A Compendium of Selected Educational Resources for You and Your Students

- Earth2Class: www.earth2class.org/site

  Archived **workshops** presented by Lamont-Doherty Earth Observatory research scientists

- **Curriculum units** for teaching Earth Science

- **Educational resources** (slideshows, lesson plans, teaching tips, images, etc.)
Earth2Class (Earth to Class)

E2C is a unique science/technology resource for K-12 teachers, students, the general public, and educators. It is a collaboration among researchers and an Earth Science educator at the Lamont-Doherty Earth Observatory of Columbia University, technology integration specialists from College Board, Inc., and classroom teachers from New York, New Jersey, and elsewhere.

E2C contains annual "Saturday Workshops for Educators" held at Columbia's Lamont Campus in Palisades, N.Y. One key feature to E2C is involvement of LDEO scientists. Their availability through workshops, web site posting, and e-mail allow teachers and students access to cutting edge research which can be used to develop learning activities directly linked to "real-world problems," and provide scientists with an effective format to disseminate their discoveries more broadly. Since 1998, we have provided more than 120 Workshops featuring over 90 LDEO scientists.

Earth2Class is hosted at the Lamont-Doherty Earth Observatory of Columbia University

Tentative Dates for the 2015 - 2016 Workshops

19 Sep — Arthur Lerner-Lam (LDEO Assoc. Dir.) — Trends in Frontier ES Research

3 Oct — The Hackensack River Past, Present, and Future — Innovative Lessons

14 Nov — Allison Wing — Developing a Better Understanding of Hurricanes (note: to be held on the Morningside Campus)

16 Jan — Ariane Tore & Olivia Glen — Air Quality and Pollution Studies

11 Feb — Frank Negro — Melting of the Antarctic Ice Sheets (note: to be held on the Morningside Campus)

5 Mar — Margie Turrin & Dave Porter — Interactive Exploration of Sea Level Rise

23 Mar — Taro Takahashi — Impact of Ocean Acidification

16 Apr — Dallas Abbott — Field Research Results from Lake Shchuytchew, Russia

2 May — Sudarsh Jhunam & Andy J.N. — Adaptations of Marine Mammals

Preparing for the NGSS and Science in the Common Core

2015 Summer PD Institutes: Hackensack River, Minerals, and Weather

Principal Content

A second key to E2C is the ever-growing collection of educational resources that provide teachers, students, and others access to up-to-date information about our changing planet and for Earth Science courses. These make use of offerings available to anyone, even if they cannot attend the two workshops. Use the links in the boxes to explore these.
Earth Science Curriculum Units and Teaching Tips

Key Vocabulary Terms for High School (PSES) and Middle School (ILS) courses
Key Ideas
Selected Labs and Activities
Selected Websites
Links to NYS Earth Science Reference Tables
State Standards for NYS High School (PSES) and Middle School (ILS). + Others

NESTA Fall 2014 Workshop slideshows — For all NESTA/Windows to the Universe workshops presentations

- How Weird Can It Get Fall 2014 Long Beach
- Earth Science Rocks Workshop Fall 2014 NSTA Orlando (1)
- Harnessing ESS Fall NSTA 2014 Long Beach
- Using Data Workshop NSTA Fall 2014 Long Beach

Note: This is a continuous work-in-progress. If you have suggestions for additions or find problems, please notify michael@earth2class.org.
NESTA—NATIONAL EARTH SCIENCE TEACHERS ASSOCIATION

www.nestanet.org

- Largest professional society focused on supporting K – 12 Earth Science education
- Website provides online teacher resources, links to PD opportunities, and more
- Quarterly journal, The Earth Scientist, provides peer-reviewed articles of value to K – 12 teachers
- Monthly E-News with timely information for ES educators
- Conference workshops, rock raffle, other programs
Welcome to NESTA

GET READY FOR THIS FALL!

Join us at NESTA PD Workshops across the country at fall conferences. [Preview the NESTA workshops planned for the NESTA 2015 Fall and 2016 National Conferences](#)

Have ideas for student projects and need some funding support? NESTA announces the opportunity to apply for a Harold B. Stonehouse Mini-Grant. [Find out about rules and requirements.](#)

Concerned about proposals changes in State Assessment and Standards? NESTA is coordinating with other leaders in Earth Science Education to monitor potential decisions that will affect ES teaching. Here is an example of how NESTA can support efforts to influence the Decision Makers.

Help Support NESTA Today! NESTA works very hard to keep membership costs low, thanks to the efforts of its volunteers and hard working small staff. When it's time to renew your membership—or whenever you want to support NESTA's efforts to support strong Earth Science Education—we hope you will consider making a donation to NESTA to help expand the resources and programs we offer for teachers and students. Contributions to the National Earth Science Teachers Association are tax exempt under NESTA's non-profit IRS designation. We will be glad to provide a letter of appreciation recognizing your donation for tax purposes.

NESTA's Mission

The National Earth Science Teachers Association is a nonprofit 501(c)(3) educational organization, founded in 1985, whose mission is to facilitate and advance excellence in Earth and Space Science education. NESTA's purpose is the advancement, stimulation, extension, improvement, and coordination of Earth Science education at all educational levels. NESTA is an organization made up of and governed by classroom teachers, and extends its influence through association with other professional societies and organizations.

Visit our About NESTA pages to find out more about our organization. Links below the banner at the top of this page, as well as in the navigation panel to the left, provide links to NESTA resources and services. NESTA members can login in the box at the right to access resources available only to members, such as archived publications, The Earth Scientist, and NESTA News. NESTA members can update their personal information through My NESTA, and view the full calendar.

Membership in NESTA provides many benefits to Members. Find out more on our Membership Benefits page. We always welcome new members JOIN NESTA Today! NESTA membership also gets you a 50% discount on our partner, Educator membership in Windows to the Universe, the world's leading Earth and Space Science educational website. W2U provides a host of resources for you to use in the classroom, and valuable member benefits.

Science Store on Windows to the Universe website: Check out the science education store on the Windows to the Universe website. In addition to Windows to the Universe and NESTA resources, the store offers publications and DVDs from other providers. Windows to the Universe members get a 10% discount on store products.
Windows to the Universe
www.windows2universe.org

- One of the most widely-used online resources for Earth and Space Science (> 12 million users)
- Themes include: Sun, Earth, Solar System, Sciences, Culture, People, Just Fun
- Archived teacher workshops, PowerPoints, pdfs
- “Public” site contains ads, unable to print resources
- “Member” site lacks ad, allows printing, other privileges
The spinning vortex of Saturn's north polar storm resembles a giant deep red rose surrounded by green foliage in this false-color image from NASA's Cassini spacecraft. The eye is 2,000 kilometers across with cloud speeds as fast as 150 meters per second. It is not known how long this newly discovered north-polar hurricane has been active. The view was acquired at a distance of approximately 419,000 kilometers from Saturn.

NASA/JPL-Caltech/SSI

Attention Educator Member Teachers! Go to our special offers page for information about attractive upcoming professional development events next year. Not an Educator Member? Join Today!

Check out resources from our Affiliates.
These listservs provide a service where members post questions, responses, and discussion of materials related to the listserv(s) to which you are subscribing. New subscribers should keep in mind that joining a listserv means that you will be receiving ALL of these messages as they are posted. Please be prepared for an increase in the volume of email that you receive when joining a listserv. Also, anti-spamming software and/or settings on your email service provider will adversely affect your subscription to OMNI listservs. We thank you for your interest, and your participation, in OMNI. Look below the subscription form for information on the Math listserv from AMTNYS.

To SUBSCRIBE to one of these lists create a new email message addressed to listserv@listserv.oneonta.edu from the email account you wish the list to use with the following in the body:

```
SUBSCRIBE listname ANONYMOUS
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or

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SUBSCRIBE listname Full_Name
```

example: SUBSCRIBE ESPRIT Joe Smith

You will get a confirmation email. *Check your junk mail!

To UNSUBSCRIBE to one of these lists create a new email message addressed to listserv@listserv.oneonta.edu from the email account you are subscribed under with the following in the body:

```
SIGNOFF listname
```

example: SIGNOFF ESPRIT
‘Do-Now’ Daily Observations

- Sun/Moon/Rise/Set/Phases

- Current Weather & Weather Hazards
  http://www.weather.gov/
  Use search box to get local conditions

- Teaching Climate
  http://climate.gov/teaching

- Tide Predictions
  http://tidesandcurrents.noaa.gov/tide_predictions.html
“DataStreme” Courses
American Meteorological Society
http://www.ametsoc.org/amsedu/
- Free online courses in Fall & Spring
- 3 grad credits from SUNY Brockport

AMERICAN METEOROLOGICAL SOCIETY
DataStreme Atmosphere

DataStreme Ocean
American Meteorological Society

Earth's Climate System
American Meteorological Society
American Museum of Natural History Educational Programs

- [http://www.amnh.org/learn-teach](http://www.amnh.org/learn-teach)

- [Experiences for students & families](http://www.amnh.org/learn-teach)

- [Experiences for Educators](http://www.amnh.org/learn-teach)
Another Online Course for Teachers

“Seminars on Science”
American Museum of Natural History
http://www.amnh.org/learn-teach/educators/seminars-on-science-online-graduate-courses-for-teachers
6-week courses on a variety of topics

Basic fee to AMNH, with option to earn credit through cooperating institutions
NSTA – National Science Teachers Association

- [http://www.nsta.org/](http://www.nsta.org/)
- Online and print resources and journals
- National and Area Conferences
- Special STEM conferences
Science Standards & Curriculum Guidelines


“Next Generation Science Standards” - Achieve
American Geosciences Institute 
Education Programs 
www.americangeoscience.org/education

- Educational resources: 
  “Big Ideas in Earth Science”
  “Earth Science Week”
  “Center for Geoscience and Society”
  “Earth Science World Image Bank”, etc.

- Awards 
  Edward C Roy Award for Excellence in K-8 Teaching

- Curriculum materials—print, online
Educational Resources

AAPG/AGI Geoscience Handbook

This handbook, developed cooperatively by AGI and the American Association of Petroleum Geologists (AAPG), offers ideas and resources for geoscience professionals visiting classrooms, leading student field trips, and involving student research.

Big Ideas in Earth Science

Big Ideas videos bring to life the "big ideas" of Earth science—the nine core concepts that everyone should know. Teachers can use the videos in many ways.

Earth Science Week

Discover the resources offered through this international event, organized by AGI each October.

Earth Science World Image Bank

You'll find many images categorized by geoscience areas.
GEOPHYSICAL INFORMATION FOR TEACHERS (GIFT) WORKSHOPS

See the topics and presenters for this year's GIFT Workshop on our [GIFT 2014 page](http://education.agu.org/education-activities-at-agu-meetings/gift/).

ABOUT THE GIFT WORKSHOP

Geophysical Information for Teachers (GIFT) Workshops allow science teachers to hear about recent scientific developments in geophysics and explore how these developments can be brought into their classrooms.
Resources

Resources

Explore! Geoscience CD-ROMs

Posters

Nature of Science

Geologic Timescale

Free Lesson Plans

Free Geology Images

http://geosociety.org/educate/
Deep Earth Academy – Education resources based on scientific ocean drilling aboard the JOIDES Resolution

- [http://joidesresolution.org/node/3002](http://joidesresolution.org/node/3002)
- Online educational resources
  - More than 60 downloadable activities
- Teaching kits and core models
- Videos
- Interactives
- “School of Rock” (Teachers at Sea)
Tales of the Resolution Reading Activities

Summary:
Students use these questions to guide their reading of the Tales of the Resolution episodes focused on careers, technology, and science process exploration. They are designed to support Common Core State Standards for English & Literacy in Science.

Downloads and resources:
- Overview
- Teacher's Guide
- Student's Guide
- Supplemental resources:
  - Episode 1: Tales of the Resolution!
  - Episode 2: Re-Fit Madness
  - Episode 3: Resolution Reloaded
  - Episode 4: Arctic Rainforest
  - Episode 5: Choose Your Own Tales of the Resolution - Jobs on the JR
What suggestions can you offer?