



SCIENCE BYTES

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National DNA Day

Calling all classrooms in Alaska!

April 25th is National DNA Day! Celebrate with the National Human Genome Research Institute at the National Institutes of Health.

On Friday, April 25, 2008, log on to www.genome.gov/dnaday <<http://www.genome.gov/dnaday>> , to participate in a live, online [chatroom](#)!

Students can chat with leading researchers in the field of genetics and ask any type of question related to genetics. The chatroom will be open from [8am until 6pm \(EST\) on April 25](#). We've extended the time the chatroom is open, and we are hoping classrooms in Alaska will log in and participate.

To read last year's transcript, visit www.genome.gov/dnaday <<http://www.genome.gov/dnaday>>

In addition, log on to genome.gov/dnaday for other DNA Day resources and activities. If you have any questions please contact Sarah Harding (sharding@mail.nih.gov).

Hope to see you in the chatroom,

Sarah Harding

Campbell Creek Science Center Programs

April 16: A Cultural and Historical Geography of Campbell Creek

The Campbell Creek that we live and work by today is incredibly different from the way it was just over 100 years ago when the Dena'ina took fish from its waters. Its form has been altered, wetlands have been filled, and much of the riparian areas are now developed. Come learn more about the changes that came with Anchorage's beginnings in 1915 to the present from Cherie Northon. The program begins at 7:00 pm on Wednesday, April 16 at the BLM Campbell Creek Science Center (6865 Elmore Road).

Please call 267-1247 for more information.

Polar Polooza!

It looks like a great opportunity for credits and climate change!

In honor of the International Polar Year 2007-2008, a coordinated campaign of research in polar science, an exciting national educational tour on global climate change is coming this May to the Anchorage Museum of History and Art (AMHA) and the University of Alaska Museum of the North (UAMN) in Fairbanks. This national tour on climate change, polar science and our changing planet, called POLAR-PALOOZA, presents polar science and climate change information in new and engaging ways. The events associated with POLAR-PALOOZA will include programs for families, students, teachers and the general public.

The main event of POLAR-PALOOZA, Stories from a Changing Planet, is a multimedia presentation 7-9pm Monday, May 5 in the Anchorage Museum Auditorium, and from 7-9pm Friday, May 9 at West Valley High School in Fairbanks (polar science-related activities will be available the hour prior to the performance in Fairbanks, 6-7pm). This amazing and unusual program combines video footage from the poles with in-person dramatic presentations from leading polar researchers, Arctic experts and residents affected by global climate change.

POLAR-PALOOZA is teaming up with Project WILD and Project Learning Tree to offer a K-12 teachers' Climate Change workshop. The workshop will demystify this complex subject and engage teachers and students to take action to help find solutions. Educators can take this workshop in Anchorage or Fairbanks. The

workshop will be held at AMHA in Anchorage from 6-9pm Tuesday, May 6 and 9am-4:30pm Saturday, May 10. The workshop at UAMN in Fairbanks will be 4:30-8:00 pm Thursday, May 8 and 9am-4:30pm Saturday, May 10. Teachers may earn continuing education credit through the University of Alaska Anchorage on completion of the workshop.

Contact Project WILD coordinator John Tyson at the Alaska Department of Fish and Game (907-267-2216; john.tyson@alaska.gov) to register or learn more about the teacher workshop.

Anchorage Museum of History and Art:
<http://www.anchoragemuseum.org/>

UA Museum of the North:
<http://www.uaf.edu/museum/>

Craig R Kasemodel

PolarTREC Teacher 2008: Bering Sea Ecosystem Change Study kasemodel_craig@asdk12.org

Toyota International Teacher Program to Send Educators to Galapagos Islands

Administered by the Institute of International Education, the Toyota International Teacher Program offers study abroad opportunities for U.S. teachers.

Now in its third year, the Toyota International Teacher Program to the Galapagos Islands will travel with thirty secondary school educators in late November 2008 to the Galapagos Islands in the Pacific Ocean. Full-time teachers and teacher librarians in grades 6-12 from all fifty states and the District of Columbia are encouraged to apply for this fully funded international professional development opportunity.

The 2008 program to the Galapagos Islands will take place November 22 - December 6, 2008. Direct costs of participation (transportation, lodging, meals and all program activities) will be paid by Toyota. While in the Galapagos, program participants will have the unique opportunity to work in groups with Galapagueño teachers on the design of interdisciplinary environmental lessons. These lessons will be shared with the wider education community.

Visit the IIE Web site for complete program information and application procedures.

Contact:

http://www.iie.org/programs/toyota/galapagos/galapagos_main_w_links.html

Passport to the Future Teacher Workshop July 21-22 2008 Hartford, CT

A session for everyone! This event was created for teachers like you who are interested in astronautics and aeronautics and want to learn about the technical side of hands-on activities. The grade level focus is from kindergarten to grade 12. You will also be able to view a number of elaborate technical exhibits and attend an aerospace plenary session and presentations.

Key Topics and Benefits:

- # Network with other educators for across the country and share ideas on how to inspire your students
- # Best practices in STEM pedagogy
- # Effective use of instructional technology
- # Continuing Education Units (CEU) available

Registration for this event will open April 2008.
Sponsored by Hamilton Sundstrand.

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Flinn Scientific

Engaging and educational! That describes this month's two complimentary hands-on lab ideas from Flinn Scientific—both activities are designed and tested to help your students understand intriguing science concepts. Your students can use the life science lab idea entitled "Seeing out of the Corner of Your Eye," to investigate the range of their peripheral vision—measuring their ability to detect motion, color, details, and shapes. The results can serve as an insightful addition to a lesson about the fascinating structure and function of the human eye.

"Balloon Rocket Blastoff" is a guaranteed physical science favorite! Your students will indeed have a blast as they experiment with Newton's third law of motion by launching balloon rockets in a straight-line trajectory across the classroom.

Are you taking full advantage of the convenience of receiving these activities every month? We hope so, because we understand that your job is challenging—middle school teachers have huge responsibilities, yet so little time and limited resources. Count on Flinn to help you by providing innovative lab ideas, great products

at competitive prices, unbeatable service, and valuable technical support. Order all your science supplies from Flinn—the one-of-a-kind resource that is positively different from all the other science supply companies!

To print “Seeing out of the Corner of Your Eye” and “Balloon Rocket Blastoff” please go to:
http://www.flinnsci.com/Sections/MS/Activities/MS_act.asp

Alaska Agriculture in the Classroom

The Farmer Plants a Rainbow is a new program to teach kids about healthy eating, agriculture and the food pyramid. I will probably getting a kit to field test.

<http://www.agclassroom.org/rainbow/index.htm>

Alaska Master Gardener and Website

<http://www.alaskamastergardeners.org/>

This website has a lot of information about gardening in Alaska. I will add it to my Public Folder, Agriculture and Ecology.

Alaska Agriculture Day

Just a reminder that Tuesday, May 6 is Alaska Agriculture Day -- a great chance to make sure students know that farms provide the food they eat each day, as well as fabric, flowers and even fuel.

If you haven't signed up to have a guest reader on Alaska Ag Day, I need to hear from you by Saturday, April 19 so we can match readers with classes. The reader will bring a book on agriculture and talk to your students about the importance of agriculture. We have a few different books this year, such as "Foods from the Farm" by Rebecca Weber, "Farming," by Cassie Mayer, and "Farming" by Ann Love, as well as some specialty books. In many cases the reader will chose the book. The books will be left in the classroom.

Some schools are planning special Alaska Ag Day events for some or all of their students — tours, speakers, activities and presentations. Even if that won't work for your school this year, there are easy ways to add agriculture to your regular classroom activities on Alaska Ag Day or any day. You'll find some lesson plans, activities and ideas on the Alaska Ag in the Classroom website. There are even more available on CDs -- just email your request. The activities are a great way to prep and follow up with your students. Ag Day posters are also available and approved in Anchorage schools.

Please let me know if you have Alaska Ag Day activities at your school so I can keep track of this year's participation. I will also be sending out press releases, including media tip sheets, if you'd like your class' activities on the list for local media.

Remember, you'll need to contact me by next Saturday and tell me your school, grade, phone, best times

(and black-out times) and any book or topic preference. We also have some readers who are available other days that week if May 6 is already booked for your class.

Thanks to those of you who have responded. Together, we can grow agricultural literacy in Alaska.

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www.agclassroom.org/ak

Alaska Agriculture in the Classroom is a project of the Alaska Farm Bureau

NASA Teacher Workshops & Classroom Activities

NASA Education Specialist

anthony.d.leavitt.nasa.gov

360-624-2649

Request a program or workshop at web site:

<http://csats.psu.edu/SpaceGrant/AESPrequest.cfm>

- 1. Aeronautics (Forces of Flight, Gliders)** <Gr 4 - up>
Examine how airplanes fly. By exploring the four forces of flight, Bernoulli's Principle and angle of attack, student come to understand how an airplane's control surfaces allow it to maneuver through the air. Students then build a glider and test what they have learned.
http://www.nasa.gov/audience/foreducators/k-4/features/Four_Forces_of_Flight.html
- 2. Sun-Earth (Exploring Light & Color)** <Gr 3 - up>
Students explore the electromagnetic spectrum from radio waves to gamma waves. What are the properties of waves? How do electromagnetic waves differ from sound waves? How do the differing forms of energy with different wave lengths affect us? In the visible spectrum, what cause color differences?
<http://science.hq.nasa.gov/kids/imagers/ems/ems.html>
<http://imagine.gsfc.nasa.gov/docs/introduction/emspectrum.html>
- 3. Earth-Moon System (Phases, Eclipses)** <Gr 3 - up>
Explore the enormity of scale as you compare the sizes of the Earth, Moon and Mars. How large is the moon really, and how far away is it? We all observe the moon go through phases. We examine moon phases and eclipses,

using models to demonstrate earth-lunar-solar geometry which lead to them.

<http://solarsystem.nasa.gov/planets/profile.cfm?Object=Moon>

<http://sunearthday.nasa.gov/2006/index.php>

4. **Earth Science(Seasons, Mission Geography)**<Gr K-up>

Engage students in active, “hands-on” inquiry, modeling the scientific method and developing students’ understandings of environment-society relations and earth science. Mission Geography K-4, Mission Geography 5-8, and Mission Geography 9-12, contains curriculum support materials focused on the development of key grade-level-appropriate geography skills including remote sensing and map/image interpretation.

<http://missiongeography.org/mgonline.htm>

http://ksnn.larc.nasa.gov/k2/s_seasons.html

<http://www-sprof.gsfc.nasa.gov/stargaze/Sseason.htm>

5. **Engineering Math and Science (Marsbound)** <Gr 5-up>

‘MARSBOUND- Design a Science Mission to Mars!’

Engage in a self-contained activity in which your students will use realistic techniques to plan a mission to Mars.

Now, just like NASA mission planners, you must design a potential mission to the Martian surface, solving issues of mass, power and cost. Also, learn ways to bring more exciting NASA materials and programs right to your school.

<http://marsbound.asu.edu/home.html>

<http://mars.jpl.nasa.gov/index.html>

6. **Planetary Geology (Mars & beyond)** <Gr 5-up>

Students explore the geologic features of Mars terrain. How do these features compare with those found on the Earth? Using National Geographic maps of Mars (Feb 2001), students learn how to read and interpret maps (compass direct, longitude/latitude, coloration, etc.) and search for the famous Mars Exploration Rovers.

<http://mars.jpl.nasa.gov/index.html>

<http://shop.nationalgeographic.com/product/179/375/123.html#>

7. **Astrobiology (Mystery Planet Inquiry)** <Gr 2-up>

A future step in NASA’s examination of distant planets will be a sample return mission, which brings materials back to Earth to study in laboratories here. Student groups will examine materials from a simulated sample return. These materials must be categorized, described in detail, and examined to decide their geologic, biologic or tech-

nologic origin. What can we discover about the planet these samples come from?

<http://ares.jsc.nasa.gov/Education/Websites/AstrobiologyEducation/index.html>

<http://astrobiology.arc.nasa.gov/education/>

8. **Astrobiology (Astro-Venture)** <Gr 5-8>

Students undertake a computer-based exploration of NASA careers and astrobiology research in the areas of Astronomy, Geology, Biology and Atmospheric Sciences. Students in grades 5-8 role-play NASA occupations, as they search for and build a planet with the necessary characteristics for human habitation.

<http://astroventure.arc.nasa.gov/avhome.html>

9. **Modeling the Solar System (Scale, dist.)** <Gr 1-up>

Explore the enormity of scale as you compare the sizes of the Earth, Moon and Mars. How large is the moon really, and how far away is it? How long would it take to get to the moon, Mars, Saturn, Pluto? NASA has missions at, or on there way, to each of these. Learn about these missions and the distance and time each travels.

<http://solarsystem.nasa.gov/index.cfm>

10. **Astronomy (The Hubble Deep Field)** <Gr 6-up>

“Expanding Our Universe- The Hubble Deep Field”

Combine your math and science skills to study galaxies beyond our own Milky Way. Learn how scientists categorize galaxies by shape and color. Gain a working knowledge of scientific notation as you estimate the number of galaxy systems in the universe.

<http://amazing-space.stsci.edu/resources/explorations/hdf/>

<http://hubble.nasa.gov/>

11. **Rockets (Design/Build/Launch!)** <Gr 3-up>

Practice engineering, math and data acquisition skills while building rockets, made of just paper and tape. Each of Newton’s Laws is examined and utilized as we launch rockets for maximum distance. Come away with a great activity illustrating the scientific method, and get the design to build your own PVC launcher.

http://download.micron.com/pdf/education/k12_pdf_lessons/forces.pdf

<http://quest.nasa.gov/space/teachers/rockets/act11.html>

12. **Living and Working in Space (Biology, etc.)** <Gr 4-up>

What conditions are needed for humans to survive the harsh environment of space? Explore the hazards and determine what things we may take for granted here on

Earth, which are essentials to live in SPACE! (Many activities available: topics range from microgravity, bone loss, radiation, space debris, and the vacuum of space.)

<http://www.nsbri.org/Education/Materials.html>

<http://www.nsbri.org/HumanPhysSpace/indexb.html>

13. Exploring Microgravity(Toys in Space, etc) <Gr K - up>

Students demonstrate the actions of a variety of children's toys in microgravity for classroom comparison with the actions of similar toys on Earth. Study the concepts of physics, forces and motion, while learn about the weightless environment of space travel!

<http://quest.nasa.gov/space/teachers/liftoff/toys.html>

<http://ksnn.larc.nasa.gov/webtext.cfm?unit=float>

http://observe.arc.nasa.gov/nasa/exhibits/toys_space/toyframe.html

14. How do Astronauts train? (Phys.Ed?) <Gr 2 - up>

Students explore how and why astronauts need to exercise to stay fit in space. Learn why exercises done in your very own physical education class are essential for astronauts in orbit 200 miles above the Earth!

<http://hacd.jsc.nasa.gov/projects/ecp.cfm>

http://www.nasa.gov/audience/formedia/presskits/fit_for_space.html

15. Global Positioning Systems (“GPS” w/ units)<Gr 5 - up>

We all benefit from the technology...but what is GPS and how does it work?

Scientists, sportsman, farmers, soldiers, pilots, surveyors, hikers, delivery drivers, sailors, dispatchers, lumberjacks, fire-fighters, and people for all areas of life use GPS to make their work and play easier and safer. Students get hands on experience with GPS units through generous funding from the Oregon Space Grant Consortium.

<http://gpshome.ssc.nasa.gov/default.aspx>

<http://www.trimble.com/gps/index.shtml>