

Workshop Focus

This workshop is intended for teachers of 9-12th grades, will provide hand-on experience with five inquiry, NASA-developed units which are aligned with the Florida State Science Standards. The emphasis of the workshop will be on magnetism, with strong earth science, astronomy, and mathematics components.

Workshop participants will experience the guide activities as their students would, with additional information about the THEMIS science, recommendations for materials, and tips for teaching activity-based curriculum.

After the workshop, there will be a tour of the Kennedy Space Flight Center including a visit to the visitor's center.

For more details about the workshop, open up the flyer (or read page two of the electronic document).

To Register for the Workshop

Visit the URL:

<http://cse.ssl.berkeley.edu/workshops>

Find this workshop (on February 13th) on the list of workshops.

Click on the "register" link and fill out the form.

We will email you a confirmation email one week before the workshop.

What is THEMIS?

NASA's Time History of Events and Macroscale Interactions during Substorms (THEMIS) mission plans to unravel the tantalizing mystery behind auroral substorms, an avalanche of magnetic energy powered by the solar wind that intensifies the northern and southern lights. THEMIS will help us understand how and why these space storms create havoc on satellites, power grids, and communication systems. – NASA website.

What it means to have THEMIS launch

THEMIS consists of five identical probes, the largest number of scientific satellites ever launched into orbit aboard a single rocket. THEMIS is scheduled to liftoff on February 15 aboard a Delta II rocket from Launch Complex 17-B on Cape Canaveral Air Force Station, Fla. – NASA Press Release

The workshop is funded by the Education and Public Outreach Program of NASA's THEMIS Mission at University of California in Berkeley, Space Sciences Laboratory.

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The launch of NASA's five THEMIS probes is about to occur!



FREE THEMIS Workshop

(Lunch included!)

February 13th, 2007
9:30 a.m. to 2:30 p.m.
Cape Canaveral, FL

Featuring these four
NASA THEMIS
Teacher Guides:

Exploring Magnetism

Magnetism and
Electromagnetism

Exploring Magnetism on
Earth

Space Weather

Florida Science Education Standards

Force and Motion (SC.C.2.4); the student describes how magnetic force and electrical force are two aspects of a single force.

Processes that Shape the Earth (SC.D.1.4); the student knows that the solid crust of Earth consists of slow moving, separate plates that float on a denser, molten layer of Earth.

Earth and Space (SC.E.2.4); the student knows the various ways in which scientists collect and generate data about our universe.

The Nature of Science (SC.H.1.4); the student knows that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories. The student knows that ... often the changes that take place in the body of scientific knowledge are small modifications of prior knowledge.

National Science Education Standards

Science as inquiry; USE TECHNOLOGY AND MATHEMATICS TO IMPROVE INVESTIGATIONS AND COMMUNICATIONS

Physical Science; MOTIONS AND FORCES: Electricity and magnetism are two aspects of a single electromagnetic force. Moving electric charges produce magnetic forces, and moving magnets produce electric forces. These effects help students to understand electric motors and generators.

History and Nature of Science; SCIENCE AS A HUMAN ENDEAVOR and HISTORICAL PERSPECTIVES

Workshop Details

Target Audience: Teachers of 9-12th grades who are interested in improving their classroom science instruction around magnetism.

Cost: The workshop costs are free, including lunch.

Workshop Location: The workshop will be held at the Radisson Resort in Cape Canaveral, Florida in the Bermuda Room.

Workshop Dates and Times: February 13, 9:30 a.m. to 2:30 p.m.

For those who are interested: From 2:30pm until about 5:30pm, there will be a tour of the Kennedy Space Flight Center including a visit to the visitor's center. Transportation via bus will be included.

Number of Participants: We can accommodate up to 25 participants for this workshop.

Participants Will Receive

- Hands-on experience with activities in four NASA-developed magnetism guides, including three from the THEMIS program.
- A CD-ROM with all the guides, the presentation (in PowerPoint and Acrobat Reader PDF formats) and additional background materials.
- A solar poster and several informational flyers about the THEMIS mission.
- Free Lunch

Workshop Presenters

From the Center for Science Education at the Space Sciences Laboratory at the University of California, Berkeley

Nahide Craig, Astronomer and THEMIS Education and Public Outreach Lead

Laura Peticolas, Space Physicist and THEMIS Education and Public Outreach Co-Lead

Florida Mathematics Education Standards & National Mathematics Education Standards

Number Sense, Concepts, and Operations (MA.A.3.4); the student adds, subtracts, multiplies, and divides real numbers, including square roots and exponents, using appropriate methods of computing, such as mental mathematics, paper and pencil, and calculator.

Measurement (MA.B.2.4); the student selects and uses direct (measured) or indirect (not measured) methods of measurement as appropriate. The student solves real-world problems involving rated measures. Measurement (MA.B.3.4); the student solves real-world and mathematical problems involving estimates of measurements, including length, time, weight/mass, temperature, money, perimeter, area, and volume, and estimates the effects of measurement errors on calculations.

Algebraic Thinking (MA.D.1.4); the student describes, analyzes, and generalizes relationships, patterns, and functions using words, symbols, variables, tables, and graphs.

Data Analysis and Probability (MA.E.1.4); the student interprets data that has been collected, organized, and displayed in charts, tables, and plots. Student calculates measures of central tendency (mean, median, and mode). Student analyzes real-world data and makes predictions of larger populations by applying formulas to calculate using appropriate technology, including calculators.