



December Science News and Information

General

My Class Project

This video contest gives K-12 classes, nationwide, the opportunity to win a new 3M SCP712 Projection System for their classroom. The student or class will need to produce and submit a video 1-3 minutes in length, illustrating why their classroom will benefit from a 3M SCP712 Projection System. Because teachers are encouraged to help students with this collaborative project, 3M has developed lesson plans to make it easier for teachers to incorporate this project into their everyday curriculum. There is no deadline for this program. For additional information, go to <http://myclassprojector.com/home>.

Plant It Forward

From reusing paper bags to repurposing paperboard packaging, there are hundreds of easy ways you can help to keep our forests abundant for the future. Enjoy and share these ideas. And tell your friends to *Plant It Forward*. This site has great ideas for class or home projects for use in any classroom teaching environmental education concepts. Go to <http://pif.abundantforests.org>.

Journey North: Migrations, Climate, and More

Teachers and students in K-12 classrooms are invited to participate this spring in Journey North's 16th annual global study of wildlife migration and seasonal change. A free Internet-based citizen science project, Journey North enables students to watch the wave of spring as it unfolds. Students monitor migration patterns of monarch butterflies, hummingbirds, whooping cranes, and other animals; the blooming of plants; and changing sunlight, temperatures, and other signs of spring. They share their local observations with classmates across North America and beyond, and they look for patterns on real-time maps. *Each Journey North* study features many entry points and resources that address learning standards: *Journey North for Kids* reading booklets and lessons, stunning photos and video clips, interactive maps, instructional units, and compelling migration stories. Website access and participation is **free**. Take a glimpse at the spring projects here: <http://www.learner.org/jnorth/season/spring2009>. The home page can be accessed at <http://www.learner.org/jnorth>. Plan now; these monitoring projects begin on **February 1st!**

Elementary

Fetch!

The *Fetch!* website offers games, hands-on challenges, and resources to reinforce the problem-solving process and the understanding of science for students ages 6-10, grades 1-4, at <http://pbskids.org/fetch>.

Beginning Ocean Science

This module, *Ducks in the Flow*, intended for grades 3-5, includes a storybook and three classroom activities. In the storybook, the three kids work collaboratively to explore and investigate surface currents found in the ocean. Access the module at http://www.windows.ucar.edu/tour/link=teacher_resources/ocean_education/currents_main.html.

Free Web Tools for Elementary Teachers

A listing of some of the best sites for elementary teachers and students online, plus a few tools to help you keep everything together is found at <http://www.smartteaching.org/blog/2008/08/100-awesome-free-web-tools-for-elementary-teachers>.

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Middle School

CHEM4KIDS

This is one of many free science sites developed by the team at *Kapili.com*. The site offers an introduction to the science of chemistry at <http://www.chem4kids.com>. You may have also used *Biology4Kids* at <http://www.biology4kids.com>. For a complete list of science topics, go to <http://www.kapili.com/topiclist.html>.

GNUS for KIDS

Are you interested in accessing news in science that motivates students? If so, this is the site for you. Contributors such as Scientific American, Discovery Channel, and Pulse of the Planet contribute interesting information with graphics and illustrations every Tuesday. These online articles can prompt interest, discussions, projects and writing assignments in science. Access these materials at <http://www.k12tlc.net/gnus/gnustue.htm>.

The DNA Files Materials

<http://www.exploratorium.edu/dnafiles>

DNA and genetics research is advancing rapidly, and with every development, it is clearer that understanding DNA and genetics is a fundamental part of science literacy. To respond to this need, the Exploratorium has created downloadable workshop resources for non-scientist presenters in informal education environments to introduce general audiences to the basics of genetics. These interactive workshops use hands-on activities to explore fundamentals about DNA, its role in evolutionary change, similarities between humans and other creatures, and the role of climate change in genetic processes. Information for the workshops is fully downloadable and includes detailed teacher guides, materials lists, and graphics. No prior knowledge about DNA is required for the educator or the participants. The workshops are suitable for two audience demographics: 5th through 7th graders or families.

Discovery Education NASA at 50 Series -- Grades 6-12

NASA at 50 highlights key innovations and milestones in the sciences and in space exploration from NASA's 50-year history. Each clip serves as a gateway for further learning in science and history; each promotes critical thinking and inquiry as essential components of scientific literacy. Students can enjoy *NASA at 50* in video or audio formats. In addition, teachers' guides are provided for each clip to facilitate integration of this content into lesson plans. Downloadable versions of the videos are captioned. To access video clips and resources, go to http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Discovery_Education_NASA_at_50.html.



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High School

Science Hack

All the science-related videos, from many sources placed on this site, have been screened by scientists to verify accuracy and quality. Use the virtual search engine at <http://sciencehack.com> to find what you need from this wealth of videos in the way of science experiments, projects, and movies. The video clips are great for illustrating a process, structure, or connection in the science classroom!

HHMI Research on Meiosis

To read about the latest discoveries on the mechanisms involved in meiosis, view the meiosis article, named *The Meiosis Dance*, in the HHMI Bulletin online at <http://www.hhmi.org/bulletin/nov2008/features>. A slide show illustrating meiosis in *C. elegans* cells is available for viewing as part of the article at <http://www.hhmi.org/bulletin/nov2008/features/dance6.html>.

Career Explorations for Students

Extended information about fourteen medical technology career fields has recently been added to the Sloan Career Cornerstone Center website. Over 150 other career paths are also presented in science, technology, engineering, mathematics, computing, healthcare, and medicine that are featured on the site. Every field includes educational requirements, salary data, employment information, and a brief overview of the work life and responsibilities of those working in the area. Also included are associate degree fields that generally require a two-year education as opposed to a typical four-year bachelor degree. With this training, individuals can get to work in about half the time a four year degree would require. Many of the fields in medical technology are in high demand.

The Sloan Career Cornerstone Center offers extensive PDF and PowerPoint files on each field which can be used by teachers, counselors, students, and parents. The site also includes comprehensive preparation tips, salary data, job hunting ideas, personal interviews with hundreds of people who offer candid insight into their own diverse careers, updated lists of summer camps, national programs and projects, and scholarship opportunities for high school students. For more information, visit www.careercornerstone.org.

Center for Excellence in Education (CEE) Programs

Additional information about CEE and registration guidelines for the Research Science Institute and the USA Biology Olympiad can be found at: www.cee.org.

USA Biology Olympiad - Registration Now Open Online

The USA Biology Olympiad is the premiere biology competition in the United States. Starting with almost 10,000 registered students from 40 states in 2008, the competition ultimately selects four students as "Team USA" who will represent our nation at the International Biology Olympiad. Last year, for the second year in a row, Team USA returned home from the International Biology Olympiad with four gold medals. The USA Biology Olympiad also offers a "Teacher Resource Center" to registered schools to assist teachers. The Teacher Resource Center includes practice exams with answer keys, links to International Biology Olympiad exams, textbook recommendations, links to outside professional development opportunities and study guides, as well as a breakdown of the grading rubric and testing protocol.

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Research Science Institute - Applications Now Available Online

Each summer, the Research Science Institute invites approximately 80 of the world's most promising students in science, mathematics, and engineering to gather on the campus of the Massachusetts Institute of Technology (MIT). Their mission is to plan, execute, analyze, and report on a research project of current interest in their fields. Under the mentorship of leading researchers at laboratories throughout Boston, these students do original work at a level characteristic of late college or early graduate school; and many projects have resulted in co-authorship of a journal article, award-winning entries in nationally-recognized science competitions, or the development of a commercially-significant technology. The six week, all-expenses-paid program, is meant to give rising scholars a jump-start in careers of leadership in science, engineering, mathematics, and technology.

Planet Connect Grant Program

Do you have an innovative solution to protect the environment? Planet Connect can help make it happen! Planet Connect is a new online network for High School students to learn about the environment plus green college and career options. They are looking for creative ideas to fix an environmental problem at your school or in your community.

Planet Connect is offering grant winners \$1,000 awards to support their idea and provide winners with a local environmental internship. Make a difference! Apply for a grant today. Visit www.planet-connect.org for a grant application and more information. Application deadline is **January 20, 2009**.

Darwin 200

As a prelude to the 200th anniversary of Charles Darwin's birth on 12 February in 1809, this *Nature* News special looks at how his work on natural selection is still provoking debate; finds out how previous Darwin anniversaries were celebrated; rounds up the events in the coming year that will celebrate the man's life and works; and much more. There's also a stunning gallery of eyes - the organ so brilliantly 'designed' that Darwin feared it may block the acceptance of natural selection. To access resources for this a Darwin anniversary event, go to <http://www.nature.com/news/specials/darwin/index.html>.

NASA's Hubble Ultra Deep Field Lithograph: Grades 10-12

At the end of their lives, low-mass stars expand in size and become red giants. Then they shed their outer layers and become planetary nebulae. The Hubble Ultra Deep Field, an image that contains as many as 10,000 galaxies of all shapes, sizes, colors and ages, is on the first page of the lithograph. Background information about the HUDF is on the second page. The lithograph includes a Level One Inquiry activity entitled *In Search of ... Galaxy Evolution*, in which students analyze galaxies from different eras to determine how they have evolved and changed over time. To access the lithograph and accompanying materials, go to http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Hubble_Ultra_Deep_Field_Lithograph.html.

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Teachers

Cutting-edge Learning Tools

At <http://www.learningscience.org> teachers find a wealth of information about newer and emerging learning tools used in science education. Simulations, data collection, web exercises, and imaging are just some examples.

The New Genetics (Biology)

The National Institute of General Medical Sciences (NIGMS), a component of NIH, posts research on cells, organisms, and processes in an easily read format. In addition, they publish science education materials and information which can be ordered free of charge by teachers. If the previous information on the HHMI meiosis article was of interest to you, you may preview and order *The New Genetics* from <http://publications.nigms.nih.gov/thenewgenetics/index.html>. For other interesting reports on current research, teachers or students can access their home page at <http://publications.nigms.nih.gov/thenewgenetics/index.html>.

Louisiana Outstanding Biology Teacher Award Nominations

If you would like to nominate yourself or someone else for the 2009 Louisiana OBTA, please contact Patsy Peebles at aeppeebles@aol.com. You will receive the application packet.

Project-Based Learning Lets At-Risk Students Apply Content

Previously at-risk students are now thriving at an innovative continuation high school in San Francisco, thanks to a project-based curriculum, educators say. The format allows students to meet curricular standards by pursuing topics that interest them, such as astronomy, environmental investigations, developing outdoor classroom settings with plants, testing common areas for bacterial contamination for reports, and construction projects for physical science such as designing and building sail boats or propulsion devices. To read the latest article on this effective teaching strategy, go to <http://www.edutopia.org/at-risk-students-project-learning>.

NAAEE Teacher Resources

The North American Association for Environmental Education (NAAEE) has resources for classroom teachers. At <http://eelink.net/pages/Teachers> teachers can sign up to get newsletters via e-mail. Plus, at <http://eelink.net/pages/Environmental+Links+-+Schoolyard+Ecology> there are all sorts of ideas for schoolyard projects.

Launch of Exploratorium TV Media Portal

<http://www.exploratorium.edu/webcasts>

Want to find webcasts, podcasts, or educational videos produced by the Exploratorium? Recently, the Exploratorium Website and Webcasting teams launched a new version of their media portal and archive. This portal and accompanying database provide access to media generated by the Exploratorium. There are a variety of media assets to choose from, including more than 450 Webcasts, podcasts, other audio recordings, video clips from Websites and other programs, and online activities. Most of the media is offered in a range of formats. The front page of the portal lets you know what events are coming up, as well as recent programs and featured picks. It has new search features, so that people can easily find what they are looking for.

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2009 Richard C. Bartlett Environmental Education Award

The Richard C. Bartlett Environmental Education Award is awarded annually by the National Environmental Education Foundation to an outstanding educator who has successfully integrated environmental education into his or her daily education programs. The award is given to a 5th-12th grade educator who can serve as an inspiration and model for others. A \$5,000 cash award is provided for the recipient to continue their work in environmental education. Do you know a teacher who stands out among the rest? If so, please nominate him/her for the 2009 Richard C. Bartlett Award. Nominations will be accepted through January 31, 2009. To learn more or to submit your nomination, go to <http://www.neefusa.org/bartlettaward.htm>.

2009 Cable's *Leaders in Learning* Awards

Applications are now being accepted nationwide for individuals who implement creative learning programs in their communities and are helping to push education progress to new heights. The annual Cable's *Leaders in Learning* Awards recognize outstanding educators, administrators, policymakers, and other leaders at the forefront of innovation in education. The application and nomination period runs through December 17 at www.LeadersInLearningAwards.org. The awards recognize a broad array of innovators, including highly inventive classroom educators, administrators, community leaders, and policymakers who are transforming education from kindergarten through high school. Winners receive a \$3,000 cash prize and trip to Washington, DC in June, 2009, where award recipients will visit with members of Congress to talk about their award-winning programs. For more information about Cable in the Classroom, the sponsors of this program, visit www.ciconline.org.

Six Star Science for Student-Centered Learning Fellowship

Middle and high school science teachers are invited to apply for a year-long **\$9,000 professional development fellowship** in the *Frontiers in Physiology Program, Six Star Science for Student-Centered Learning*, sponsored by the American Physiological Society (APS). The Six Star Science principles support excellence in education by focusing on student-centered instruction, diversity/equity, technology, assessment, current scientific content, and reflecting on teaching and learning. Awardees will receive consulting payments of up to \$9,000, travel costs, and a mini-grant for classroom materials. For more information, please visit <http://www.frontiersinphys.org> or email Mel Limson at mlimson@the-aps.org.

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