



## Where Do You Get Your Energy?

In this activity, students will trace their personal energy supply to its sources.

- OBJECTIVES:
- to examine the many different ways students use energy
  - to understand how that energy is produced and transmitted to students' homes, vehicles, and schools
  - to determine how much of the energy students use comes from renewable sources
  - to get students to think more broadly about the subject of energy and their use of energy

GRADES: 6–12

SUBJECTS: social studies, science

TIME: two 45-minute class periods, at least a week apart

PROCEDURE:

### Day 1

1. Tell students that they are going to participate in an activity to discover where and how they get the energy they use.
2. Ask students to list all the ways they use energy in their daily lives. You can either do this as a class, in small groups, or with each student writing out his or her own list. Make the lists as comprehensive as possible. You should probably restrict the list to students' direct use of energy (e.g., to power their televisions, school buses), rather than including such indirect uses as providing energy for the factory that manufactures the jeans they wear.
3. Group the lists by energy source used (e.g., wood for wood stoves, sunlight for calculators, natural gas for home heating, oil/gasoline for cars). For those energy uses that run on electricity, place them in a category titled "electricity."
4. Ask the students if they can trace any of the other materials used for energy back to their original sources. Write the answers on a chart. For example, if students have wood stoves, how do they get the wood and where does it come from? Where do they get the gasoline for their cars? They should trace the energy as far back toward its origin as they can: Where does the gas station get its gasoline? Where does the school get its electricity?
5. When students are unable to trace a particular energy use back to its source, place a question mark on the chart. So, if they do not know where the gas station gets its gasoline, your chart would look as follows:

Car ← gas ← gas station ← ?

6. Then assign individual students or groups of students to find answers to replace the question marks. Tell them that their job is to trace the energy back to its source and that they will be asked to report back to the full class. A group of students can go to local gas stations to see if they can find out where the gasoline is shipped from, where it is refined, and so on. Several students should work together on the subject of electricity. They should find out what energy sources their local utility uses to supply electricity, where the power plants are located, and how much electricity comes from each energy source.

### **Day 2**

1. After students have had time to complete their homework assignments, have them report back to the class.
2. As the students present their information, add to the chart that traces the various energy uses back to their sources.
3. After all the students have presented their reports, look over the chart and identify any ways in which students use renewable energy sources.

### **Optional follow-up activities**

1. Science classes can study the various processes power plants use to generate electricity.
2. Invite a representative of the utility company to visit the class to discuss how the company obtains and distributes its electricity.
3. Invite a representative of the local natural gas company to visit the class to discuss the transmission of natural gas by pipeline.
4. Visit an electricity-generating plant.
5. Have students draw pictures or bring in photographs from magazines illustrating all their uses of renewable energy. Create a bulletin board.
6. Electric appliances have a label or plate that lists how much power they require (usually in watts or amps). Have students go through their houses and record all electric appliance power requirements. Then help the students rank their uses of power from their largest use of electricity to their smallest (e.g., refrigerators use more electricity than televisions). How much power would they need to run all the appliances in their houses simultaneously for an hour? How much would it cost to do this?