

Renewable Resource (rĭ nŭ' ə bəl rē' sôrs)
a resource that can be replaced
in a short time

ELECTRICITY

Using SCIENCE Words

1. Running water can be used to produce electricity.
Water is a renewable resource because _____.
 - A. it cannot be replaced once it's used up
 - B. it can be replaced
 - C. it's a new way to produce electricity

- 1 There are many different forms of energy. These forms of energy can be changed into other forms of energy. Electrical energy is one form of energy. It's the energy of electric current flowing through wires.
- 2 We use electrical energy many times each day. Electrical energy can be changed into heat, light, and mechanical energy. Mechanical energy is the energy of motion.
- 3 The electricity that we use every day doesn't exist on its own. It has to be made from fuels. Most of the electricity that we use comes from electric power plants. Power plants generate electricity from fuels. This electricity moves through wires to your home.
2. Electrical energy can be changed into _____.
a. fuel
b. light, heat, and mechanical energy
c. electric current
- 4 Electric power plants use huge machines called generators. Generators use sources of fuel to make electricity. Most power plants burn fuels to run their generators. Some of these fuels are coal, oil, and natural gas.
- 5 When a fuel is burned, heat energy is produced. The heat energy makes the parts of the generator move. The moving parts then produce electricity. In this way, heat energy is changed to mechanical energy, which is changed to electrical energy.
3. _____ from burning fuels is changed to movement.
a. Mechanical energy
b. Electrical energy
c. Heat energy
- 6 Most fuels are **nonrenewable resources**. This means that they can't be replaced for a very long time. Coal, oil, and natural gas lie deep within Earth's crust. It takes thousands or millions of years for these fuels to form. These fuels can't be replaced right away. Nonrenewable resources can be used up.
4. A nonrenewable resource _____.
a. can be replaced in a short time
b. takes a long time to be replaced
c. can never be replaced

7 Some electric power plants don't use nonrenewable fuels. Instead, they use resources that can be replaced. A resource that can be replaced in a short time is a **renewable resource**. Water is a renewable resource. Water is used to produce electricity at some power plants.

5. A renewable resource _____.
a. can be replaced in a short time
b. takes a long time to be replaced
c. can never be replaced

8 Running water has mechanical energy. Water can be held behind a dam. When the water is needed, the dam is opened. Water rushes over the dam. The moving energy of the water makes the parts of the generators move. As the parts move, mechanical energy changes to electrical energy.

6. Running water has _____ energy.
a. electrical
b. mechanical
c. heat

LEARN ABOUT WORDS

fix + **able** = fixable (can be fixed)

art + **ist** = artist (one who specializes in art)

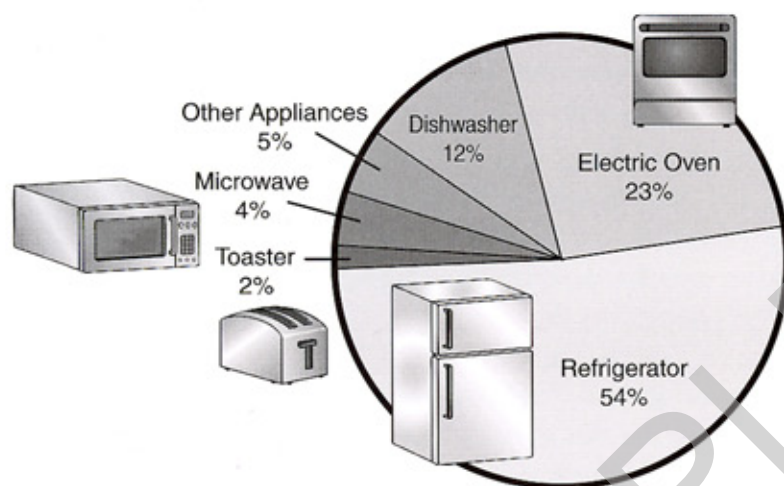
Many words end in *-able* and *-ist*. Often, *-able* means "can be," and *-ist* means "one who specializes in." Read each word in **bold type** and the incomplete definition of it. Write the word that completes the definition.

7. **renewable**: able to be _____
8. **machinist**: one who specializes in _____
9. **nonrenewable**: not able to be _____
10. **moveable**: able to be _____
11. **scientist**: one who specializes in _____
12. **changeable**: able to be _____
13. **replaceable**: able to be _____
14. **bicyclist**: one who _____
15. **chemist**: one who specializes in _____
16. **usable**: able to be _____

THINK ABOUT IT

The graph shows the percentage of electricity used by appliances in the Callahans' kitchen. Read the circle graph. Then answer the question.

Percent of Electricity Used



17. Which two appliances used the least amount of electricity?
- A. refrigerator and electric oven
 - B. dishwasher and electric oven
 - C. microwave and toaster
 - D. toaster and dishwasher

Using SCIENCE Words

1. B

Comprehension

2. b
3. c
4. b
5. a
6. b

Learn About Words

7. renewed
8. machines
9. renewed
10. moved
11. science
12. changed
13. replaced
14. bicycles
15. chemicals
16. used

Think About It

17. C

Writing About Science

List some ways you could conserve electricity. Then use your list to write a paragraph.