

Informational  
Text



# WIND POWER

by Ann Weil

Mc  
Graw  
Hill

PAIRED  
READ

A Solar House

## STRATEGIES & SKILLS

### Comprehension

Strategy: Reread

Skill: Author's Purpose

### Phonics

CVCe syllables

### Vocabulary Strategy

Paragraph Clues

### Vocabulary

electricity, energy, flows,  
haul, power, silent, solar,  
underground

### Content Standards

#### Science

Physical Science

Word count: 566\*\*

**Photography Credit:** Cover Richard Nowitz/National Geographic Society/CORBIS

\*\*The total word count is based on words in the running text and headings only. Numerals and words in captions, labels, diagrams, charts, and sidebars are not included.



## Essential Question

How do we use energy?

# WIND POWER

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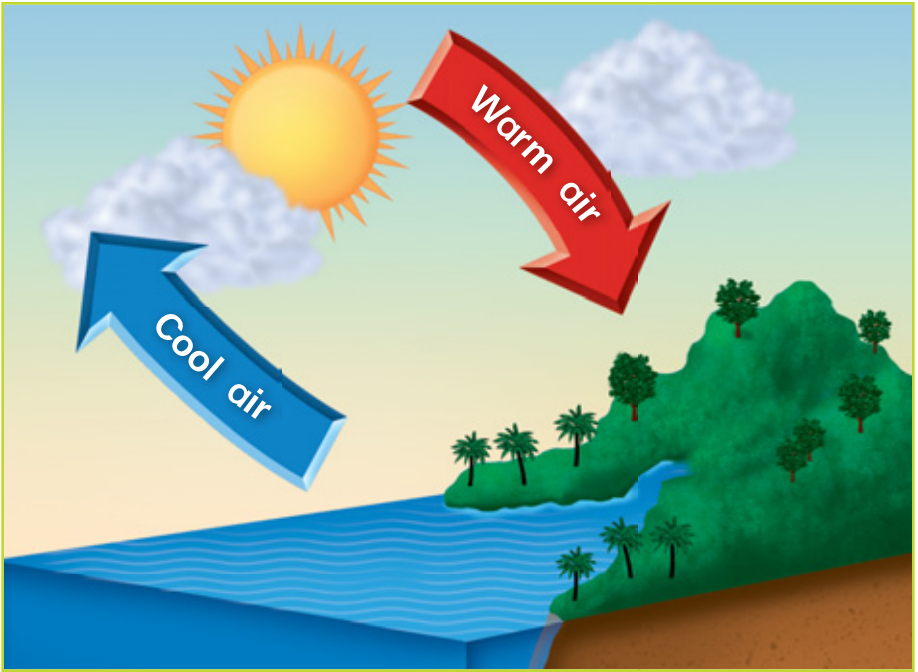
# CHAPTER 1 WHAT IS WIND?

You cannot see the wind. But you can see what it does. Wind lifts a kite into the air. Wind pushes a sailboat across the water.

Sailboats are one way people use wind power. People used sailboats in ancient Egypt. They sailed along the Nile River. Later, people from Europe used sailboats to explore. Some sailed to the Americas. Some sailed around the world.

**A boat's mainsail captures wind power.**





Air over land warms faster than air over water.

What is wind? Wind is moving air. Moving things have energy. Wind gets energy from the sun. First, the sun warms the air. Then the warm air rises. Cool air moves in to take its place. That moving air is wind.

**STOP AND CHECK**

What have you learned about wind power so far?



## CHAPTER 2 WINDMILLS

Windmills are another way people use wind power. A **windmill** can do other things too. It can pump water. Getting water this way is easier than having to haul it from rivers.

This windmill in California pumps water.



(big) Richard Nowitz/National Geographic Society/CORBIS

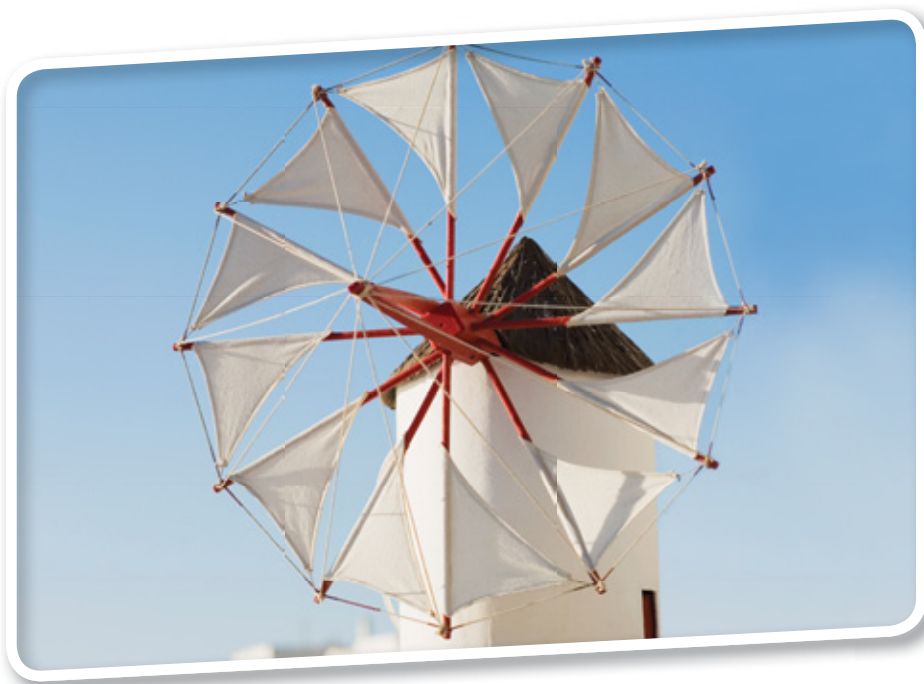
Some places in the United States are dry. The land has very little water. But there is a lot of water underground. Windmills pump water up to the surface.

**Ranches use windmills to pump water.**



## The History of Windmills

People in China used simple windmills to pump water 2,000 years ago. Later, people in Persia and the Middle East used them too. Early windmills could grind grain for food. People in Europe were using windmills by the 1100s.



This windmill in Greece is from the 1500s.



Dutch windmills had four long arms. Each arm had a sail or slats made from wood.

Dutch people used windmills to pump water away. Their land was too wet. So they drained the land. Then they could use it for farms.

The Dutch built walls to hold back the sea.



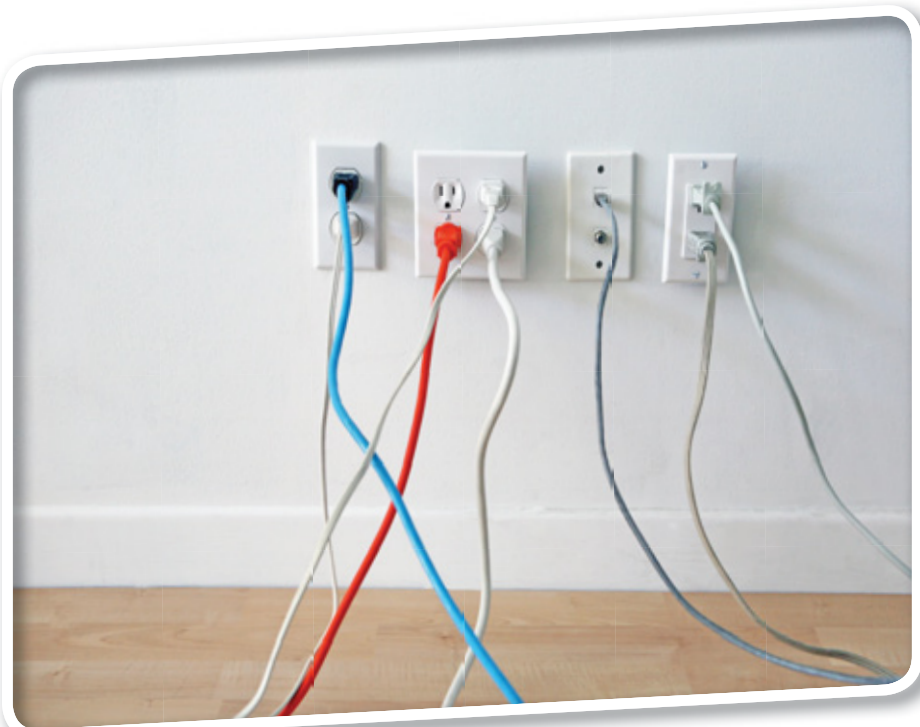
**STOP AND CHECK**

What did Dutch people use windmills for?

## CHAPTER 3

# WINDMILLS TO WIND FARMS

We still use wind power today. We use it in new ways. We use it to make electricity. Electricity flows through homes and schools. We use it to provide power for things.



Computers and TV sets run on electricity.

## Wind Turbines

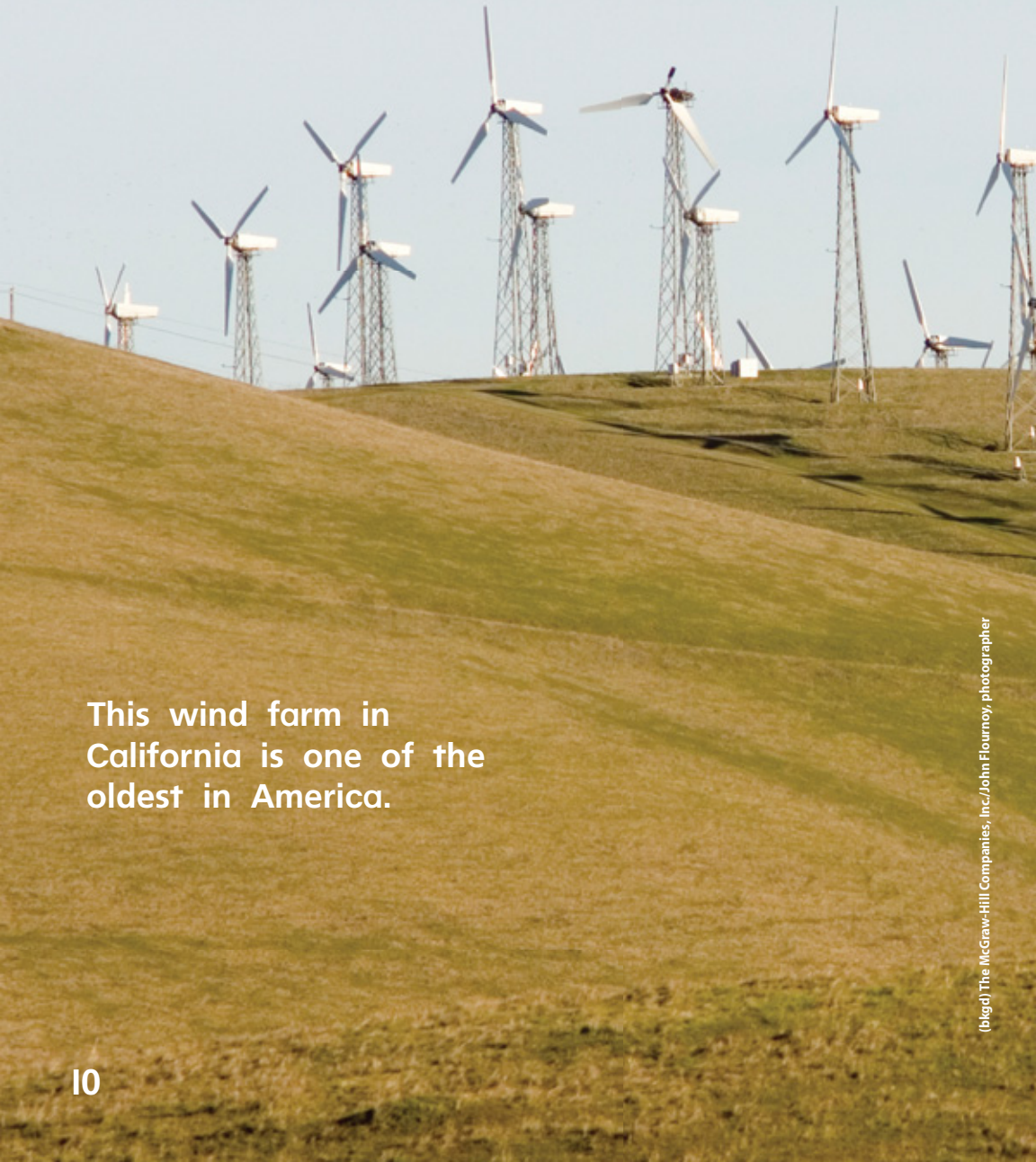
A windmill for electricity is called a wind **turbine**. A small one can produce enough electricity for a home. A big one can produce energy for a small town. Most turbines in the United States are in California.

Some homes get energy from the sun.






A **wind farm** is a place with a lot of wind turbines. The turbines are linked. This helps them work better. A wind farm can make a lot of electricity this way.



This wind farm in California is one of the oldest in America.

Wind farms have large turbines. Some are 20 stories high! Their blades can stretch over a very large area. This area might be wider than a football field!



One of the largest wind turbines is in Germany and stands 453 feet (138 meters) tall.

**STOP AND CHECK**

Why do people build wind farms?



## CHAPTER 4

# THE FUTURE OF WIND POWER


Wind power does not **pollute** the air or water. But wind farms can be noisy. They make the ground shake. People who live near them complain about these things. Wind farms can hurt animals too. They are not safe places for birds or bats.



Experts look for ways to make wind farms better. They cannot be silent. But they are getting quieter. Experts look for ways to make them safer for animals too.

**Birds fly into buildings more than they fly into wind farms.**





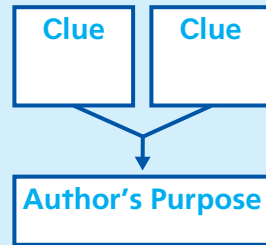
Some power plants  
pollute the air.

Wind power may be the best way to meet our energy needs. Wind power is clean. We have plenty of it. It costs less than buying oil from other countries. The world will run out of oil someday. But we won't ever run out of wind!

# Respond to Reading

## Summarize

Use the chart to help you summarize *Wind Power*.



## Text Evidence

1. How do you know that *Wind Power* is nonfiction? **Genre**
2. Why did the author write this text? **Author's Purpose**
3. Which sentence helps you figure out the meaning of *drained* on page 7? **Paragraph Clues**
4. Write about why the author thinks wind power is better than other kinds of power. **Write About Reading**

## Compare Texts

Read about how people use a different form of energy.

# A Solar House

Many people heat their homes. Some use wood for heat. Some use oil. Some use electricity. Now, more people use solar energy. They make their own electricity instead of buying it from a power company.





## SOLAR ENERGY

Solar energy comes from the sun. People put panels on the roof. The sun shines on them. The panels change heat and light from the sun into electricity. People use this power to heat their homes.

This home uses solar heating in cold weather.





Illustration: Rob Schuster

Many homes use back-up heaters on cloudy days.



## Make Connections

What is wind and solar energy used for? **Essential Question**

How is energy collected in *Wind Power* and *A Solar House*? **Text to Text**

# Glossary

**pollute** (*puh-LOOT*) to make dirty  
(*page 12*)

**turbine** (*TUR-bine*) blades that turn to  
create power (*page 9*)

**wind farm** (*WIND fahrm*) place with  
many connected turbines (*page 10*)

**windmill** (*WIND-mil*) machine with  
blades turned by wind to create  
power (*page 4*)

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# Focus on Science

**Purpose** To make a wind sock

## What to Do

**Step 1**

You will need two pieces of thick paper, tape, and string. Roll one piece of paper into a tube. Tape it shut.

.....

**Step 2**

Cut the other piece of paper into strips. Tape the paper strips to the bottom of the tube.

.....

**Step 3**

Tape string across the top of the tube. Hang your wind sock outside in a windy place.

**Conclusion** See what happens when the wind blows on the wind sock. Talk about it with a partner.

# Thinkmark

## Vocabulary

What new words did you learn in the text? What helped you understand their meanings?

## Author's Purpose

What is the author's purpose for writing *Wind Power*?

## Conclusions

What is the most important thing you learned in *Wind Power*?