development are affecting the region.

<http://www.teachersdomain.org/special/ean/>
<<http://www.teachersdomain.org/special/ean/>>

Be Water Wise in School

Written as a complete guide ready for implementation in the classroom, it contains background information for teachers, lesson plan instructions, pre- and post-tests, vocabulary lists, website links for further student research and service-learning project ideas. Be Water Wise in School is completely hands on and has been correlated to National Science Education Standards.

<http://www.groundwater.org/shop/proddetail.asp?prod=1114d>
<<http://www.groundwater.org/shop/proddetail.asp?prod=1114d>>

Opportunities for Educators

PolarTREC expeditions to the Arctic and Antarctica are underway and you can use the Internet to follow teachers while they participate in polar research, working closely with scientists as a pathway to improving science education. PolarTREC is an educational research experience, funded by the U.S. National Science Foundation and managed by the Arctic Research Consortium of the U.S.

You can learn more about the research and have students follow their expeditions through journals, photos, videos, "ask the team" forums, and more from the website. <http://www.polartrec.com/> <<http://www.polartrec.com/>>

May 1 & May 15: EstuaryLive Electronic Field Trip!

An annual, free, live, interactive field trip through our nation's estuaries. This year's program will feature six 30-minute segments broadcasting live from the Hudson River in New York, South Slough in Oregon, and Padilla Bay in Washington. This year's program will include a discussion of the impacts of global climate change on our coastal ecosystems. The Weeks Bay Reserve in Alabama will broadcast a local EstuaryLive! program on May 15, 2009. Be sure to register for the events. For those who can't watch the live broadcasts, check out the archives for past programs.

<http://www.estuaries.gov/GetInvolved/Default.aspx?id=373>
<<http://www.estuaries.gov/GetInvolved/Default.aspx?id=373>>

Funding Opportunities

Application deadline April 30: GreenWorks! Grants

GreenWorks! grants engage Project Learning Tree educators and their students with their local community in "learning-by-doing" environmental projects. Student leadership, service-learning, and community participation are the cornerstones to GreenWorks! projects. GreenWorks! grants are awarded in the spring and fall of each year. http://www.plt.org/cms/pages/21_22_21.html
<http://www.plt.org/cms/pages/21_22_21.html>

Application deadline: June 30- Captain Planet Foundation Grants

The Captain Planet Foundation provides grants to school and community groups to support hands-on environmental projects for youth in grades K-12. The objective of the foundation is to encourage innovative programs that empower youth around the world to work individually and collectively to solve environmental problems in their neighborhoods and communities. Deadlines for submitting grant applications are September 30, and December 31 of each year.

<http://www.captainplanetfdn.org/grants.html>
<<http://www.captainplanetfdn.org/grants.html>>

Programs

Homer: May 7-10- Kachemak Bay Shorebird Festival-

The 17th Annual Kachemak Bay Shorebird Festival will celebrate spring and the more than 130 species of birds,

including over 20 shorebirds, that migrate to Kachemak Bay. This year also honors the 50th Anniversary of Alaska's Statehood, as well as the Centennial Anniversary of National Wildlife Refuges in Alaska. Keynote speakers: Jack Dalton, a Yup'ik Storyteller and artist and Paul Baicich, chair of the Council on Environmental Education's Bird Education Network. There will be food, music and presentations honoring a variety of cultures along with field events, workshops, presentations and boat and kayak tours being offered.

Volunteer Opportunities

Anchorage: May 9- Anchorage Waterways Council Creek Clean-up-

With over 17 volunteer stations throughout the Municipality, there's a location in every neighborhood. The cleanup ends at noon with a festive, free and fun BBQ celebration at Valley of the Moon park with great prizes, trash awards, music and games for kids. Email creekcleanup@anchoragecreeks.org. to sign up or for more information.

Volunteer Naturalists for the Eagle River Nature Center- Assist with Naturalist hikes and presentations in June, July, and August. INCPA candidates can earn credits towards their certification. For more information, please contact Doris Ivory at 694-2108 or admin@ernc.org.

Wildflowers of Southcentral Alaska Class

Have you noticed the geese and the gulls are back? And the tiny green shoots coming from the soil? That means it is Spring in Alaska! Which means the wildflowers can't be far behind!

If you are interested in learning more about the Wildflowers of South Central Alaska, join Doug Tryck for a class that will focus on the spring blooming plants found in this area! Sign up soon as this fabulous 1 credit class fills quickly!

Go to MyLearningPlan.com and register for: Sci: UAA ED 580.413, Spring Wildflowers of South Central Alaska, 1 Credit, Summer 2009 (5/4-5/26/2009)

This is a class exploring the spring blooming plants of South Central Alaska. Each meeting time includes in-class instruction and instruction in the field. This class is for beginners to experts. Just plan on dressing for the weather and for having fun. UAA registration will be online.

For more information or questions, please contact tryck_doug@asdk12.org

Three Fantastic ASDSA Science Opportunities

1. Advanced FOSS Science Institute -Session B

Join ASD Science and National FOSS Science Specialists during the B session of ASDSA for an Advanced FOSS Science Institute!

The focus will be on using effective writing and formative assessment strategies with your science kits.

Participants will take part in science inquiry investigations and write in science notebooks, using formative assessment to improve teaching and learning. New assessment tools and strategies developed in the ASK project (Assessing Science Knowledge) will be featured and all participants will receive sample assessment materials (valued at approximately \$100 per participant).

Sign up now!!!

MLP Title: ASDSA-09-B: UAA: ED 580.406, Advanced FOSS Science Institute-including FOSS/ASK (Assessing Student Knowledge) Project: Using Effective Writing and Formative Assessment Strategies, 1 Credit

Please contact the science department if you have any questions.

Engaging Science Education is Essential!

2. Teaching Science with Art – May 27-28 Session A

3. Arrivals and Departures: Effective Engagement and Closure for Science Activities - May 29-30 Session B

What the world needs now is love, sweet love, and a scientifically literate population!

Please join me at the ASD Summer Academy to explore ways in which to engage all kinds of learners in developing scientific habits of mind!

Teaching Science with Art – May 27-28

Arrivals and Departures: Effective Engagement and Closure for Science Activities - May 29-30

Susan Barstow, Elementary and Secondary Science Methods Instructor, UAA

For more information or to register for ASDSA, visit http://www.asdk12.org/depts/staff_dev/asdsa.asp

For more information about the content of the classes, contact Susan Barstow at

(907) 786-4429 or susan@uaa.alaska.edu

[<mailto:susan@uaa.alaska.edu>](mailto:susan@uaa.alaska.edu)

from Earth Science Week Update 4-09

Go Online for Targeted Professional Development

Looking for professional development made easy? Look no further than GeoScience Connections, a new set of online graduate courses offered by AGI and the Illinois Institute of Technology (IIT).

GeoScience Connections is designed specifically to increase science teachers' knowledge of Earth system science and inquiry-based science instruction. Focusing on interactions among Earth systems - geosphere, biosphere, atmosphere, hydrosphere, cryosphere, and exosphere - courses incorporate hands-on and technology-based teaching techniques.

New courses being offered during Summer 2009 include "Dynamic Earth: Understanding the Processes Affecting Earth's Crust" (June 29-Aug. 14) and "Introduction to Fossils" (July 15-Sept. 2). "Energy Resources" is planned for the Fall 2009 schedule. Each course provides 3 graduate credits from IIT. To learn more, visit <http://www.k5geosource.org/online/index.html>

As Scientists, Students Cast Long Shadows

Help your students become "citizen scientists" by taking part in an international research project. The Sun Shadows Project is looking for help in studying the relationship between the seasons and the length of shadows.

Beginning with a science experiment at James Monroe Middle School in Albuquerque, N.M., in October 2007, students hypothesized that their shadows would be longer in winter than in summer. The study has grown since then, using data from both of Earth's poles and many locations in between. Last year, the project students presented initial results at the American Geophysical Union's Annual Conference.

The Sun Shadows Project students are looking for fellow scientists, to measure shadows and submit findings online at http://web.me.com/lhuffman/Project_Circle/Sun_Shadows_Project.html. Because the Sun Shadows Project offers a great way to begin "understanding climate" - this year's Earth Science Week (Oct. 11-17) theme - the project also is featured as AGI's Earth Science Week Research Project. Learn more at <http://www.earthsciweek.org/researchproject/index.html>.

View 'Why Earth Science' Online With Your Students

AGI's "Why Earth Science" video is now available for free viewing online on YouTube. For an exciting introduction to the geosciences, you can't do better than this six-minute clip, featuring eye-popping cinematography and computer-animation highlights from AGI's "Faces of Earth" mini-series, which aired recently on The Science Channel.

The video, an alternate version of which recently won a bronze Telly Award, is ideal for illustrating the importance of Earth science to not only students, but also education decisionmakers who may be weighing the sub-

ject's place in the local curriculum. To view the clip, go to <http://www.youtube.com/watch?v=jxbIJH4fTYo>.

WEBSITE: View the assembly diagram of the ISS, piece by piece.

http://i.usatoday.net/tech/graphics/iss_timeline/flash.htm
<http://i.usatoday.net/tech/graphics/iss_timeline/flash.htm
>
<<http://www.incredimail.com/index.asp?id=109094&:rui=101966063>>

Online Poll for NASA's Greatest Hits for Earth Begins Today

WASHINGTON -- NASA is inviting the public to vote online for the most important contribution the space agency has made to exploring Earth and improving the way we live on our home planet. NASA is conducting the survey as part of its celebration of Earth Day, April 22. Voting begins today, and closes on April 21. Poll results will be announced on NASA's Web site on Earth Day.

A 2008 National Research Council study identified major accomplishments resulting from Earth observations made from space. The report, "Earth Observations from Space: The First 50 Years of Scientific Achievements," cataloged scientific discoveries and practical applications, including many that resulted from NASA missions, made possible from satellite observations.

NASA selected 10 candidates highlighted in the study for consideration as the greatest achievements about planet Earth. The options include diagnosing Earth's ozone layer, predicting food shortages and tracking ecosystems worldwide. Visitors to the online polling site will be able to cast their votes for up to three candidate accomplishments.

Since the launch of the United States' first satellite in January 1958, NASA has pioneered the exploration of our home planet from space. With more than a dozen observation satellites circling the globe, NASA continues to advance the frontiers of scientific discovery about Earth, its climate and its future. NASA's multidisciplinary Earth science program contains a broad-based portfolio of cutting-edge science and technology, from new remote-sensing instruments in orbit to basic research.

To cast your votes, visit:

http://www.nasa.gov/topics/earth/earthday/greatest_hits.html

Composer to Discuss Sound and Light Installation at UAF

The University of Alaska Museum of the North will present a free public lecture and book signing with Fairbanks composer John Luther Adams on Thursday, April 30 at 7 p.m. at the museum.

Adams will talk about the development of his sound and light installation at the museum and read from his recently published book "The Place Where You Go to Listen: In Search of an Ecology of Music." The museum installation, which opened in 2006, is driven by the real-time positions of the sun and moon, earthquakes and aurora activity in Alaska.

Location to Download Materials from NASA

Here's where you can find downloads and information about materials available from NASA. APU has the Educator Resource Center for AK which houses many of videos and DVDs that are available for copying. Unfortunately, our web site is not up, so you cannot see the other materials available. We do have a thematic kit titled "Kids' Aerospace Kit" that is for rent at \$10 for 4-6 weeks, if you are interested in it. Here's the NASA URL: <http://www.nasa.gov/audience/foreducators/index.html>

Math Science Conference Presenter Opportunity

2009 Alaska Statewide Math/Science Conference
P.O. Box 22201
Juneau, AK 99802

Dear Educator,

We are writing to let you know about a wonderful educational opportunity! The Alaska Statewide Math/Science Conference for 2009 will be held in Juneau October 14-17, 2009. We are inviting you to make a presentation at this conference to share your knowledge and expertise with a wide variety of conference participants. There will be educators from around the state attending as well as all the teachers and administrators in the Juneau School District. They will want to learn more about teaching math and science and integrating these subjects into other content areas. The information and experience you have would be very valuable to them.

Attached you will find criteria for submitting an application to present as well as the application itself and a presenter information form. Please complete the necessary information and send it to Pam Garcia by April 30, 2009. You can send the completed documents via email, fax or snail mail. After we receive them, we will acknowledge their receipt right away, and then notify you about the date and time of your presentation by July 30, 2009.

The theme of the conference is Inquiry – Bridge to Understanding. The sessions offered will be 45, 75, or 90 minutes long. There will also be extended sessions that are 3 hours in length, or half day field trips on Saturday morning. We encourage presenters to incorporate inquiry and hands-on learning in their sessions.

In addition to presenting at the conference we hope you will attend other sessions as well. Registration forms will be available shortly after the first of the year. You may get one online at <http://akctm.org/events.html> or <http://www.aksta.org>

Thank you for considering this opportunity. We look forward to receiving your application!

Sincerely,

Bev Smith and Linda Frame
Alaska Math/Science Conference 2009
Co-Chairs
