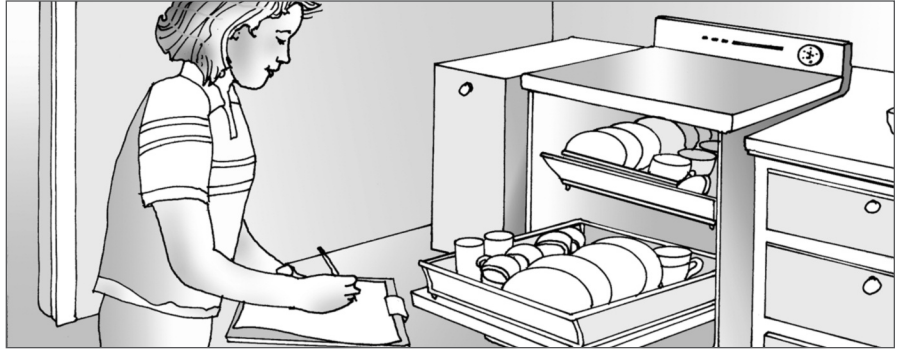


How Do You Rate?

Point of Wonder

Have you ever wondered if you are an efficient energy user?



Standard IV.5



Energy Impacts

People view the impacts of energy development and use in different ways.

Objective

The students will conduct a home survey to determine how, by changing their habits and improving conditions, they can use energy more efficiently and thereby improve the environment in which they live.

Instructional Information and Connections

Time: 30 minutes

Curriculum Focus:

language arts, science, social studies, math

Skills/Processes:

decide, discuss, evaluate, graph, record

Key Vocabulary:

conservation, efficiency, environment, natural resources, quality of life

Background

We use natural resources everyday. Some of them we use just as they come from earth or the atmosphere. Others we alter their makeup to fit our needs. We use the sun, just as it is, to dry clothes; or we use photovoltaic cells to capture the sun's energy and convert it to electricity, a secondary energy source. We use coal, just as it comes to us from earth, to provide heat; or we use coal to provide coke for steel manufacturing. All of the natural resources we use everyday are either nonrenewable—they cannot be easily reproduced; once we use them they are gone—or renewable—they can be replaced through natural and/or human processes.

We need to use nonrenewable resources efficiently and wisely. Even though we will not run out of renewable resources, if we use them efficiently and wisely we will save energy, money, and will protect our environment. Making wise decisions today will have a positive impact on our future.

Imagine the differences we could make if we all used energy more efficiently. We would conserve natural resources for the future, enjoy better air quality and a better life. Each one of us can truly make a difference. All it takes is knowledge and action.

Materials / Preparation

- Copy of *How Do You Rate?* for each student

Learning Activity

Using energy efficiently and conserving our natural resources are responsible and easy actions that students can take today to show they respect the environment and have a desire to protect and preserve it.

1. Pass out the *How Do You Rate?* activity. Discuss the actions that may apply to the school (e.g., windows and doors have weather stripping, drapes, or blinds are open on cold, sunny days and closed on hot days, thermostats are adjusted at night, lawns are

Connections (cont.)

World of Work:

communications and public relations specialist
community energy advisor
education specialist

Character Connections:

accountable, civic minded, disciplined, optimistic

Correlation Connections:

As you prepare and implement this activity, record any state or national standards that may apply:

only watered early or late in the day). As you discuss each action, write a T for true or F for false on the board to see how the school rates. What can the students do to improve energy use at school?

- Decide on several actions the students can take at school to help save energy and protect the environment. One action might be to use both sides of their paper and then recycle. If a room is empty during lunch, or at other times, they can be sure lights are turned off and computers are on sleep mode.
- Have the students take the survey home and complete it with their parent's (guardian's) help. Explain to students that it is important to record their true energy use and not mark what they think they should be doing.
- How did the students' homes rate? Discuss the results of the home survey. Help students to become enthusiastic about conserving natural resources and using energy more efficiently. **(Be sure to save the students' surveys to use later in Activity Seventeen.)**
- Prepare a graph to show the results of the energy efficiency survey. Which efficiency tips are already practiced by most students? Which were least used? Save this graph for comparison with Activity Seventeen at the conclusion of this unit of study.
- Find the mean, median, mode and range of the data on the home survey.

Check for Understanding

Discuss the benefits of energy conservation. How will our energy use impact our future? Compare the benefits and possible inconveniences and their correlation to our quality of life.

To Know and Do More

Why do you think people do not practice all of the energy efficiency tips on the survey? Are there false assumptions that cause people's behavior? (Believing that turning things on and off uses more energy than leaving them on, for example.)

Discuss how people in other geographic areas and cultures would rate. Does everyone have a car? A dishwasher? An air conditioner?

Career Awareness Activity

Have the students think of some careers that could have a big impact on your community's energy usage. Some areas to consider: teachers—impact energy usage through education and example; utilities—through education and incentives; government regulations—through restrictions and rewards, such as financial benefits or tax breaks. Check World of Work for other career ideas.

How Do You Rate?

How energy efficient is the building you live in? Together with your parents or guardians, answer the following questions to rate your home or apartment. Circle T if the statement is true, F if the statement is false, or NA if the statement does not apply to your living situation. Score 1 point for True, 0 points for False and 0 points for Not Applicable.

Heating and Cooling

Windows and doors have good weather stripping. T F NA

Window coverings are open on cold, sunny days and closed on hot days. T F NA

Window coverings are closed at night when heat is on. T F NA

Thermostat is set at 68° F (20° C), or lower, in winter. T F NA

Air conditioning is set at 78° F (26° C), or higher, in summer. T F NA

Ducts are insulated in unheated/uncooled areas. T F NA

Garage is insulated. T F NA

Air filters on furnace and air conditioner are cleaned and changed regularly. T F NA

Had an energy audit from your local utility in the last three years. T F NA

Thermostat is adjusted at night. T F NA

Fireplace damper is kept closed when fireplace is not in use. T F NA

Water

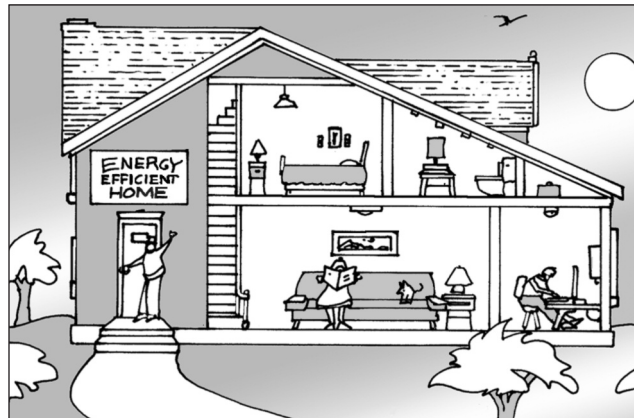
A pitcher of water is kept in the refrigerator for drinking. T F NA

Faucets and toilets do not leak. T F NA

Showers and faucets are fitted with energy-efficient aerators. T F NA

Showers last no longer than five minutes. T F NA

Have low-flow toilets, or tanks use water displacement devices. T F NA



Hot water heater is set at 120° F (49° C). T F NA

Hot water pipes from water heater are insulated. T F NA

If located in an unheated area, hot water heater is wrapped in an insulation blanket. T F NA

Broom, not hose, is used to clean driveways and sidewalks. T F NA

Faucet is shut off while brushing teeth and shaving. T F NA

Appliances

Dishwasher is usually run with a full load. T F NA

Automatic air-dry is used with the dishwasher. T F NA

Washing machine is usually run with a full load. T F NA

Cold water is used in washing machine most of the time. T F NA

Clothes dryer is usually run with a full load. T F NA

Clothes are often hung out to dry. T F NA

