CONTENTS

This passage is about using a natural resource as a source of energy. Read the passage. Then answer the questions that follow.

Windy Ways

We use a lot of energy every day of our lives. What do we use for heating, cooking, and generating electricity? We use coal, natural gas, and petroleum. These resources can be used alone. Some furnaces or lights use natural gas. Petroleum is used to make gasoline, which makes car engines work. These resources can also be used to generate electricity in power plants. Electricity is required for many of the things we use. The problem is that our supplies of coal, natural gas, and petroleum are limited. Once these supplies are used up, there will be no more. It is important for us to find other sources of energy and ways to generate electricity.

Today, scientists are looking at using the wind to generate electricity. Wind energy has been used for thousands of years to make windmills work. A *windmill* is a machine that uses wind energy to move other pieces of machinery. A windmill has large blades. The blades are connected to other parts of a machine. The wind makes the blades turn. This transfers energy that makes the rest of the machine work. Windmills have been used to turn the stone grinding wheels that make grain into flour. Farmers and ranchers used windmills to pump water up out of the ground to use for their animals and crops.

There is another kind of machine that uses wind energy. It also has large blades that rotate. But this machine uses wind energy to generate electricity. It is called a *wind turbine.* Turbines are machines that convert energy in one form into electricity. Wind turbines are tall and thin most have three narrow blades. They are placed in large open fields in windy areas. Groups of wind turbines placed together are called *wind farms.* These wind farms can contain a few dozen to several hundred wind turbines. Many times the wind turbines share the fields with cattle and other farm animals. The animals don't seem to mind the noise wind turbines make at all.

Wind turbines are still being improved. They need to be located in windy places to produce electricity. The electricity is expensive to move from where it is created to where it is needed. Scientists are working on ways to store the energy so they can use it when they need it. They think wind turbines can be an important source of electricity in certain parts of the country. If you live in a large open part of the country, keep your eyes on the fields. You might just see a wind farm there someday.

Understanding the Story

Here are some questions about the passage that you just read. Read each one and then fill in the circle beside the best answer. If you're not sure, go back and look at the passage again.

1. What is one thing that can use natural gas to work?

Factual

- Ⓐ a gas pump
- Ⓑ a furnace
- Ⓒ a car engine
- Ⓓ an electric stove

2. What is a *windmill*?

Factual

- Ⓐ a machine that uses wind energy
- Ⓑ a machine that grinds corn
- Ⓒ a machine with a large fan
- Ⓓ a machine that generates electricity

3. How do farmers use windmills?

Factual

- Ⓐ to help plow the fields
- Ⓑ to help put seeds in the ground
- Ⓒ to spread fertilizer through the air
- Ⓓ to pump water for animals and crops

4. How does a windmill make other machines work?

Inference

- Ⓐ The turning blades make other parts of the machine move.
- Ⓑ The turning blades make electricity.
- Ⓒ The turning blades store electricity.
- Ⓓ The turning blades create high winds.

5. What is a *wind turbine*?

Inference

Ⓐ a machine that makes a pump work

Ⓑ a machine that grinds corn

Ⓒ a machine with a big fan

Ⓓ a machine that generates electricity

6. How do farm animals react to wind turbines?

Factual

Ⓐ They are frightened because they are so big.

Ⓑ They don't like the noise they make.

Ⓒ They don't mind them.

Ⓓ They like the sound they make.

7. Why are scientists looking for replacements for resources like coal, natural gas, and petroleum?

Inference

Ⓐ These resources are very expensive.

Ⓑ These resources will run out some day.

Ⓒ These resources cause a lot of pollution.

Ⓓ These resources don't work in all parts of the country.

8. What is the difference between a windmill and a wind turbine?

Inference

Ⓐ Windmills are larger than wind turbines.

Ⓑ Wind turbines do not cost as much as windmills.

Ⓒ Wind turbines cause more pollution than windmills.

Ⓓ Windmills work with machines and wind turbines make electricity.

9. What is a *wind farm?*

Factual

Ⓐ a farm that uses a lot of windmills

Ⓑ a group of windmills

Ⓒ a group of wind turbines

Ⓓ a farm located in a windy part of the country

10. Why would it be good to put wind turbines in wide-open areas?

Critical Reasoning

Ⓐ They wouldn't bother farm animals.

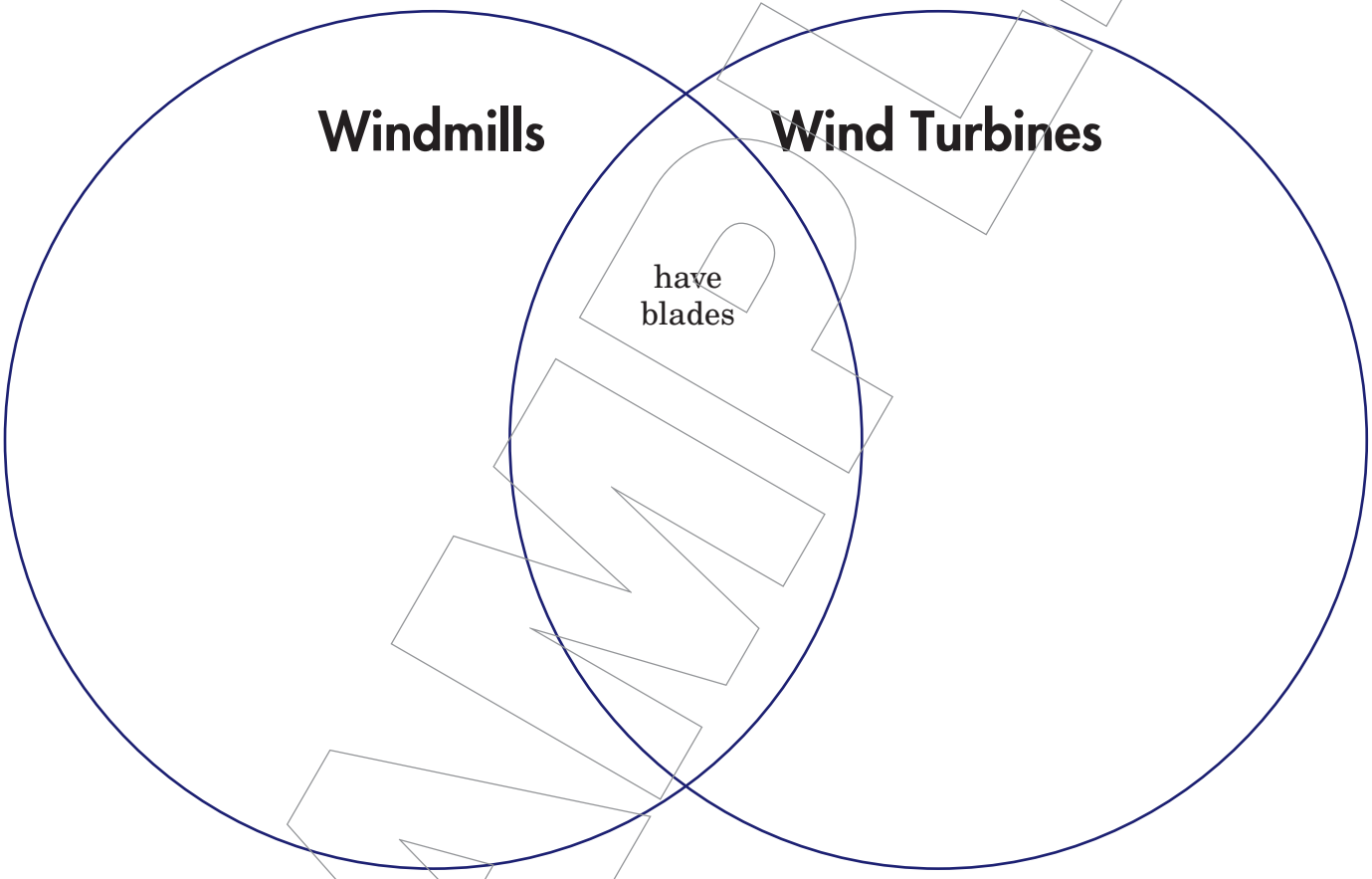
Ⓑ There is more wind in open areas.

Ⓒ They are too big to put in cities.

Ⓓ They would not bother people.

Summing Up

This passage discusses windmills and wind turbines. In some ways they are alike. In other ways they are different. A **Venn diagram** can help you see how two things are alike and different. Use the Venn diagram below to show what you have learned about wind energy. Write the ways windmills and wind turbines are similar in the center section. Write the ways they are different in the side sections. Part of the information is already filled in for you.



Write About It

Comparing and contrasting ideas is one way that writers make a point. Write a comparison of windmills and wind turbines. Use the Venn diagram on page 43 to help you. Some paragraph starters are already provided for you.

Windmills and Wind Turbines

Windmills and wind turbines make good use of the energy in wind. They are alike in several ways. _____

There are also diferences between windmills and wind turbines. _____