

## Skills Worksheet

**Active Reading****Section: Renewable Energy Today**

Ch. 18

**Read the passage below and answer the questions that follow.**

Solar cells, also called *photovoltaic cells*, convert the sun's energy into electricity. Solar cells were invented more than 120 years ago, and now they are used to power everything from calculators to space stations. Solar cells have no moving parts, and they run on nonpolluting power from the sun. So why don't solar cells meet all of our energy needs? A solar cell produces a very small electrical current. So meeting the needs of a small city would require covering hundreds of acres with solar panels. Solar cells also require extended periods of sunshine to produce energy. This energy is stored in batteries, which supply electricity when the sun is not shining.

Despite these limitations, energy production from solar cells has doubled every four years since 1985. Solar cells have become increasingly efficient and less expensive. Solar cells have great potential for use in developing countries, where energy consumption is minimal and electricity networks are limited. Currently, solar cells provide energy for more than 1 million households in the developing world.

**IDENTIFYING MAIN IDEAS**

One reading skill is the ability to identify the main idea of a passage. The main idea is the main focus or key idea. Frequently, a main idea is accompanied by supporting information that offers detailed facts about main ideas.

**In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.**

- \_\_\_\_\_ 1. Solar cells convert the sun's energy into
- a. light.
  - b. heat.
  - c. electricity.
  - d. pollution.
- \_\_\_\_\_ 2. What factor regarding solar cells has doubled every four years since 1985?
- a. the number of solar cells produced
  - b. the amount of energy produced by solar cells
  - c. the number of people who use solar cells
  - d. the price of solar cells
- \_\_\_\_\_ 3. Solar cells have great potential for use in
- a. cities.
  - b. private homes.
  - c. factories.
  - d. developing countries.

**Active Reading** *continued*

**RECOGNIZING SIMILARITIES AND DIFFERENCES**

One reading skill is the ability to recognize similarities and differences between two phrases, ideas, or things. This is sometimes known as comparing and contrasting.

**Read the following questions and write the answers in the space provided.**

4. How are solar cells different from most other power sources?

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5. How are solar cells of today superior to solar cells of the 1980s?

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**VOCABULARY DEVELOPMENT**

**In the space provided, write the letter of the definition that best matches the term or phrase.**

\_\_\_\_\_ 6. *photovoltaic cells*

\_\_\_\_\_ 7. solar panels

\_\_\_\_\_ 8. energy consumption

\_\_\_\_\_ 9. batteries

a. power usage

b. store energy collected by solar cells

c. convert the sun's energy into electricity

d. collections of solar cells

**RECOGNIZING CAUSE AND EFFECT**

One reading skill is the ability to recognize cause and effect.

**Read the following questions and write the answers in the space provided.**

10. How are solar cells used today?

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11. Why are solar cells particularly suitable for developing countries?

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12. Why aren't solar cells used to meet all of our energy needs?

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## Skills Worksheet

**Active Reading****Section: Alternative Energy and Conservation**

Ch. 18

**Read the passage below and answer the questions that follow.**

The average household in the United States spends more than \$1,200 on energy bills each year. Unfortunately, much of that energy is wasted. Most of the energy lost from homes is lost through poorly insulated windows, doors, walls, and the roof. So a good way to increase energy efficiency is to add to the insulation of a home. Replacing old windows with new, high-efficiency windows can reduce your energy bill by 15 percent. Two of the best places to look for ways to conserve energy are doors and windows. Much of the energy lost from a home escapes as hot air in winter or cold air in summer passes through gaps around doors and windows. Hold a ribbon up to the edges of doors and windows. If it flutters, you've found a leak. Sealing these leaks with caulk or weather stripping will help conserve energy. There are dozens of other ways to reduce energy use around the home.

**IDENTIFYING MAIN IDEAS**

One reading skill is the ability to identify the main idea of a passage. The main idea is the main focus or key idea. Frequently, a main idea is accompanied by supporting information that offers detailed facts about main ideas.

**In the space provided, write the letter of the term or phrase that best completes each statement.**

- \_\_\_\_\_ 1. The average household in the United States spends \$1,200 a year on  
a. repairs to the home.  
b. windows and doors.  
c. insulation.  
d. energy bills.
- \_\_\_\_\_ 2. Much of the energy in homes in the United States is  
a. efficient.  
b. wasted.  
c. conserved.  
d. reduced.
- \_\_\_\_\_ 3. People can increase energy efficiency in their homes by  
a. keeping doors and windows closed at all times.  
b. replacing their roofs.  
c. adding to the insulation in their homes.  
d. using more hot air in winter and more cold air in summer.

**Active Reading** *continued*

**VOCABULARY DEVELOPMENT**

**Read each question and write the answer in the space provided.**

4. The term *efficient* means “productive without waste.” Use this information to define *energy efficiency*.

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5. *Insulate* comes from the Latin word for “island” and means “isolate” or “protect.” From what does insulation isolate or protect homes?

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**In the space provided, write the letter of the term that best answers the question.**

- \_\_\_\_\_ 6. What is used for sealing leaks around windows and doors?
- a. ribbon
  - b. insulation
  - c. weather stripping
  - d. replacement parts

**RECOGNIZING CAUSE AND EFFECT**

One reading skill is the ability to recognize cause and effect.

**In the space provided, write the letter of the phrase that best completes the statement.**

- \_\_\_\_\_ 7. Replacing old windows with new, more efficient windows can
- a. reduce an energy bill up to 15 percent.
  - b. cause leaks that lead to energy loss.
  - c. increase an energy bill as much as 15 percent.
  - d. eliminate the need for other improvements to the home.

**Read each question and write the answer in the space provided.**

8. The greatest loss of energy in a home results from poor insulation in what four areas of the home?

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9. How can a person detect leaks around windows and doors?

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10. What happens to much of the energy that is used to heat and cool homes?

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