

Workshop 8

Understanding Energy

We need energy to fuel our transportation systems and light our homes, but we live in a world with a limited supply of affordable energy. This final program examines our current sources of energy and how energy is used. Conserving energy not only saves money but also has a positive environmental impact. This program will show how being smart about using energy is part of the curriculum at an urban school, where fourth-graders are getting involved in a community service project to learn about energy resources and how to conserve energy at school and at home.

This program examines the costs—economic and environmental—of using fossil fuels and points out that in the near future we will probably need to depend more and more on renewable energy sources. Viewers will see how two promising technologies—photovoltaic solar panels and fuel cells—can be combined to make solar electric power available 24 hours a day. Students taking a field trip to a solar demonstration house and using solar ovens in their classrooms experience first-hand some practical applications of renewable energy.

On-Site Activities

Getting Ready (30 minutes)

Back to Class

As a group, review and discuss the articles you read for homework.

1. Share the mistake in your class that lead to greater student learning.
2. Describe the device your students built and used to collect data. Share your pictures if you were able to bring some to the session.

Watch the Video (60 minutes)

As you watch the video, consider the following questions and answers:

1. Why is it important to understand energy resources? ***We currently face tough choices about our consumption of energy because fossil fuels that are used in every aspect of our lives are being depleted at an ever-increasing rate.***
2. Where does our energy come from and what are all the costs of using it? ***Today, most of the energy we use in our daily lives comes from fossil fuels. Using this energy has economic, environmental, and health costs.***
3. How can we reduce our consumption of energy? ***We can save energy by making responsible choices, such as investing in energy-efficient technology and modifying our behavior and habits.***
4. What alternative sources of energy can help address our energy needs? ***Renewable sources of energy such as solar energy, wind, geothermal energy, and biomass are helping now to address energy needs and will become even more important in the future.***

Going Further (30 minutes)

Reflecting on Your Understanding

1. Now that you have completed the *Energy* workshop, write on a piece of paper your new definition of energy that incorporates your new understanding.
2. Review the definition you wrote during the first workshop session. How has your definition changed?
3. Which of the workshop sessions in this series had the greatest impact on your understanding of energy?

What If You Were the Nation's Energy Czar?

If you were in charge of the nation's energy needs for the next century, what would you recommend that we do to conserve energy? What would you do to create more efficient energy use in an effort to reduce energy costs?