

From: Nancy Alima Ali <nancyali@hawaii.edu>
Subject: Fwd: New Education Materials Available at NASA.gov
Date: August 19, 2008 10:51:26 AM HST
To: HaSTA Mailing List <hasta-l@hawaii.edu>

FYI,
A variety of new earth and space science resources are available through NASA Education. See info and links below.

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Begin forwarded message:

From: NASA Education <education@nasa.gov>
Date: August 18, 2008 5:46:59 AM HST
To: nancyali@hawaii.edu
Subject: New Education Materials Available at NASA.gov
Reply-To: education@nasa.gov

The Educational Materials section of NASA's Web site offers classroom activities, educator guides, posters and other types of resources that are available for use in the classroom. Materials are listed by type, grade level and subject. The following items are now available for downloading.

Getting Dirty on Mars -- Grades 5-12

The Mars Phoenix lander is digging through the soil of the Red Planet and collecting samples. In this activity, students will:

- Work in cooperative groups to collect soil samples from the field, just as NASA's robotic Phoenix Mars Mission collects samples on the Red Planet.
- Understand the properties of soils.
- Examine soils for their ability to sustain organisms.

Students will measure the soil moisture content, compare soil colors, look for biomarkers and measure pH to make their comparisons. They will then present a "Soil Properties Report."

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

Exploring Space Through Algebra -- Grades 7-12

Algebra is an essential component of contemporary mathematics and its application in many fields. Exploring Space through Algebra will help students develop a deeper understanding of key algebraic concepts, and they will learn how to apply those concepts in the context of space exploration. This project can be a valuable supplemental component to the Algebra I and II and geometry curriculum as it exposes students to the limitless options in science, technology, engineering and mathematics fields.

The focus of Exploring Space Through Algebra publications is to promote inquiry through real-world applications. Doing so places students in the role of NASA scientists, engineers and researchers. This placement promotes cooperative learning by exposing students to more problem-solving ideas and demonstrates how NASA scientists, engineers and researchers work in teams to accomplish tasks.

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

Space Exploration AP -- Grades 11-12

Each year, an increasing number of high schools turn to the Advanced Placement Program as a model of educational excellence. These advanced students require challenging materials to keep them focused on their studies and to help give them insight into the limitless array of options in science, technology, engineering and mathematics fields.

NASA's Space Exploration AP project provides challenging supplemental problems, based on space exploration topics, for students in AP classes. These problems are formatted to practice for the "free response" section of an AP exam. This project engages students by providing real-world applications to promote problem-solving ideas and expose students to careers working in space exploration.

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

The Courage to Soar Educator Guide -- Grades 3-5

This integrated unit allows students to conduct scientific experiments, construct aircraft models, and read selections and research topics about aviation. The 23 lessons in this guide support national math, science, technology, geography and language arts standards. The lessons have built-in assessment opportunities. Students will build sled kites, rotor motors, foam airplanes, straw aircraft and a model X-43 glider. They will also experiment with air, gravity, lift, thrust and drag. Some activities include vocabulary lists and reading selections.

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

Additional Video Learning Clips Added

The educational video clips listed below have been added to the Videos section of the NASA Educational Materials site. Click on the link below each list of video clips to access the videos online.

Targeting students in grades K-8, the Wall-E Learns About Proportion Video lets students calculate the diameter of the moon with the help of Wall-E. In this video, the mischievous robot learns that the Lunar Reconnaissance Orbiter is mapping the moon. From Earth, the moon looks too small to land on. Wall-E learns to use math to determine the size of the moon. The moon is compared to the size of a baseball, and Earth is compared to the size of a basketball.

http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Wall-E_Learns_About_Proportion.html

Designed for students in grades K-8, these video clips from the NASA Science Files™: The Case of the Barking Dogs DVD invite students to join the Tree House Detectives as they investigate the "Case of the Barking Dogs." The Tree House Detectives accept the challenge of determining why dogs in the surrounding neighborhoods have unexpectedly started barking early in the morning and late at night. Using scientific inquiry, the detectives discover what is causing the neighborhood dogs to bark. In determining the "why," the detectives learn about sound: what it is, how it is transmitted, and how humans and animals hear. While solving the case, the Tree House Detectives learn that determining the source of the barking requires the use of logic and "sound" reasoning.

Titles in this series:

- The Case of the Barking Dog, Episode 1.
- The Case of the Barking Dog, Episode 2.

- The Case of the Barking Dog, Episode 3.
- The Case of the Barking Dog, Episode 4.
- Problem Solving Using the Scientific Method.
- Investigating the Properties of Sound.
- Following the Scientific Method: Collecting, Organizing, and Analyzing Data.
- Our Ears and How They Work.
- The Effect of Sound Levels on the Human Ear.
- The Hearing Ability of Dogs.
- NASA's Anechoic Chamber for Sound Research.
- Experimenting With Echoes.
- Variables That Affect the Speed of Sound.
- Understanding Sonic Booms.
- How and Why Bats Use High Frequency Sounds to Navigate.
- Demonstrating the Difference Between High and Low Frequency Sounds.

http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/The_Case_of_the_Barking_Dog_Episode_1.html

The video clips in the NASA Science Files™: The Case of the Technical Knockout DVD series are designed for students in grades K-8. In today's world of high-tech devices, the Tree House Detectives discover that technology has its flaws when everything electronic stops working. Eager to solve the problem of this electronic blackout, the detectives follow the wind to the nearest star...the sun.

Titles in this series:

- Navigational Uses for Global Positioning Systems, or GPS.
- Early Navigation, How Was It Done?
- How Do Global Positioning Systems, or GPS, Work?
- Radar, Radio Waves and Light.
- What Is Electricity?
- Experimenting With Electromagnets.
- Earth's Role as an Electromagnet and the Creation of Auroras.
- NASA's Research on the Sun.
- All About Solar Flares.
- What Are Geomagnetic Storms?

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

Targeting students in grades K-8, these video clips from the NASA Science Files™: The Case of the Wright Invention DVD follow along as the Tree House Detectives learn about inventors and inventions. The Tree House Detectives learn about the design process by visiting a NASA researcher at his workplace. They also learn how important it is for inventors to document their work.

Titles in this series:

- The Design Process.
- Helios Aircraft.
- Importance of Documenting Inventions.

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

Designed for students in grades K-8, these video clips from the NASA Science Files™: The Case of the Phenomenal Weather DVD follow the Tree House Detectives as they plan a trip to the Caribbean and encounter problems trying to predict the weather. In this case, the Tree House Detectives will learn about violent storms such as hurricanes and tornadoes, weather fronts, global wind patterns, and climates. While solving the case, they will discover that predicting the weather is not predictable at all!

Titles in this series:

- Learning About Clouds and How They Are Formed.
- Air Pressure and Tropical Storms.
- Experiencing the Energy of Hurricane Force Winds.
- Can the Size of Tropical Storms Be Predicted?
- Hurricane Hunters: The Work of Weather Reconnaissance.
- Hurricane Andrew Survivors Describe Their Experience.
- Predicting the Probability of Tornadoes and Hurricanes.
- How Weather Data Is Collected.
- Dr. Textbook Explains the History of Hurricane Research.
- How Scientists Predict Hurricanes Today.

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

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