



SCIENCE BYTES

OCTOBER 12, 2009 VOLUME 10

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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2009- Alaska Math Science Conferences

INQUIRY - The Bridge to Understanding

October 14-17, 2009 Juneau, AK

NSTA Conferences 2009-2010

March 17-20, 2010 Philadelphia, PA

Science Olympiad

March 20, 2009 Teeland & Mat-Su Career and Tech HS

Alaska State Science & Engineering Fair

March 26-28, 2010 Begich Middle School

NASA's Digital Learning Network - Apollo 11

During the week of November 16th-20th, students in grades K-8th are invited to re-discover the remarkable accomplishment of the Apollo 11 Moon landing. Forty years have passed since this momentous event and to celebrate, NASA's Digital Learning Network (DLN) will deliver a daily videoconference that will explore a single NASA center's contribution to Apollo 11. These programs will also feature an in-studio NASA employee who had a special connection with Apollo 11. Student participation and interaction with the DLN host and NASA expert is assured!

Would you like to challenge your students to exercise their bodies and minds? The DLN has designed a fun activity that incorporates fitness and math! Walk to the Moon encourages students to count their steps around their homes and schools in order to reach a goal of 250,000 steps. Each step will be equal to one mile. With approximately 250,000 miles between the Earth and the Moon, your students will "walk" to the moon! Students may chart their progress individually or in groups – the choice is yours. Either way, the DLN would like to hear about your class' journey! Please email your results to jsc-dislearn@mail.nasa.gov, and you may hear your students' stories LIVE during the DLN's week-long special event in November!

Please note there will be a global flair to this week-long event as students from various nations around the world will be selected to join and participate!

Descriptions of each event are as follows:

Note: All programs are scheduled to begin at 12:00 CST and end at 1:00 CST

Langley Research Center- Nov. 16

Learn how a young engineer convinced his boss that landing on the Moon would only be possible if something called Lunar Orbit Rendezvous was used as the passage-way to the Moon.

Marshall Spaceflight Center - Nov. 17

Learn how a rocket taller than the Statue of Liberty was constructed for peaceful space exploration and why its presence tipped the scale of the space race in the America's favor.

Kennedy Space Center- Nov. 18

Discover America's spaceport, the site where the Apollo 11 astronauts made their final preparations before counting down to the launch of the fastest vehicle human beings have ever ridden in- the Saturn V rocket.

Johnson Space Center- Nov. 19

Learn more about the home of the astronaut corps and take a peek inside the Mission Control Center, where a room called the "FCR 2" was the setting for communicat-

ing with Neil, Buzz, and Michael as they zoomed towards the Moon.

Ames Research Center- Nov. 20

Traveling to the Moon once again is expected to take place in the next decade. Learn how this will take place through a new NASA program called Constellation. Registration

To participate in this program, your school must have videoconferencing capabilities. For more information on technical requirements go to:

<http://dln.nasa.gov/dln/content/techinfo/>

If you would like to be placed on the "we're interested" list for this free program, please reply to jsc-dislearn@mail.nasa.gov<<mailto:jsc-dislearn@mail.nasa.gov>>. Please respond no later than close of business, October 14. We will contact you soon as a possible participant. We hope you will be able to join us!

When replying, the subject line must be: Apollo 11 40th Anniversary

Please reply with the following information:

- * Your name:
- * Your work email:
- * Your work telephone number:
- * Your school's name:
- * Your school's city:
- * Your school's state:
- * Your school's technical point of contact:
- * Technical POC's work telephone:
- * Technical POC's work email:
- * Student grade levels:
- * Anticipated number of participating students:
- * Date/time of preferred participation:

Thank you,

NASA Digital Learning Network

jsc-dislearn@mail.nasa.gov<<mailto:jsc-dislearn@mail.nasa.gov>>

NOAA Teacher at Sea Program

Have you ever thought about shipping out to sea? This National Oceanic and Atmospheric Association program is accepting applications from K-12 teachers for the 2010 field season. The program provides a unique environment for learning and teaching by sending kindergarten through college teachers to sea aboard NOAA research and survey ships to work under the tutelage of scientists and crew. Then, armed with new understanding and experience, teachers bring this knowledge back to their classrooms.

Most participants try to sail on cruises offered during the summer, but cruises take place throughout most of the year on a space-available basis. Registration begins on October 1.

<http://teacheratsea.noaa.gov/>

from Info Exchange for Marine Educators

Making Waves

Making Waves is a multimedia outreach project designed to help bring science and math to life in your middle school classroom by unlocking the mysteries of

the oceans. Partners for the website include the College of Marine Science at the University of South Florida, USGS, and InterActive Teacher Magazine. Resource topics include Sea Level Rise, Red Tides, Oceans from Space, Real Time Data, and much more. Check out the background information, activities, and links on this website.

<http://waves.marine.usf.edu/mwhome.htm>

Ten Top Tips for Teaching with New Media

Edutopia offers *Ten Top Tips for Teaching with New Media*. It offers succinct and practical advice, covering everything from iChat and Twitter to lesser-known tools like VoiceThread and Wordle. The downloadable document is available for free.

<http://www.edutopia.org/ten-top-tips>

Stipend Opportunity for Middle School Teachers, Teacher Educators, and Science Specialists

The Maine Mathematics and Science Alliance is looking for 25-30 teachers and teacher educators (pre-service faculty, curriculum developers, professional development consultants, science specialists, etc.) to complete an evaluation questionnaire for feedback on the NSF-funded PRISMS web site at:

<http://prisms.mmsa.org/>. PRISMS stands for Phenomena and Representations for the Instruction of Science in Middle School and is part of the National Science Digital Library. In return for your feedback, the MMSA will provide a stipend and nifty PRISMS lanyard with a built in flash drive.

Group A - Grades classroom 6-8 teachers who have never used the PRISMS web site who will spend some time examining the site and complete a questionnaire that takes approximately 1 hour to complete. Stipend- \$200 for full completion of the questionnaire. In addition, 3-4 teachers may be selected for a follow up phone interview at their convenience which will take approximately 45 minutes for an additional \$100.

Group B - Grades 6-8 classroom teachers who have not used the PRISMS web site before who will spend some time examining the site and commit to using at least 2 or three of the resources on the web site this fall. Teachers will complete the same questionnaire as Group A and in addition, will describe how they incorporated a PRISMS resource into their instruction or instructional planning. Stipend- \$300 plus an additional \$100 for an optional 45 minute follow up phone interview.

Group C - Grades 6-8 classroom teachers who have used the PRISMS web site and will provide feedback on a written questionnaire (about 1.5 hours) and share at least one example of how they used a PRISMS resource in their instruction. Stipend- \$300. In addition, some participants will be asked to participate in an optional 45 minute phone interview (Additional \$100).

Group D- Non-classroom teachers who work with middle school teachers in preservice education, designing curriculum materials, professional development, etc. We are looking for science educators willing to provide feedback on PRISMS that will help us understand how others use PRISMS to support science teachers or the development of curriculum materials. We will ask you to complete a 1 hour questionnaire - stipend \$200, plus an optional 45 minute phone interview for selected participants (additional \$100 stipend).

If you are available, willing and interested in giving a couple hours of your valuable time to this evaluation, please contact Laurie Mitchell at lmitchell@mmsa.org <<mailto:lmitchell@mmsa.org>> and let her know what group you would like to be in. If you know of any middle school teachers or educators who work with middle school teachers who might like to participate, please pass this information on to them. There are limited slots in each group so please contact Laurie soon if you decide you would like to participate. Once we have filled each of the groups, Laurie will contact you with further information and directions for completing the evaluation.

The evaluation will take place between October 15th and November 28th. Thanks for your help! I'm sure you will find the PRISMS web site to be very helpful in selecting web-based resources. Conversely, you will be helping MMSA collect valuable data on how this instructional resource is used by educators which will inform future NSDL projects.

Joyce Tugel, Science Specialist
Maine Mathematics & Science Alliance, Southern NH Office
6 Birch Lane
Barrington NH 03825
(207)899-8661
jtugel@mmsa.org <<mailto:jtugel@mmsa.org>>
<http://www.mmsa.org>

6-8 Engineering Framework Website

It seems to fit right in with our structures unit.
<http://www.prek-12engineering.org/frameworks/6-8.php>

This site was located and recommended by Kirsten Roos - Mirror Lake Middle School - 6th grade teacher.

Apply Now For The 2010–2011 Albert Einstein Distinguished Educator Fellowship Program

The Triangle Coalition, an NSTA partner, is seeking nominees for the 2009–2010 Einstein Fellow program.

As an Einstein Fellow you will spend a school year in Washington, DC sharing your expertise with policy makers. You may serve your Fellowship with Congress or one of several government agencies, such as the Depart-

ment of Energy, NASA, the National Science Foundation, the National Institutes of Health, the National Oceanic and Atmospheric Administration, or the National Institute of Standards and Technology.

The Einstein Fellowship program provides an opportunity for teachers to inform national policy and improve communication between the K–12 STEM education community and national leaders. Selection is based on excellence in K–12 mathematics, science, or technology teaching; demonstrated leadership; an understanding of national, state, and local education policy; and communication and interpersonal skills.

The Fellowship program was created in 1990 with support from the MacArthur Foundation. Congress formalized the program in 1994 by passing the Albert Einstein Distinguished Educator Fellowship Act. The Triangle Coalition administers the program under the direction of the Department of Energy. The application deadline is January 13, 2010.

For more information about the Einstein Fellows program, visit www.einsteinfellows.net or contact Program Manager Kathryn Culbertson at culbertsonk@triangle-coalition.org

SMILE PROGRAM CHEMISTRY INDEX

- Chemistry Lessons

<http://www.iit.edu/~smile/cheminde.html>

NASA INVITES STUDENTS TO DROP EVERYTHING

NASA is inviting student teams to experience microgravity science by designing and building experiments to be conducted in a NASA drop tower. Dropping in a Microgravity Environment (DIME), is a competition for high school students. Students in grades 6-9 can compete in "What If No Gravity? (WING). Both competitions are open to teams from any state, the District of Columbia, and Puerto Rico. Teams may be formed from a science class or club, group of classes, scout troop, or similar organization. Each team must have an adult advisor, such as a teacher, parent, or technical consultant. To enter the competitions, teams must develop a concept for a microgravity experiment, and prepare and submit a proposal to NASA's Glenn Research Center by November 2. A panel of engineers and scientists at Glenn will evaluate and select the top-ranked proposals for both DIME and WING by December 10. For information about entering NASA's DIME and WING student competitions, click [here](#)

<<http://spaceflight systems.grc.nasa.gov/DIME.html>> .

The top four DIME teams will be invited to Cleveland in April 2010 to conduct their experiments in Glenn's 2.2-Second Drop Tower and review the results with NASA personnel. They also will tour Glenn facilities and participate in other activities. All DIME participants visiting NASA must be U.S. citizens. Several additional DIME teams and up to 50 WING teams will be invited to

ship their experiments to Glenn to be drop-tested by NASA staff. These experiments and the resulting data will be returned to the teams so they can prepare reports about their findings. These and similar education programs help NASA attract and retain students in science, technology, engineering, and mathematics -- disciplines critical to the agency's future missions. For more information about other educational programs of Triangle Coalition member, NASA, visit www.nasa.gov/education <<http://www.nasa.gov/education>> .

HARRY POTTER: THE EXHIBITION SPARKS SCIENCE INTEREST

"Harry Potter: The Exhibition <http://www.mos.org/exhibits/shows/coming_soon&mid=3834> " offers fans a firsthand look inside the wizard's magical world and the opportunity to experience the amazing craftsmanship of more than 200 authentic costumes and props from all six of the Harry Potter films. As guests journey through the 10,000-square-foot exhibit space, they are transported to the world of Harry Potter through several themed vignettes based on the film sets, including the Gryffindor common room, Hagrid's hut, the Forbidden Forest, a Dark Forces area, and the Great Hall. The exhibit is currently traveling the country with the next stop at the Museum of Science, Boston, beginning October 25. "Harry Potter has captivated the imagination of children and adults around the globe. Through the art and technological wizardry of movie-making, the Harry Potter films have brought to life an enchanting and complex world," said Ioannis Miaoulis, President and Director of the Museum of Science, Boston. He added, "We're confident that this exhibition will attract visitors of all ages -- some of whom may never have visited a science center. This exhibit will spark their curiosity and imagination, leading them to experience the excitement of discovery."

With the National Center for Technological Literacy (NCTL), the Museum of Science, Boston is reaching out and improving technology and engineering education nationwide to help the United States realize its potential. The goal of Triangle Coalition member, NCTL, is to integrate engineering as a new discipline in schools nationwide and to inspire the next generation of engineers and innovators. NCTL fosters learning about how technologies are created and used. It offers educational products and programs for pre-K-12 students and teachers, creates curricula, supports an online resource center, and engages in partnership and outreach with other institutions. NCTL works with state departments of education and teacher organizations to facilitate the re-engineering of curricula and learning standards. Find out more at www.mos.org/nctl <<http://www.mos.org/nctl>> .

Fireside Chats Beginning - CCSC

October 21: All About Flu

H1N1. Swine flu. Bird flu. Flu shots. It's impossible to avoid hearing about flu. But what do you really know about this disease? How many different strains are there? Who tracks the spread of flu and how do they do it? What constitutes a pandemic? How is flu spreading in Alaska and what threat does the disease pose for the state? How can you protect yourself from flu? State Epidemiologist Dr. Joe McLaughlin will answer these and many other questions about influenza. The program begins at 7:00 pm on Wednesday October 21st at the BLM Anchorage Field Office (4700 BLM Road), which is located just off Elmore Road near the intersection with East 68th. If you need more information, please call 267-1247.

2010 Spirit of Innovation Awards

Deadline: December 15, 2009

This Conrad Foundation awards program is an annual competition that challenges teams of high school students to create innovative products for use in one of four categories: aerospace exploration, space nutrition, renewable energy, and green schools. Teams and their coaches will compete for more than \$100,000 in cash prizes; be designated as Pete Conrad Scholars; have the opportunity to commercialize their products for general market use; and receive annual memberships to the Conrad Foundation, Sigma Xi, the American Institute of Aeronautics and Astronautics (AIAA), and the National Science Teachers Association. The Foundations official education advisor. <http://www.conradawards.com>

President's Environmental Youth Awards (PEYA)

Deadline: December 31, 2009

This EPA-sponsored program recognizes young people across America for projects demonstrating their commitment to the environment. Visit the Web site for project examples, submission guidelines, eligibility requirements, and application. <http://www.epa.gov/enviroed/peya/index.html>

Sea World & Busch Gardens Conservation Fund

Deadline: December 1, 2009

Grants of up to \$25,000 will be awarded to US and international nonprofits, government agencies, zoos, aquariums, and higher education institutions working to conserve, protect, or rehabilitate wildlife. <http://www.swbg-conservationfund.org/>

Toyota Tapestry Grants

Deadline: January 18, 2010

The Toyota Tapestry Grants program offers grants to K-12 science teachers for innovative projects that will enhance science education during the 2010-11 school year. The program will award 50 large grants and a minimum of 20 mini-grants, totaling \$550,000 in all, for pro-

jects in the categories of Physical Science Application, Environmental Science Education, and Integrating Literacy and Science.

<http://www.nsta.org/pd/tapestry>

NASA Invites Young People to Take Virtual Space Station Spacewalks

Imagine the thrill of floating out of the International Space Station and into the emptiness of space and what it would be like to work on the orbiting science laboratory. NASA has developed a new video game, Station Spacewalk, to give young people an "out of this world" virtual opportunity to experience the thrill of working on a mission to the International Space Station from their computers.

This new video game is based on actual work astronauts performed during the course of several NASA missions. The game is part of NASA's broader educational outreach effort to engage and inspire students in science, technology, engineering and mathematics.

"It's all about getting the next generation excited about space exploration," said Chris Kemp, chief information officer at NASA's Ames Research Center at Moffett Field, Calif. "Players, or 'astronauts,' can virtually navigate their way through mission critical tasks. This game provides players a sense of the magnitude of complexity and thrill associated with NASA missions."

As an astronaut, players visualize a detailed virtual mock-up of the International Space Station that was created for NASA's space station program. Players participate in four critical spacewalks that provide power to the station to keep it operating at full capacity. Players must complete their tasks quickly and carefully, before the air supply runs out.

Players begin by managing their way out of the airlock. The first task is to install the S6 truss segment, the long "backbone" of the station that supports the solar arrays. The player can open the S6 solar arrays, an essential task because they provide photovoltaic energy for the space station. These tasks are based on the shuttle mission to the space station that delivered the segment and deployed the solar arrays.

Players then can use a robotic arm to repair a tear in a solar array, a task NASA astronauts performed during another shuttle mission. When the work is done, players must carefully collect tools that are floating in space.

To take a virtual spacewalk in the Station Spacewalk game, visit:

http://www.nasa.gov/multimedia/3d_resources/station_spacewalk_game.html

For more information about NASA's education programs, visit:

<http://www.nasa.gov/education>

For more information about the International Space Station, visit:

<http://www.nasa.gov/station>

Information about the STS-119 mission, which deployed the station's S6 solar arrays, is available at:

http://www.nasa.gov/mission_pages/shuttle/shuttlemissions/sts119

Information about the STS-120 mission, which included repairs to a damaged solar array, is available at:

http://www.nasa.gov/mission_pages/shuttle/shuttlemissions/sts120

Sun-Earth Day 2010 - Magnetic Storms

It is a new theme and a new website!

<http://sunearthday.nasa.gov>

Please join us again this year for our 10th year of Sun-Earth Day.

Integrate Science and Technology - NPR Science Friday Podcast

I'm a big NPR Science Friday fan and wanted to pass along this podcast link in case any of you missed it. It seems to showcase several ways to integrate science and technology.

<http://www.sciencefriday.com/program/archives/200909253> (The download/streaming link is in the upper left of the Web page.) Building Science Education (broadcast Friday, September 25th, 2009)

How can educators make science more relevant, interesting, and teachable in the classroom? In this segment, we'll talk with some people using interesting approaches to science education - from building better online resources for educators, to encouraging students to explore and interact with science on their own terms.

Submitted by Jason Potsander

K-12 Siemens We Can Change the World Challenge www.wecanchange.com

The Siemens We Can Change the World Challenge is now accepting entries for the 2009–2010 competition. The second year of this national sustainability challenge—now expanded to include elementary school students—encourages students in kindergarten through eighth grade to team up with their classmates to create replicable solutions to environmental issues in their classroom (grades K–2), school (grades 3–5) and community (grades 6–8). Student and teacher/mentor prizes, which vary according to grade level, include savings bonds, school grants, exciting trips, TV appearances and much more.

The deadline for elementary level entries is January 31, 2010 (finalists and winners to be announced March 10, 2010); and the deadline for middle school entries is March 15, 2010 (state winners to be announced April 26, 2010, and national winners to be announced May 10, 2010). For more information visit the web site.

K-12: PBS Teachers

<http://www.pbsteachers.org>

This popular Web destination has been redesigned, making it easier and quicker for educators to find appropriate resources. It offers a searchable data base of more than 9,000 free local and national standards-based teaching activities, lesson plans, on-demand video resources and more.

K-12: Free videos from the NIH

<http://science.education.nih.gov>

Women are Scientists is a series of FREE videos from the National Institutes of Health that showcase successful female scientists in their respective specialties. The videos are designed to motivate students to take more challenging advanced science courses and to enable them to successfully direct their own career paths.

The K-2 & 3-5 Teachers' Lounges

Gr K-2:

<http://undsci.berkeley.edu/teaching/k2.php>

Gr 3-5:

<http://undsci.berkeley.edu/teaching/35.php>

These web sites both provide excellent resources to integrate the nature and process of science into your teaching, and gain insights into helping students see how science really works.

See also

<http://undsci.berkeley.edu/teaching/index.php> for links to resources for 6-8 and 9-12.

Grades 5-8: 2010 Rubber Band Contest for Young Inventors

<http://rubberbandcontest.org/>

Is one of your students America's next great inventor? The Rubber Division of the American Chemical Society (ACS), The Akron Global Polymer Academy, and The University of Akron are hosting the 2010 Rubber Band Contest for Young Inventors to encourage students in grades 5-8 to demonstrate their creativity and ingenuity by creating an invention that incorporates the use of rubber bands.

This year there will be two separate divisions of competition - Arts & Leisure and Science & Engineering. Four finalists will be brought to Akron, Ohio, where the first place winner and runner-up in each division, will be announced at an Awards Ceremony on May 1, 2010. The first place winner in each division will receive a \$5,000 savings bond, while the runner-up in each division will receive a \$2,500 savings bonds respectively. The top 8 semi-finalists who are not chosen as finalists will each receive a \$50 gift card. The teacher/mentor of each first place winner will receive a \$400 gift card, and the

teacher/mentor of each runner-up will receive a \$200 gift card. February 10, 2010 is the final deadline for all contest entries.

7-12 DuPont Challenge Science Essay Competition

<http://thechallenge.dupont.com>

DuPont Challenge© Science Essay Competition gets students writing about science! Students in seventh through 12th grade research and write a 700 to 1,000-word essay about a scientific discovery, theory, event or technological application that has captured their interest. Created to honor the Challenger astronauts, students can win savings bonds up to \$5,000, and a trip to Walt Disney World and to the Kennedy Space Center. Teachers win too! Along with the trips with their students, teachers can also win \$500 grants. Students have the opportunity to be inspired, to be creative, and to tell a story in this essay about any scientific topic. To learn more about the competition, check out the website. Entries will be accepted from December 1, 2009 until January 31, 2010.

Wanted: NASA Solar System Ambassadors

Do you love space? Are you adept at sharing your love of the stars with the public? If so, here's a chance to join a growing network of space enthusiasts who have volunteered as NASA Solar System Ambassadors. Ambassadors from the states of Delaware and North Dakota especially are needed to represent those states.

The application period is being extended through **Oct. 16, 2009**. Ambassadors are U.S. citizens selected from all 50 states, Washington, D.C., and Puerto Rico, or U.S. citizens serving U.S. audiences abroad. The program is one of the longest-running NASA volunteer outreach projects.

Each ambassador receives online training from NASA's Jet Propulsion Laboratory and educational materials supplied by various space missions, such as the next Mars rover -- Curiosity. Curiosity will check to see whether Mars has been favorable for supporting microbial life and preserving evidence of life. The rover is scheduled to launch in October 2011.

To apply as a NASA Solar System Ambassador, visit <http://www.jpl.nasa.gov/events/ssa.cfm>.

For more information about the Solar System Ambassador Program, visit <http://www2.jpl.nasa.gov/ambassador/index.html>.

A calendar of events hosted by ambassadors is available at <http://www2.jpl.nasa.gov/ambassador/events.html>.

Questions about this opportunity should be directed to Kay Ferrari at ambassadors@jpl.nasa.gov or at 818-354-7581.
