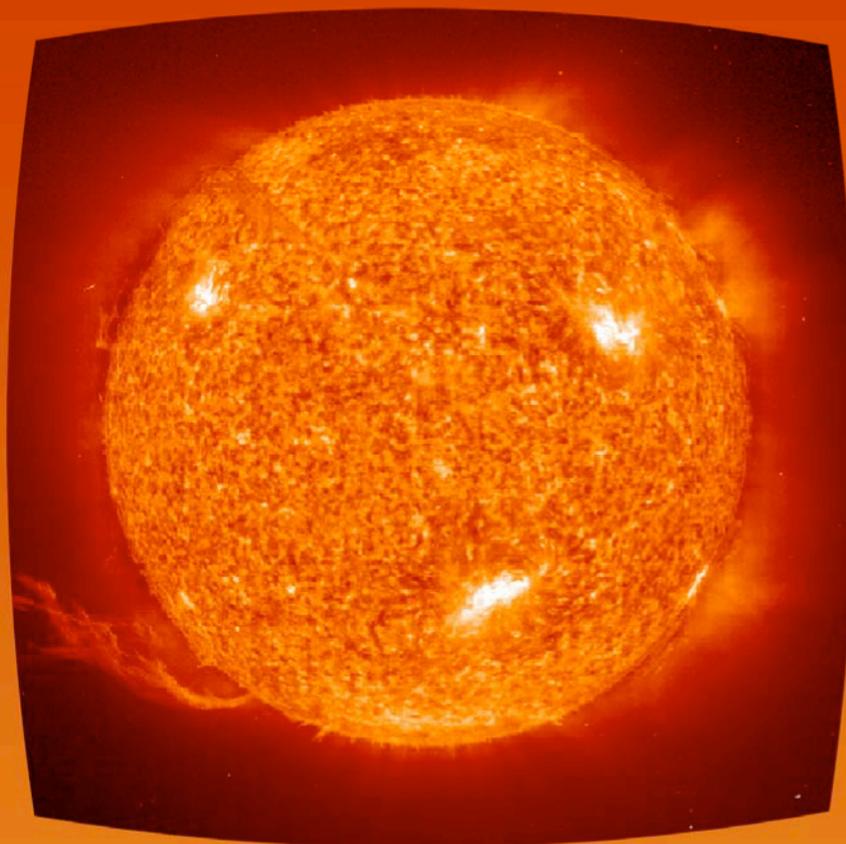


**Looking for ideas to get your students  
excited about math and science?**

**The Department of Energy provides many  
resources to inspire and engage your students.**

**And we've made those  
resources easy to find ...**



**The Democratic Caucus of the House Committee on Science Presents:**

## **DOE Resources for Teachers**

**<http://sciencedems.house.gov/resources/DOEresources.htm>**

**Prepared at the direction of Representative Mark Udall,  
Member, House Committee on Science**



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*The United States at Night  
Image courtesy of NOAA*

The outline below and the pages that follow detail the variety of DOE information located at 'Science Education & You' on <http://sciencedems.house.gov>.

Our website further breaks down the categories listed to help you easily find useful educational tools and resources.

Resources for Teachers

General Websites

Visual Resources

Regional Educational Resources

DOE Opportunities for Schools and Classrooms

Resources for Students

K-8 Resources

High School Resources

Undergraduate and Graduate Resources

Amazing Images

Fun and Games

Younger Kids

Older Kids (and Adults)



*Image courtesy of DOE*

## DOE General Websites

### DOE Educational Resources

This DOE website is designed to help students, teachers and the public access the vast array of educational materials produced by the agency.

Age-specific and topic-specific categories contain exciting educational programs and materials that DOE makes available to the public.



*Photo courtesy of DOE*

Website: [http://www.energy.gov/engine/content.do?BT\\_CODE=TEACHERSSTUDENTS](http://www.energy.gov/engine/content.do?BT_CODE=TEACHERSSTUDENTS)

### DOE Kids Zone



*Image courtesy of DOE*

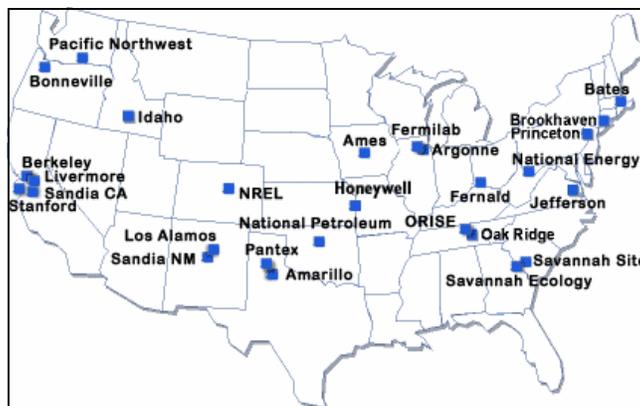
This DOE website serves as a portal through which kids can access energy-related educational resources. By selecting the technique that best matches their preferred learning style, kids will find a great deal of energy information at Kids Zone.

Website: [http://www.energy.gov/engine/content.do?BT\\_CODE=KIDS](http://www.energy.gov/engine/content.do?BT_CODE=KIDS)

### Educational Offerings from DOE Labs and Facilities

The Department of Energy's numerous labs and facilities provide excellent educational materials to educators and students. Visit the website below to access a comprehensive list of links to each of the participating DOE facilities across the country.

Website: <http://www.er.doe.gov/feature/WDTS-map/WDTS-map.htm>

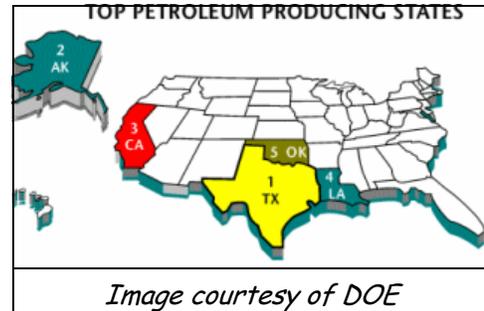


*Image courtesy of DOE*

## EIA's Energy Page for Kids

The Energy Information Administration (EIA), a statistical agency of DOE, provides educational material for kids of all ages. Learn about the sources and uses of energy and access quizzes, puzzles and facts about famous people in energy fields.

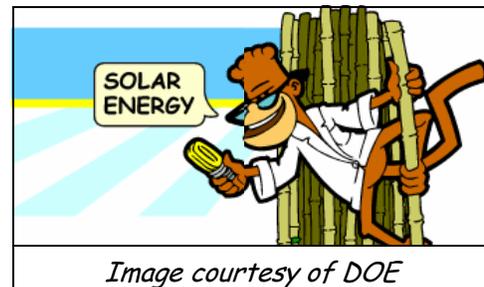
Website: <http://www.eia.doe.gov/kids/>



## Dr. E's Energy Lab

DOE's Office of Energy Efficiency and Renewable Energy offers this entertaining kids page with information ranging from wind, geothermal and solar energies to alternative fuels and energy efficiency. Complete with puzzles, mazes, crosswords, workbooks and more, Dr. E's Energy Lab is sure to entertain and energize learning.

Website: <http://www.eere.energy.gov/kids/>



## Internships and Careers with DOE

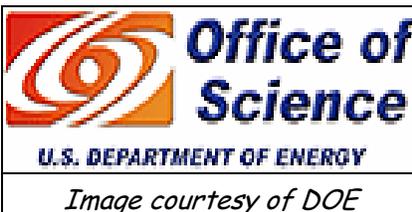
Interested in becoming an intern with the Department of Energy? How about seeking a career or pursuing various fellowship opportunities with DOE? This website serves as your one-stop shop for DOE employment-related questions.

Website: [http://www.energy.gov/engine/content.do?BT\\_CODE=EDG1360](http://www.energy.gov/engine/content.do?BT_CODE=EDG1360)



## Office of Science

DOE's Office of Science is the single largest supporter of basic research in the physical sciences in the U.S. Their education webpage serves as a doorway through which numerous science and energy-related education pages may be accessed.



Webpage: [http://www.er.doe.gov/Sub/For\\_Kids/For\\_Kids.htm](http://www.er.doe.gov/Sub/For_Kids/For_Kids.htm)

# DOE Visual Resources

## Roofus' Solar and Efficient Home

Explore Roofus' energy efficient home and learn ways to maintain energy efficiency in your own house. From Energy Star appliances and compact fluorescent light bulbs to information on energy efficient windows and insulation, Roofus provides both kids and adults with intriguing energy-related information.

Website: <http://www.eere.energy.gov/kids/roofus>



*Image courtesy of DOE*

## Jefferson Lab Student Zone

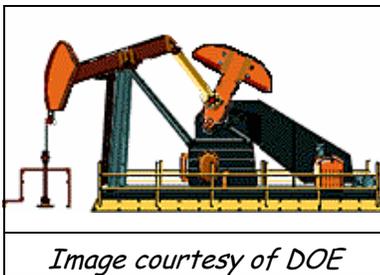
Jefferson Lab, a DOE center for both basic and applied research, provides a large number of online games and puzzles in their Student Zone. Play element concentration, speed math, crossword puzzles, vocabulary hangman, "Who wants to win \$1,000,000?" and other educational games at this interactive website.

Website: <http://education.jlab.org/indexpages/index.html>



*Image courtesy of DOE*

## DOE Games and Quizzes



*Image courtesy of DOE*

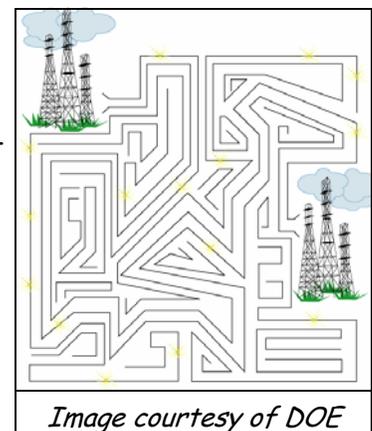
Divided both by age and content, this DOE website provides an extensive list of various games and quizzes available to students. Everything from coloring books and a propeller design challenge to a pollution prevention quiz may be enjoyed at this site.

Website: [http://www.energy.gov/engine/content.do?BT\\_CODE=K\\_GQ](http://www.energy.gov/engine/content.do?BT_CODE=K_GQ)

## FERC Students' Corner

The Federal Energy Regulatory Commission (FERC) regulates energy in the U.S.. In fact, they help make it possible for you to flip a switch and have energy to run TVs, computers, video games, etc. FERC also makes sure that natural gas is transported where it is needed in the U.S. This website allows kids to see how FERC plays an important role in their lives, while enjoying related games and activities.

Website: <http://www.ferc.gov/students/index.htm>

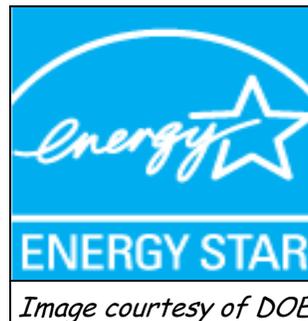


*Image courtesy of DOE*

# DOE Enrichment Opportunities for Students, Schools, and Classrooms

## Energy Star for K-12 School Districts

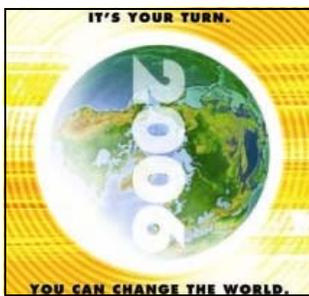
Did you know that the least energy efficient schools use three times more energy than the best energy performers? In fact, top performing Energy Star labeled schools cost forty cents per square foot less to operate than the average performers! By partnering your school with Energy Star, you can help protect the environment and engage your students. Each year, the DOE and EPA honor organizations that have made outstanding contributions to protecting the environment through energy efficiency. Learn more at the link below.



Website: [http://www.energystar.gov/index.cfm?c=k12\\_schools.bus\\_schoolsk12](http://www.energystar.gov/index.cfm?c=k12_schools.bus_schoolsk12)

## Science Bowls

### **National Science Bowl:**



Each year, DOE sponsors a National Science Bowl to encourage student involvement in science and math activities, improve awareness of career options in science fields and provide an avenue for academic science achievement. The next event will take place **April 27-May 1, 2006** in Washington, DC, and will involve an academic competition among teams of high school students who attend science seminars and compete in a verbal forum to solve technical problems in all branches of science and math. Find out more and how your students and school can participate.

Website: <http://www.scied.science.doe.gov/nsb/default.htm>

### **National Middle School Science Bowl:**

Two competitions take place at the National Middle School Science Bowl—an academic math and science competition and a model fuel cell car competition. In 2005, more than 2,000 students participated in twenty-four regional competitions throughout the nation, with a national event rounding out the competition. The next national competition will take place **June 21-24, 2006** in Denver, CO.



Website: <http://www.scied.science.doe.gov/nmsb/default.htm>



## Answers to Science Questions

### **Ask Energy Ant:**

What do you want to know about energy? Seek answers to your questions at this DOE website that provides online personal assistance with energy experts in the field.

Website: [http://www.energy.gov/engine/content.do?BT\\_CODE=K\\_AEA](http://www.energy.gov/engine/content.do?BT_CODE=K_AEA)



*Image courtesy of DOE*

### **Ask a Scientist:**

How will fusion energy be converted to useful energy? Do some colors absorb heat better than others? How much nuclear energy do Americans use in one year? What are our energy supplies and demands for the short term and long term?



Do you have burning scientific questions that you would like answered?

This website allows K-12 teachers and students to ask an international corps of volunteer experts for answers to scientifically-related questions.

Website: <http://www.newton.dep.anl.gov/archive.htm>

## Energy Basics

What exactly is energy and why do we need it? This DOE website provides virtually everything everyone should know about energy, its origins, the types available for use in our homes, the future of our energy consumption and more.

Website: [http://www.energy.gov/engine/content.do?BT\\_CODE=K\\_EB](http://www.energy.gov/engine/content.do?BT_CODE=K_EB)



*Photo courtesy of DOE*



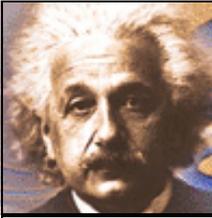
*Photo courtesy of DOE*

## Online Classroom

Play the ultimate game! Crank up the Relativistic Heavy Ion Collider and try to save the universe. Brookhaven National Laboratory provides this website, which has a number of student activities in their kids section.

Website: [http://onlineclassroom.bnl.org/students/nuclear\\_physics/index.html](http://onlineclassroom.bnl.org/students/nuclear_physics/index.html)

## Particles Matter—Physics at High Energy



For all of human history, people have wondered about the smallest possible pieces of the world around us. Fermi National Accelerator Laboratory provides this enlightening website for a glimpse into the past and a look into the future through examples of energy discoveries on an easy-to-navigate timeline.

Website: <http://www.fnal.gov/pub/inquiring/timeline/timeline.html>

*Photo courtesy of NASA*

## Learning about Fossil Fuels

This website provides lots of information for elementary and junior high students relating to the primary fossil fuels that we use for energy: coal, oil and natural gas. Coal is our most abundant and lowest cost fuel, but has a history of creating pollution. Learn about new technologies to fix this problem, as well as how experts are working to resolve challenges relating to oil and natural gas.



Website: <http://fossil.energy.gov/education/energylessons/index.html>

*Images courtesy of DOE*

## Energy Education and Training

This website has links to educational and training resources on energy—particularly energy efficiency and renewable energy. Elementary students can find ideas for energy-related science projects and resources to assist in writing reports on energy topics. High school students can learn about energy careers, energy-related college degrees and programs and scholarships. College students can find information about energy-related internships and job listings. Parents and teachers can find resources to help teach kids and students about energy.



Website: <http://eereweb.ee.doe.gov/education>

*Photo courtesy of DOE*

## Energy Contests



Check out the vast array of competitions available for your students in the energy arena! Sign up to participate in the Solar Decathlon, water & energy essay contest, National Junior Solar Sprint, Rube Goldberg Machine Contest and many more!

Website: [http://www.energy.gov/engine/content.do?BT\\_CODE=K\\_C](http://www.energy.gov/engine/content.do?BT_CODE=K_C)

*Photo courtesy of DOE*