

NASA SCIENCE MISSION DIRECTORATES
BEST of the BEST EDUCATIONAL WEB SITES

EARTH OBSERVATORY

Grades 6-graduate students & teachers

<http://earthobservatory.nasa.gov>

You can obtain NASA satellite imagery and scientific information about Earth, focusing on climate and environmental change from this Web site. Read feature articles on wide-ranging Earth system science topics and see the latest images, media alerts and summaries of Earth science headlines from radio, newspaper and television. This Experiment section includes classroom activities

DISCOVERY PROGRAM

Grades 5-12 students & teachers

<http://discovery.nasa.gov/education.html>

The Discovery Program's prime objective is to enhance our understanding of the Solar System by exploring the planets, their moons and small bodies such as comets and asteroids. Another important objective is to enhance public awareness of and appreciation for space exploration by incorporating educational and public outreach activities into planetary science investigations.

EARTH & SKY RADIO SERIES

Grades k-12 students & teachers

<http://www.earthsky.com> or order CD from NASA CORE at 1-866-776-2673

This award winning, daily, science radio series archives text and audio clips on this web site. Teacher resources and student activities are provided. Information on current science events can also be found at this site.

EARTH SCIENCE PICTURE OF THE DAY

Grades K-graduate students & teachers

<http://epod.usra.edu>

A new Earth science image is featured each day with an informative description detailing what is happening in the image, when and where it occurred, and other relevant information. An archive, begun in Sept 2000, is also maintained.

THE EARTH OBSERVING SYSTEM POSTERS

Grade 6-graduate students

http://eospsso.gsfc.nasa.gov/eos_homepage/for_educators/eos_posters/index.php

Explore the facets of the NASAS Earth Observing System (EOS) project with these informative posters. Each poster takes a specific top and explains what NASA scientists are doing to understand the topic. The topics include: AIR, WATER, LAND AND ICE. You can download the information as a PowerPoint file or PDF with color and black and white versions of all.

EARTH UPDATE

Grades 6-12 students & teachers

<http://mtpe.com/mtpe/spheres.html>

EARTH UPDATE is an interactive educational computer program, suitable for a stand-alone exhibit at a museum or school or as a CD resource for personal use. This linked set of six interactive real-time computerized modules (which can run independently or as a single exhibit) shows real-time data in five SPHERES: Air –ATMOSPHERE, Life –BIOSPHERE, Ice –CRYOSPHERE, Land –GEOSPHERE, Water –HYDROSPHERE.

EDUCATION MATERIALS FOR OCEANOGRAPHY AND EARTH SCIENCE

Grades k-12 teachers

<http://sealevel.jpl.nasa.gov/education/edudoc.html>

A comprehensive list of resources on oceanography and Earth Science are provided at this Web site.

EVERYDAY CLASSROOM TOOLS

Grades K-8 teachers

<http://hea-www.harvard.edu/ECT>

This Web site presents an inquiry based science curriculum, in html or PDF file format. It uses the pattern of change on planet Earth as it relates to the Sun as its theme for studying different subjects related to Earth's systems.

EXPLORING THE ENVIROMENT (ETE)

Grades 6-12 students & teachers

<http://www.cotf.edu/ete>

The ETE Web site features an integrated approach to environmental and Earth system science through problem based modules and activities.

FINDING IMPACT CRATERS WITH LANDSAT

Grades 6-8 teachers

<http://landsat.gsfc.nasa.gov/education/crater/>

In this classroom activity students learn about, research, interpret satellite images, and demonstrate their understanding of Earth impact features.

THE GATEWAY TO ASTRONAUT PHOTOGRAPHY OF EARTH

Grades k-16 teachers

<http://eol.jsc.nasa.gov>

This Web site contains images and descriptions of over 350,000 NASA photographs of Earth. Visitors may also view Space Shuttle orbit rack maps and calculate shuttle positions.

THE ADVENTURE OF ECHO THE BAT

Grades 6-8 students & teachers

Can be ordered from NASA CORE 1-866-776-2673
book #300.1-06P

<http://imagers.gsfc.nasa.gov>

This interactive Web site allows students to follow Echo the bat as he migrates through Arizona. It provides a foundation and introduction to remote sensing and the electromagnetic spectrum. A book with the story is also available on line or through NASA

NATIONAL GEOGRAPHIC ATLAS OF THE OCEAN: THE DEEP FRONTIER & TEACHER'S GUIDE

Grade 6-12 teachers

To order this book call 800-647-5463 or write to National Geographic Society, 1145 17 St NW, Washington, DC 20036.

The teacher guide can be downloaded at:

<http://www.divediscover.who.edu/expedition9/images/alienseduguide.pdf>

The book features more than 150 photographs, maps and satellite images, which are provided by NASA. Experts have contributed essays and sidebars on subjects. The 30-page teacher's guide features classroom activities that take the student on an underwater adventure exploring our oceans.

MISSION GEOGRAPHY

Grade k-12 teachers

<http://missiongeography.org>

Mission Geography is curriculum support materials that link the content, skills, and perspectives of Geography for Life: The National Geography Standards with the missions, research, and science of the National Aeronautics and Space Administration (NASA).

OCEAN WORLD

Grade 3-graduate students & teachers

<http://oceanworld.tamu.edu>

This Web site contains information about ocean processes. Links to other materials and sources of real-time data that can be used in the classroom are provided. The site also has complete college level and graduate courses in oceanography and physical oceanography.

PUMAS (Practical Uses of Math& Science)

Grade K-12 teachers

<http://pumas.jpl.nasa.gov>

PUMAS provides a collection of one-page examples in PDF format of how math and science are used in everyday settings.

GLOBE PROGRAM

Grade k-12 teachers

<http://www.globe.gov>

Students from all over the world are participating in the Global Learning and Observations to Benefit the Environment (GLOBE) program by taking daily environmental measurements at their schools and sharing their data via the Internet.

SIGNALS OF SPRING

Grade 6-8 students & teachers

<http://www.signalsofspring.net>

This presents a classroom program where students work in groups and use Earth imagery to explain the movement of animals that are tracked by satellites. It provides training for every teacher, either in person or on line. The materials are integrated and include lessons, classroom activities, 35 color and black and white transparencies, and special, interactive, online GIS and interactive 3-D maps and visualizations of animals and their migrations.

SPACE PLACE

PROJECT SkyMath: MAKING MATHEMATICAL CONNECTIONS

Grade 6-8 teachers

<http://eo.ucar.edu/skymath/>

This Web Page is designed for middle school mathematics teachers. It contains all of the information needed for teachers to use the 16 classroom activities of SkyMath, including the module itself. We believe that it is an effective and innovative way to present elements of the middle school mathematics curriculum.

SUNEARTH CONNECTION

Grades K-12 students & teachers

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

ECEF brings together the rich expertise of scientists, educators, and museums to develop innovative products and programs that share the exciting discoveries and knowledge from NASA Sun-Earth Connection missions and research programs with the public. From this site you can visit past Sun-Earth Day themes from 2002-2005.

VISIBLE EARTH

Grade 6-undergraduate students & teachers

<http://visibleearth.nasa.gov>

This Web site is a searchable directory of NASA Earth Science images and animations. Most resources are available digitally at multiple resolutions with captions and metadata.

WINDOWS TO THE UNIVERSE

Grade k-graduate students & teachers

<http://www.windows.ucar.edu>

This Web site includes a rich array of learning materials, background information, images, movies, animations, sounds, games, and data that bring science to life for students, teachers, and the interested user.

WORLD WATCHER: GLOBAL WARMING PROJECT

Grade 7-10 students & teachers

<http://science.hq.nasa.gov/education/catalog/resources/resources52.html>

Global warming and its potential impact provide the context for this unit, in which students learn about the scientific factors contributing to the debate. Students act

NASA HOME PAGE PORTAL

Grades k-graduate students & teachers

www.nasa.gov

For the portal page students and educators can find any information you are looking for about NASA and resources that are available.

NASA's KSNN™ (Kids Science News Network)

Grades K-5 students & teachers

<http://ksnn.larc.nasa.gov/home.html>

KSNN builds upon children's natural curiosity to introduce students in grades K-2 and 3-5 to the world of science, technology, engineering, mathematics, and NASA.

NASA CONNECT™

Grades K-12 students & teachers

<http://connect.larc.nasa.gov/episodes.html>

NASA CONNECT™ is an annual series of FREE integrated math, science, and technology programs for students in grades 6-8. Each program has three components: (1) a 30-minute television broadcast that can be viewed live or taped for later use, (2) an educator guide describing a hands-on activity, and (3) an interactive web activity that provides educators an opportunity to use technology in the classroom setting.

STARCHILD

Grades 4-14 students & teachers

<http://starchild.gsfc.nasa.gov/>

Star Child website is aimed at ages 4-14 and gives an introduction to the solar system, universe and space exploration. It includes activities, movies, puzzles and more.

NASA DISTANCE LEARNING

Grades k-16 teachers

<http://dlcenter.larc.nasa.gov/>

The six "cross-cutting," Emmy®-award-winning programs offered by the NASA Center for Distance Learning (CDL) "span the educational horizon" from grades K-12, through college (grades 13-18), to adult (lifelong) learners.

NASA DIGITAL LEARNING NETWORK

Grades K-14 teachers

<http://nasadln.nmsu.edu/dln/>

The goal of NASA's Digital Learning Network™ is to enhance NASA's capability to deliver unique content by linking customers with one or more NASA Centers in an integrated fashion. This coordinated digital learning network will let us better leverage NASA's unique content, facilities, and personnel so that we can provide students and educators at the pre-college and university levels across the Nation and around the world with a unique experience.

NASA's Destination Tomorrow™

Grades 9-graduate students & teachers

<http://destination.larc.nasa.gov/>

A television series for adults that gives the audience an inside look at NASA and demonstrates how research and technology relates to our everyday lives.

NASA SCI Files™

Grades 6-8 students & teachers

<http://scifiles.larc.nasa.gov/>

This Web site provides a series of science-focused broadcast, educator guides, and online PBL activities for grades 3-5.

CONTROL A RADIO TELESCOPE FROM THE CLASSROOM – GAVRT

Grades k-12 teachers

<http://deepspace.jpl.nasa.gov/dsn/gavrt/index.html>

The Goldstone Apple Valley Radio Telescope (GAVRT) is a program created by NASA's Deep Space Network - or DSN. DSN is an international network of antennas that supports spacecraft missions for the exploration of the solar system and the universe. GAVRT teaches students to use radio astronomy to control a huge antenna and collect science data from objects in the universe. GAVRT trains teachers, provides curriculum, and supports classroom implementation.

NASA EDUCATIONAL MATERIALS WEB LINK PAGE

Grades k-graduate teachers

<http://www.nasa.gov/audience/foreducators/topnav/materials/about/index.html>

NASA has an abundance of materials that will enhance many science-related subjects. The online versions of the educational materials may be printed and copied as

needed. Also, limited quantities of the published versions may be available through the NASA Educator Resource Center that serves your state. Use the Browse by Type, Grade Level or Subject buttons to the left to see what is currently available.

ASTRONOMY PICTURE OF THE DAY

K-graduate students & teachers

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

Each day a different image or photograph of our fascinating universe is featured, along with a brief explanation written by a professional astronomer.

EDUCATION MATERIALS BY SUBJECT

Grade K-12 teachers

<http://www.nasa.gov/audience/foreducators/topnav/materials/listbysubject/index.html>

List of education materials listed by subject.

SMART SKYS

Grade 5-9 students & teachers

http://quest.nasa.gov/projects/smart_skies/

Distance-Rate-Time Investigations in Air Traffic Control

NIGHT SKIES POSTER

Grade K-12 students & teachers

http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Night_Lights_Poster.html

This poster shows a global view of Earth at night, compiled from over 400 satellite images. Geography activities for K-12 classrooms are included.

LANDSAT

Grades k-12 students & teachers

<http://landsat.gsfc.nasa.gov/education/>

By virtue of its long history, Landsat's education and outreach program has spawned many educational resources. The effort continues with what will be the newest in this series of satellites, the Landsat Data Continuity Mission (LDCM). To enable educators seamless access to all of these resources, Landsat and LDCM education are united into one program, presented here. The goal is to enable educators to access and use the entire Landsat Program's data, imagery, and associated science content.

STARCHILD

Grades 6-8 students & teachers

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

StarChild is learning center for young astronomers with interactive activities on the solar system and the universe. There is information and activities found in StarChild, which can be used to engage, excite, and educate students in the classroom. In Educators can also find lesson plans, which show how StarChild can be used in your teaching - whether via the Web, on CD, or with pencil and paper.

THE NINE PLANETS

Grades 9-12 students & teachers

<http://seds.lpl.arizona.edu/billa/tnp>

This site is an overview of the history, mythology, and current scientific knowledge of each of the planets and moons in our solar system. Each page has text and images, some have sounds and movies, and most provide references to additional related information.

KIDS SPACE

Grades k-8 students & teachers

<http://www.nasa.gov/audience/forkids/home/>

Interactive kids page where you can test basic astronomy knowledge through puzzles, get basic space information, and tour a space art gallery.

AMAZING SPACE

Grades 6-12 students & teachers

<http://opposite.stsci.edu/pubinfo/education/amazing-space/>

Amazing Space is a set of web-based activities primarily designed for classroom use, but made available for all to enjoy. Here you can find out what light and color can tell you about stars, learn about the objects that make up the Solar System, or train to be a scientist by enrolling in the "Hubble Deep Field Academy."

SPACE ASTRONAUT INFORMATION ON THE WORLD WIDE WEB

Grades 6-graduate students & teachers

<http://www.jsc.nasa.gov/Bios/more.html>

This page is out of the Astronaut Office at NASA/Lyndon B. Johnson Space Center.
Integrated Launch Manifest from Kennedy Space Center

http://www.nasa.gov/mission_pages/station/structure/iss_manifest.html

This is a launch forecast of anticipated dates for the NASA Space Shuttle and NASA payloads on expendable vehicles. Unclassified launches by the U.S. Air Force are also shown. Commercial launches are not covered. It is an assessment of the earliest possible dates for upcoming government missions based on current planning or pre-launch preparations, and therefore, is not necessarily final.

THE BEST OF THE HUBBLE SPACE TELESCOPE

Grades k-graduate students & teachers

<http://www.seds.org/hst/hst.html>

This Web site provides a presentation and explanation of some of the best images taken by the Hubble Space Telescope.

THE ADVENTURES OF AMELIA THE PIGEON

Grades k-4 teachers

<http://imagers.gsfc.nasa.gov/amelia/index.html>

"The Adventures of Amelia the Pigeon" presents science concepts through metaphors and analogies that relate to inner-city life. The use of a pigeon as the vehicle for the web site provides a metaphor familiar to inner-city children, and Amelia is utilized to introduce the concept of perspective.

NASA GOODARD SPACE FLIGHT CENTER EDUCATIONAL RESOURCES

Grades k-14 students & teachers

<http://education.gsfc.nasa.gov/pages/listserv.html>

Keep track of educational resources at Goddard Space Flight Center by Subscribing TO THE GODDARD LISTSERV FOR YOUR STATE. Educators will receive information on new materials, resources, program, and presentation in your state or area. Subscription is of no cost or obligation and you can cancel at any time

EDUCATOR RESOURCE CENTERS

Grades k-graduate teachers

http://education.nasa.gov/about/contacts/Educator_Resource_Center_Network.html

The purpose of a NASA Educator Resource Center (ERC) is to help teachers learn about and use NASA's educational resources. Personnel at Arcs located throughout the United States work with teachers to find out what they need and to share NASA's expertise. The

ERCs provide educators with demonstrations of educational technologies such as NASA educational Web sites and NASA Television. ERCs provide in-service and pre-service training utilizing NASA instructional products. Educators also have the opportunity to preview, copy, and receive NASA instructional products.

OUR EARTH AS ART

Grades k-graduate students & teachers

<http://earthasart.gsfc.nasa.gov/index.htm>

Here you can view our planet through the beautiful images taken by the Landsat-7 satellite - and most recently, the Terra Satellite's Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER). This gallery of images uses the visceral avenue of art to convey the thrilling perspective of the Earth that satellites provide to the viewer.

LANDSAT 7 DATA SETS

Grades k-graduate teachers

<http://l7downloads.gsfc.nasa.gov/index.htm>

Landsat 7 data sets and .lan files for use with Multispec.

FINDING LOCATING AND MAKING SUB-SETS

Grades k-graduate teachers

<http://change.gsfc.nasa.gov/create.html>

This document is intended to help users find, download, and use free Landsat data for almost any land surface in the world using a freeware software program, MultiSpec©.

DOWNLOAD MultiSpec FOR WINDOWS

Grades k-graduate teachers

http://cobweb.ecn.purdue.edu/~biehl/MultiSpec/download_win.html

MultiSpec© is distributed without charge. MultiSpec (©Purdue Research Foundation) is a processing system for interactively analyzing Earth observational multispectral image data such as that produced by the Landsat series of Earth satellites and hyperspectral image data from current and future airborne and spaceborne systems such as AVIRIS.

SCIENTIFIC VISUALIZATION STUDIO

Grades K-graduate teachers

<http://svs.gsfc.nasa.gov/>

All the visualizations created by the SVS (currently totaling over 2,700) are accessible to you through this

Web site. More recent animations are provided as MPEG-1s and MPEG-2s. Some animations are available in high definition as well as NTSC format

ASTROBIOLOGY EDUCATION POSTER

Grades k-12 teachers

<http://nai.arc.nasa.gov/poster>

The front of this poster illustrates in words and pictures the three fundamental questions addressed by astrobiology: What is life? Where is it? How do you find it? Three activities have been developed to explore these themes, which are listed, on the back of the poster.

ASTRO-VENTURE

Grades 5-8 students & teachers

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

Astro-Venture is an educational, interactive, multimedia Web environment highlighting NASA careers and astrobiology research in the areas of Astronomy, Geology, Biology and Atmospheric Science. Students in grades five through eight are transported to the future where they role play NASA occupations and use scientific inquiry, as they search for and build a planet with the necessary characteristics for human habitation. Supporting activities include chats with real NASA scientists, online collaborations, classroom lessons, student publishing area and occupations fact sheets and trading cards.

NASA FACT SHEETS

Grades k-graduate teachers

http://eosps0.gsfc.nasa.gov/ftp_docs/AIRS

At this site you will find links to information sheets on a wide range of educational information, which related to each centers mission force – from hurricanes to space travel find a fact sheet to enhance your lessons.

DESTINATION EARTH

Grades k-12 students & teachers

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

Website dedicated to understanding and protecting our home planet. Find activities and links related to earth science.

SCIENCE@NASA

Grades k-graduate students & teachers

<http://science.hq.nasa.gov/>

Scientific mission directorate website dedicated to reporting the latest science mission news.

MICROBIAL LIFE EDUCATIONAL

Grades k-graduate teachers

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

This site contains a variety of educational and supporting materials for students and teachers of microbiology. You will find information about microorganisms, extremophiles and extreme habitats, as well as links to online resources, teaching and learning activities.

STARGAZERS

Grades

<http://stargazers.gsfc.nasa.gov/>

Welcome to Stargazers, Solar Terrestrial Probes and Living With a Star Programs Education and Public Outreach website. Join us for a heliophysics (study of the Sun) experience marked by excitement, research opportunities, hands-on workshops and outreach programs.

Student Observation Network DVD

TRADITIONS OF THE SUN

Grades k-12 students & teachers

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

Traditions of the Sun: The Yucatan. Visit the great Mayan cities of Chichen Itza, Uxmal, Dzibilchaltun, Mayapan, and others. Learn about Mayan astronomy, history, culture, and science.

NASA's CENTRAL OPERATION

Grades k-graduate teachers

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

Central Operation of Resources for Educators (CORE) is a worldwide distribution center for NASA's educational multi-media. For a minimal fee, NASA CORE will provide educators with materials through its mail order service. Educational materials available include videotape programs; slide sets, computer software, and CD-ROMS. These materials are designed to supplement classroom instruction and increase awareness and understanding of NASA's scientific research and technology and provide a historical account of NASA's accomplishments.

NATIONAL SPACE GRANT COLLEGE and FELLOWSHIP PROGRAM

Grades k-graduate teachers

<http://www.hq.nasa.gov/spacegrant>

The National Space Grant College and Fellowship Program contributes to the Nation's science enterprise by funding research, education, and public service projects through a national network of 52 university-based Space Grant consortia.

SOLAR SYSTEMS AMBASSADORS PROGRAM

Grades k-graduate teachers

<http://www2.jpl.nasa.gov/ambassador/>

The Solar System Ambassadors Program is a public outreach program designed to work with motivated volunteers across the nation. These volunteers communicate the excitement of JPL's space exploration missions and information about recent discoveries to people in their local communities. There are now 494 Ambassadors in 50 states, Washington DC and Puerto Rico bringing the excitement of space to the public.

NASA Quest Home

Grades k-12 teachers

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

NASA GUEST connects k-12 classrooms with people, research, and science through mission-based interactions and activities.

NASA BRAINBITES

Grades k-graduate students & teachers

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

NASA Brain Bites munchies for your mind, video answers to many questions people have about a wide range of topics.

MAGNETIC FIELD ACTIVITIES FOR THE HIGH SCHOOL CLASSROOM

Grades 9-12 teachers

<http://istp.gsfc.nasa.gov/istp/outreach/ed>

Lesson, which helps students understand the vector nature of fields, the ubiquity of fields in the environment, & the 3-dimensionality of fields. Activities include mapping the magnetic field of a room, making a magnetometer, & studying plasma. (NASA)

RADIO JOVE PROJECT

Grades 8-12 students & teachers

<http://radiojove.gsfc.nasa.gov/>

Planetary Radio Astronomy for Schools helps students & amateur scientists observe & analyze natural radio emissions of Jupiter & the Sun. Through the study of their magnetic fields & their plasma (charged particle) environments, we are better able to understand the Earth.

TIMELINE OF THE UNIVERSE

Grades 5-12 teachers

<http://origins.jpl.nasa.gov/library/poster/poster.html>

This Web site provides an online tutorial that traces the 15-billion-year history of the universe. It starts with the Big Bang & discusses the formation of elements in stars, planetary systems, Earth-like planets, & Jupiter-like planets. The "chemistry of life" is also examined.

NASA's EARTH OBSERVING SYSTEM - GLOBAL CHANGE MEDIA DIRECTORY 2001

Grades k-graduate teachers

<http://science.hq.nasa.gov/education/catalog/resources/resources127.html>

This publication contains an alphabetical list of NASA Earth Observing System researchers, with contact information and their areas of expertise. It also contains indices for areas of expertise and location, as well as media resources and public affairs contacts. An online version of the directory is titled Global Change Experts.

EDUCATION RESOURCES FOR OCEANOGRAPHY AND EARTH SCIENCES

Grades k-graduate teachers

<http://sealevel.jpl.nasa.gov/education/edudoc.html>

A comprehensive list of resources on oceanography and Earth Sciences are provided at this Web site.

GEOMORPHOLOGY FROM SPACE: A GLOBAL OVERVIEW OF REGIONAL LANDFORMS

Grades 9-16 students & teachers

<http://sealevel.jpl.nasa.gov/education/edudoc.html>

Order CD# 400.0-87 from NASA CORE at 1-866-776-2673

The core of this online NASA book and CED is a gallery of space imagery consisting of 237 plates, each treating a geographic region where a particular landform theme is exemplified. Commentary, photographs, locator

maps, and sometimes a geologic map accompany each plate.

GOES HURRICANE LINDA

Grades 9-graduate students & educators

<http://www.gsfc.nasa.gov/gsfc/service/gallery/lithos/goes-linda.pdf>

A NASA/NOAA GOES (Geostationary Operational Environmental Satellite) image of Hurricane Linda as it approached Baja, CA on September 12, 1997, as shown on this lithograph. A brief explanation of how hurricanes are formed and a classroom exercise are included on the back.

THE JAMES WEBB SPACE TELESCOPE

Grades 8-graduate students & teachers

<http://www.jwst.nasa.gov/index.html>

The James Webb Space Telescope project is committed to taking the public along on the ride to understand the origins of our Universe. The James Webb Space Telescope (JWST) is an orbiting infrared observatory that will complement and extend the discoveries of the Hubble Space Telescope, with longer wavelength coverage and greatly improved sensitivity. Multimedia and activities can be found on this Web site.

IMAGINE THE UNIVERSE

Grades 9-12 students & teachers

<http://imagine.gsfc.nasa.gov>

This site, a service of the Exploration of the Universe Division at NASA/Goddard Space Flight Center, is intended for students age 14 and up or anyone interested in learning about our universe. It covers such topics as black holes, gamma rays and cosmology and includes the Ask an Astrophysicist service where scientists answer questions from the public.

NASA SPACE SCIENCE EDUCATION RESOURCE DIRECTORY

Grades k-graduate teachers

<http://teachspace.org>

This site offers a convenient way to find NASA space science products for use in classrooms, science museums, planetariums, and other settings. It is searchable by topic or grade.

ORIGINS EDUCATION FORUM

Grades 9-12 teachers

<http://origins.stsci.edu/>

The Education Forum is the public gateway to the research results, the data, the information, and the human expertise behind NASA missions to understand our origins. Origins is the scientific study of the long chain of events from the birth of the universe in the Big Bang, through the formation of galaxies, stars, and planets, and the chemical elements of life to the profusion of life.

UNIVERSE EDUCATION FORUM

Grades 3-12 teachers

<http://www.cfa.harvard.edu/seuforum/>

The Universe Education Forum works with NASA missions and research partners to create exciting and substantive learning experiences for students, teachers, museums, and the public. This site contains a multimedia tutorials, and lesson plans.

NEO

Grades 6-12 students & teachers

<http://neo.sci.gsfc.nasa.gov>

NEO -- NASA Earth Observations is a tool to help you picture climate change and environmental changes happening on our home planet. Here you can search for and retrieve satellite images of Earth. Download them; export them to GoogleEarth: order/retrieve NASA data with a click. Tracking regional and global changes around the world just got easier!

HURRICANE EDUCATION

Grades k-14 students & teachers

http://www.nasa.gov/mission_pages/hurricanes/features/hurricane_educ_links.html

The research into hurricanes is not only useful to scientists trying to unlock their mysteries, but to everyone else who has an interest in them. NASA has developed several educational tools including posters, visualizations and graphics, classroom activities on hurricanes.

INFRARED ASTRONOMY TUTORIAL

Grades k-12 students & teachers

http://coolcosmos.ipac.caltech.edu/cosmic_classroom/ir_tutorial/

Examines infrared light, how it was discovered, infrared

astronomy, atmospheric windows, & more. An infrared astronomy timeline is included, along with links to news & discoveries, images, & classroom activities. (NASA)

SEEING THE INVISIBLE

Grades 7-9 students & teachers

<http://image.gsfc.nasa.gov/poetry//higley.html>

This Web site offers a guide & workbook to help students discover that the sun emits light in wavelengths outside the visible region of the electromagnetic spectrum. Activities allow students to view unique features of the Sun that are revealed only by certain spectral wavelengths of light. (NASA)

SOLAR STORMS & YOU

Grades 6-8 students & teachers

<http://sunearth.gsfc.nasa.gov/class6-8.htm>

This is a series of 6 workbooks on solar activity & sunspots, solar wind, magnetic storms, aurora, & satellite design.

EARTH EXPLORERS SERIES

Grades k-12 students & teachers

http://science.hq.nasa.gov/education/earth_explorers/index.html

This Web site profiles an atmospheric scientist who flies through hurricanes, an engineer who operates a spectro-radiometer (an instrument on a satellite), an ocean scientist, high school students whose science fair project took them to Croatia, and other "Earth explorers".

EARTH MAGNETIC FIELD

Grade 1-12 students & teachers

<http://image.gsfc.nasa.gov/poetry/>

The goal of the IMAGE mission's education and public outreach program (POETRY) is to explain how solar storms affect the Earth, and to correct misconceptions about Earth's magnetic field, its radiation belts, and why we have aurora.

GRAVITY PROBE B

Grades 9-12 students & teachers

<http://einstein.stanford.edu/>

Gravity Probe B is a "relativity gyroscope" experiment designed to test two unverified predictions of Albert Einstein's general theory of relativity.

SPACE PLACE

Grade k-12 students & teachers

<http://spaceplace.jpl.nasa.gov>

This Web site provides fun activities for children to do and things for them to make while they learn about space and Earth science and the technology that enables science. The “Goodies for teachers” area contains curriculum supplements originally published in the ITEA journal, The Technology Teacher.

STUDENTS’ CLOUD OBSERVATION ON LINE (S’COOL)

Grade 3-12 students & teachers

<http://asd-www.larc.nasa.gov/SCOOL/>

This Web site provides information on the project, how to participate, and classroom materials and resources. Students make ground truth measurements for NASA’s Clouds and the Earth’s Radiant Energy System (CERES) experiment.

TEACH EARTH.COM

Grade k-16 teachers

<http://www.teachearth.com>

This Web site provides resources and programs for teaching and learning about Earth system science – how our air, land, water and life are an interconnected system.

MESSENGER EDUCATION AND PUBLIC OUTREACH

Grades 6-12 students & teachers

<http://btc.montana.edu/messenger/main/epo.php>

In developing this site, writers, filmmakers, educators, scientists, and engineers are working together to bring the exciting science of MESSENGER to everyone. Here you will find a wealth of resources about the planet Mercury and about the MESSENGER mission. By studying Mercury, we look at the diversity of worlds and add to the knowledge base about the Solar System, its formation, and evolution.

PLANETARY PHOTOJOURNAL

Grades k-graduate students & teachers

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

The planetary photojournal website allows for easy access to photo images of the planets, comets, satellites and other space related objects.

GIOVANNI

Grades k-graduate teachers

<http://daac.gsfc.nasa.gov/techlab/giovanni/>

Giovanni is a Web-based application developed by the GES DISC that provides a simple and intuitive way to visualize, analyze, and access vast amounts of Earth science remote sensing data without having to download the data.

ACT NOW

Grades k-graduate students & teachers

NASA Education’s Act Now page highlights upcoming NASA opportunities available for teachers and students. The Act Now for Educators section features information about upcoming workshops, grants, online activities, faculty fellowships and conferences in one location, making it easy for educators to find opportunities that interest them. “NASA and You” will inform students about upcoming NASA events, contests, internship opportunities, webcasts and much more.

Act Now for Educators:

<http://www.nasa.gov/audience/foreducators/topnav/actnow/index.html>

Act Now for K-4 Students:

http://www.nasa.gov/audience/forstudents/k-4/home/Act_Now_Students.html

http://www.nasa.gov/audience/forstudents/k-4/home/Act_Now_Students.html

Act Now for 5-8 Students:

http://www.nasa.gov/audience/forstudents/5-8/features/Act_Now_Students.html

Act Now for 9-12 Students:

http://www.nasa.gov/audience/forstudents/9-12/features/Act_Now_Students.html

Act Now for Post-Secondary Students:

http://www.nasa.gov/audience/forstudents/postsecondary/features/Act_Now_Students.html