

Website Resources

Updated December 2007

Age-Dating Activity

<http://www.ucmp.berkeley.edu/fosrec/McKinney.html>

From University of California at Berkley. Good resource for Mystery #202, Grades 8-12. Uses M & M's!.

Ammonites

http://www.amnh.org/exhibitions/expeditions/treasure_fossil/Treasures/Ammonites/ammonite.html?aa

From the American Museum of Natural History

Archaeology

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

AIA Links to archaeology around the world

<http://www.archaeology.org/wwwarky/index.html>

Astronomy for Kids

<http://starchild.gsfc.nasa.gov/docs/StarChild/StarChild.html>

StarChild: a learning center for young astronomers

From the Astrophysics Science Division, NASA

Carbon-14

<http://education.jlab.org/itselemental/ele006.html>

About the element, Carbon, and how Carbon-14 is used for age dating.

From the wonderful folks at the Thomas Jefferson National Accelerator Facility, Jefferson Lab

Carbon-14

<http://packrat.aml.arizona.edu/Journal/v37n1/vartanyan.html>

A science detective story about a possible new prehistoric culture in Alaska- with some good descriptions of how carbon-14 dating is used.

Chemistry - Understanding our Planet Through Chemistry

<http://minerals.cr.usgs.gov/gips/index.html>

This U.S. Geological Survey site shows how chemists and geologists use analytical chemistry to: determine the age of the Earth; show that an extraterrestrial body collided with the Earth; predict volcanic eruptions; observe atmospheric change over millions of years; and document damage by acid rain and pollution of the Earth's surface.

Cloning - WebQuest on cloning

<http://powayusd.sdcoe.k12.ca.us/projects/dolly/>

Check out the matrix of examples. I think "Hello Dolly" (social and ethical implications of cloning) is one of the best examples of a WebQuest I have seen. It begins with an actual performance task and involves students in working together as a team with assigned roles and ends with a shared presentation.

Cosmos - Explosive Processes and the Evolution of the Universe

<http://csep10.phys.utk.edu/guidry/violence/violence-root.html>

Science and Engineering Research Council/Royal Greenwich Observatory. Violence in the Cosmos-Explosive Processes and the Evolution of the Universe: Includes subjects such as The Mother of All Explosions, The Stars: Some Don't Go Gently into the Night, The Galaxies: Some are Quiet, Some are Not, and more.

Dinosaurs

http://www.fnmh.org/exhibits/exhibit_sites/dino/Triassic.htm

On-line dinosaur exhibit at the Field Museum of Natural History, Chicago

Earth and Space Science for K-12

<http://vathena.arc.nasa.gov/>

NASA 's Athena site for teachers and students, funded by public use of remote sensing data, features oceans, Earth resources (earthquakes, landforms, wetlands, global change, Landsat images), weather, and space and astronomy.

Links to real-time data on earthquakes and water.

www.nasa.gov/centers/goddard/home/index.html

Goddard Space Flight Center - Located in a Maryland suburb outside Washington DC, is home to the Nations largest organization of combined scientists and engineers dedicated to learning and sharing their knowledge of the Earth, Sun, Solar System, and Universe

Earth Education Online

<http://earthednet.org/>

Online tools to support scientific inquiry, writing, and exploration

Earth - The Earth Balloon

Website: <http://www.earthballoon.com/>

The Earth Balloon is traveling outreach program that features a 22-foot (6.7 meters) globe students enter to learn about the changing Earth. Inside the Earth Balloon students learn about pollution, environmental science, earth science, geography, and math. The program is designed for grades K-12 with a packet of pre-visit materials being sent 2 weeks before a scheduled visit. The Earth Balloon is also available for purchase as a complete module. For more information, contact: david.knutson@earthballoon.com

Earth Science Education

<http://serc.carleton.edu/>

Teach the Earth, from the Science Education Resource Center (SERC) at Carleton College. A portal for undergraduate teaching resources that includes the Earth System approach; Integrating research and education; Assessment; Preparing preservice teachers.

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

The Virtual Courseware Project funded by the National Science Foundation and the California State University. Portals to Biology and Geology Labs Online; Virtual courseware for Inquiry-based Science Education and for Earth and Environmental Science

http://earthednet.org/ODP_Advert/odp_onepage.htm

Our Dynamic Planet a CD created at UC Santa Barbara by William Prothero

Earth System Education - DLESE

<http://www.dlese.org/library/index.jsp>

The Digital Library for Earth System Education (DLESE) is a distributed community effort involving educators, students, and scientists working together to improve the quality, quantity, and efficiency of teaching and learning about the Earth system at all levels.

DLESE supports Earth system science education by providing:

- * Access to high-quality collections of educational resources
- * Access to Earth data sets and imagery, including the tools and interfaces that enable their effective use in educational settings
- * Support services to help educators and learners effectively create, use, and share educational resources

* Communication networks to facilitate interactions and collaborations across all dimensions of Earth system education

DLESE resources include electronic materials for both teachers and learners, such as lesson plans, maps, images, data sets, visualizations, assessment activities, curriculum, online courses, and much more. Funding for DLESE comes in part from the National Science Foundation. National Earthquake Information Center, US Geological Survey, provides a wealth of information including quakes happening now.

Earth System Education - Smithsonian NMNH

<http://www.mnh.si.edu/explore.html>

Explore A Topic resources: The Evolving Earth; The Diversity of Life; The Human Connection; Our Connected Planet

Earthquake Education

<http://earthquake.usgs.gov/learning/>

About earthquakes - Links and portals to information and educational resources from the US Geological Survey

<http://www.seismo.unr.edu/k12network/>

"Real-Time" K-12 Educational Seismic Network establishes real-time seismographs in Nevada schools

Earthquake Information

<http://earthquake.usgs.gov/regional/neic/>

Location and size of earthquakes immediately available from the National Earthquake Information Center (NEIC)

Earthquakes & Plate Tectonics

http://wwwneic.cr.usgs.gov/neis/plate_tectonics/rift_man.html

USGS National Earthquake Information Center explains the connection.

<http://www.seismo.unr.edu/ftp/pub/louie/class/100/plate-tectonics.html>

A good summary from the Nevada Seismological Laboratory of the University of Nevada

Ecology Field Studies for Educators

Website: <http://maine.maine.edu/~eaghill>

Humboldt Field Research Institute and Eagle Hill Foundation, Steuben, Maine offers field experiences in five different ecological communities: lake, bog, salt marsh, stream, and red spruce-fir forest; formation, hydrology, soils, physiochemical relationships, and biota of these communities; student-centered learning approach, field experiences, study guides to help teachers to develop or expand their own field experience-based curriculum.

Evolution - Teaching About Evolution

<http://www.nap.edu/readingroom/books/evolution98/>

The National Academy of Science publication, "Teaching About Evolution and the Nature of Science" provides teachers, school administrators, and parents with a framework for helping students understand this scientific concept. The NSTA (National Science Teacher's Association) position paper on evolution is included as an appendix in the publication.

Fossils

<http://www.paleozoic.org/paleolinks.htm>

Outstanding websites from paleozoic.org

Fossils – Historical Geology

<http://www.ucmp.berkeley.edu/>

University of California Museum of Paleontology - Online Exhibits about the history of life on Earth, including K-12 Resources, and The Paleontology Portal

Galaxies

http://www.damtp.cam.ac.uk/user/gr/public/gal_milky.html

Cambridge Cosmology

Geography/Earth Science Education - Purchase maps and software

<http://members.aol.com/bowermanb/101.html>

Geologic Age - Lesson plan for teachers on geologic age determination

http://interactive2.usgs.gov/learningweb/teachers/geoage_activity.htm

Using Radioactive Decay to Determine Geologic Age (for grades 7 - 12)

Geologic Processes - K-12 Activities about sedimentary geologic processes

<http://www.beloit.edu/~SEPM/>

A website from the Society for Sedimentary Geology

Geologic Processes - Resources for teaching about

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

K-12 education material from the US Geological survey

Geologic Time - Online publication

<http://pubs.usgs.gov/gip/geotime/>

The full text of the USGS publication titled, Geologic Time is available online

Geologic Time and Paleontology

<http://www.ucmp.berkeley.edu/fosrec/TimeScale.html>

The Geologic Time Scale-Learning from the Fossil Record, a site from University of California, Berkeley, with lots of educational resources and activities.

Geologic Time information

<http://www.ucmp.berkeley.edu/help/timeform.html>

The University of California Museum of Paleontology - Original Geologic Time Machine (Collins, 1994) updated as of 2002.

Geology link

<http://www.geologylink.com/>

For anyone who has ever been interested in "the world's daily geological rumblings," Geology Link is a "must see" site. You'll find breaking news on geologic events all over the world, the latest news and discoveries, hot topics, virtual field trips, interactive forums, an image gallery and more. From Houghton Mifflin Company, this site has something for everyone, from preschoolers to professional geologists.

Geology of US States

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

Links to the Geological Surveys of all 50 states provided by the Association of American State Geologists

Glaciers, part of the water cycle

<http://ga.water.usgs.gov/edu/earthglacier.html>

USGS, Water Science for Schools

Homo sapiens - Migration

http://www.ucalgary.ca/applied_history/tutor/migrations/one2.html

http://www.pbs.org/wgbh/nova/teachers/programs/3116_stoneage.html

"Stone Age Explorers" - a program from pbs. NOVA investigates the evidence for and controversies surrounding who the first Americans were, where they came from, and how they arrived in the Americas.

Kids Web for Earth Science

<http://www.ucmp.berkeley.edu/fosrec/TimeScale.html>

"Front door" for student-oriented current events, includes, Ask a Geologist, earthquake information, current research.

Lesson Plans

<http://atm.geo.nsf.gov/>

Lesson plans and classroom materials utilizing real-time environmental information in earth science and mathematics classes.

Magnetic Stripes and Isotopic clocks

<http://pubs.usgs.gov/publications/text/stripes.html>

US Geological Survey site about the discovery of sea-floor spreading

Mammoth

<http://packrat.aml.arizona.edu/Journal/v37n1/vartanyan.html>

Evidence for mammoths on Wrangel Island, Arctic Ocean, until 2000 BC.

This is a good example of a scientific article and speaks to the debate about what caused mammoth extinction.

Mammoth - NOVA

<http://www.pbs.org/wgbh/nova/teachersguide/mammoth/>

<http://www.pbs.org/wgbh/nova/teachers/>

Site for Teachers Guides

Mammoth - People and Environmental Change on the Northern Great Plains-

<http://www.usd.edu/anth/epa>

From the University of South Dakota, there's a link to a page called "The First Peoples, 10,000 BC-Did Overhunting Cause the Mammoth to Become Extinct?"

Meteors & Meteorites - Classroom research

<http://www.seds.org/billa/tnp/meteorites.html>

A great site for classroom research; with information, images and links to all kinds of basic information about Meteors, Meteorites, and Impacts.

Milky Way

http://www.damtp.cam.ac.uk/user/gr/public/gal_milky.html

Milky Way Galaxy Cambridge University, England

Moon

http://asca.gsfc.nasa.gov/docs/StarChild/solar_system_level2/moon.html

Information about our moon especially for kids

Oceans - The Jason Project

<http://www.jason.org/public/home.aspx>

Explore the oceans with Bob Ballard.

Online Video Resources

<http://www.pbs.org/wgbh/nova/teachers/>

NOVA Teachers

Paleontology

<http://www.ucmp.berkeley.edu/paleo/paleowhat.html>

What is Paleontology? from The Museum of Paleontology, University of California, Berkeley

Physical Geology

<http://www.gpc.edu/~pgore/geology/geo101.htm>

Wonderful online resources for introductory geology course - Dr Pamela Gore (2003)

Plate Tectonics

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

Tectonic activities, visit this U.S. Geological Survey website

Plate Tectonics - This Dynamic Earth

<http://pubs.usgs.gov/publications/text/dynamic.html>

The Story of Plate Tectonics-complete book published by the US Geological Survey.

Pumice - What is it used for?

www.hesspumice.com

www.lightweightaggregate.com

<http://pumouse.hypermart.net>

<http://www olenych.com>

Information about pumice used in modern living

Radiocarbon Dating

<http://packrat.aml.arizona.edu/Journal/v37n1/vartanyan.html>

Evidence for mammoths on Wrangel Island, Arctic Ocean, until 2000 BC.

This is a good example of a scientific article and speaks to the debate about what caused mammoth extinction.

Satellite Images

<http://edcwww.cr.usgs.gov/Earthshots/>

Earthshots is a collection of satellite images that show how the environment has changed over the last 20 years. The effects of droughts, fires, deforestation, urbanization, irrigation, desertification, and other natural events can be detected, measured, and analyzed using the data.

Science - Teaching Resources

<http://www.scicentral.com/>

Gateway to scientific research news sources

Sedimentary Rocks - Resources for teaching about

<http://www.beloit.edu/~SEPM/>

A website dedicated to K-12 educators, geoscientists involved in K-12 education, and students interested in careers in sedimentary geology.

Space - World Builders

<http://curriculum.calstatela.edu/courses/builders/>

This is an interesting site from the Charter College of Education, California State University, Los Angeles where students and/or teachers learn geology and life science in order to design planets that support a variety of life forms. It includes lessons, many links to web pages, teacher resources, science notes, and planets created by teams of teachers.

Space Education

<http://spacelink.nasa.gov/.index.html>

NASA provides information and links for teaching about space.

Standards

<http://www.ucmp.berkeley.edu/fosrec/Matrix.html>

National Education Standards Matrix, Berkeley

Standards - Transition to standards-based learning

<http://www.nap.edu/bookstore>

Read more than 3,700 books online FREE!

"Every Child a Scientist: Achieving Scientific Literacy for All" from the National Research Council is a 26-pg booklet that offers guidance to parents and others on how to help their local schools make the transition to standards-based teaching and learning. For more information call 1-800-624-6242.

Sun

<http://www.seds.org/billa/tnp/sol.html>

Information about the sun.

Teacher Workshop/Field Experience

<http://cgee.hamline.edu/rivers>

Rivers of Life is a full model for contextual learning; a flood of projects, adventures, and resources to help K-12 teachers and students learn about and from their watershed.

Teaching & Learning Resources (Hundreds) from Federal Agencies

<http://www.free.ed.gov/>

"Federal Resources for Educational Excellence," (FREE)

Tectonic Plate Motion

<http://cddis.gsfc.nasa.gov/926/slrrecto.html>

How do plates move?

U.S. Geological Survey Learning Web

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

A wide variety of useful material, activities, and resources for teaching earth science

Volcanoes

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

A paper volcano model that students can make

Volcanoes - About Hawaiian Volcanoes

<http://hvo.wr.usgs.gov/>

This USGS site from the Hawaiian Volcano Observatory offers something for everyone. From fun activities for kids to learn about volcanoes to a volcano watch for the latest Hawaiian volcano eruptions, to how volcanoes work.

Volcanoes - Hawaii's Center for Volcanology

<http://www.soest.hawaii.edu/GG/hcv.html>

Maintained by the University of Hawaii (Manoa), this site is a good source of information on Hawaiian volcanoes.

Volcanoes - The Electronic Volcano

<http://www.dartmouth.edu/~volcano/index.html>

The Electronic Volcano is a window into the world of information on active volcanoes. From here you can find many types of materials on active volcanoes worldwide, such as maps, photographs and full texts of dissertations and a few elusive documents. The Electronic Volcano will guide you to resources in libraries or resources on other information servers

Web Quest - What is it?

<http://edweb.sdsu.edu/webquest/webquest.html>

Complete and current source of information about the WebQuest Model. Whether you're an education student new to the topic or an experienced teacher educator looking for materials, you'll find something here to meet your needs.

Wetlands - Learning about Wetlands.

<http://en.wikipedia.org/wiki/Wetland>

A good site to get started

<http://www.epa.gov/owow/wetlands/education/>

The education site from the Environmental Protection Agency