

▶ **Standard:** Analyze Text Elements ▶ **Skill:** Describe Text Connections

Electricity from the Sun

- ① The sun has always been a source of energy for people. Back in ancient times, people learned how to work with sunlight. For example, they used mirrors to focus sunlight and give off heat. Today people can turn sunlight, or solar energy, into electricity. Then it is called solar power. One device people use to produce solar power is a solar panel.

What Are Solar Panels?

- ② Have you ever seen a lot of big, shiny rectangles on a rooftop? Those are solar panels. They are officially known as photovoltaic, or PV, solar panels. The root *photo* means “light.” *Voltaic* (vol-TAY-ick) refers to electricity.
- ③ PV solar panels are made up of solar cells. One solar cell can produce a little bit of power out of sunlight. But one solar panel can produce much more power.



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More than one million homes in the United States have solar panels.

- ④ Solar panels can produce a lot of electricity for a home or business. They might even produce all the electric power a family needs. That can help people save money.
- ⑤ What happens when you put many solar panels together? They form what is called a *solar array*. Solar power plants put together many solar arrays. They can make electricity for thousands of homes.

What Are the Benefits of Solar Energy?

- ⑥ Some types of energy cause pollution. Other types of energy rely on chemicals that can be dangerous if they leak into the air or water. Solar energy is natural. It does not pollute the air.
- ⑦ Solar energy is also reliable. Solar panels continue to work even on cloudy days. They just don't take in as much energy. Electricity from solar energy is also stored. A home only uses what it needs and can draw on the storage when necessary.
- ⑧ In big storms, electric companies often experience outages. Poles and wires may go down. Some people may not have electricity for days, or longer. But people who have solar panels may still be able to have electricity. Because of this, some towns have installed solar panels on their electrical poles.



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Large solar arrays at some solar power plants take up many acres of outdoor space.

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Name: _____

1. Complete the *Multiple Effects Chart* on page 176 to tell about the effects of using solar panels.

Answer questions 2–5.

2. Which detail from the passage BEST shows why people might save money if they have solar panels on their house?
 - A. “One device people use to produce solar power is a solar panel.”
 - B. Solar panels “might even produce all the electric power a family needs.”
 - C. “Solar power plants put together many solar arrays.”
 - D. “Solar energy is also reliable.”
3. In which paragraph does the author contrast solar energy with other types of energy?
 - A. paragraph 2
 - B. paragraph 3
 - C. paragraph 5
 - D. paragraph 6

4. What is the relationship between solar cells, solar panels, and solar arrays? Use details from the passage to support your answer.

5. What are THREE benefits of using solar energy? Use details from the passage to support your answer.

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Answer Key

1. Possible responses: Cause: using solar panels
Effect: Solar panels can create electricity for homes and businesses.
Effect: People can save money on the cost of electricity.
Effect: The air stays cleaner because solar energy does not pollute the air.
Effect: People may still have electricity even when there is a power outage.
2. B
3. D
4. Possible response: A solar cell is small and can create a little bit of power. A solar panel is made up of many solar cells. A solar panel can make more power than a solar cell. A solar array is made up of many solar panels together. A solar array can make even more power.
5. Possible response: 1) Solar energy is better for the environment because it does not pollute the air. 2) Solar energy is reliable. Solar panels work even on cloudy days. 3) Extra solar energy can be stored to be used later. During storms and power outages, houses with solar panels may still have electricity.