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Genre	Comprehension Skills and Strategy	Text Features
Expository nonfiction	• Graphic Sources • Main Idea and Details • Important Ideas	• Captions • Labels

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Science
Science

Earth Science

How to Measure the Weather

by Carol Talley

Vocabulary

average
depth
desert
erupted
outrun
peak
tides
waterfalls

Word count: 407

Note: The total word count includes words in the running text and headings only. Numerals and words in chapter titles, captions, labels, diagrams, charts, graphs, sidebars, and extra features are not included.

How to Measure the Weather

by Carol Talley

Scott Foresman
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Glenview, Illinois • Boston, Massachusetts • Chandler, Arizona
Upper Saddle River, New Jersey

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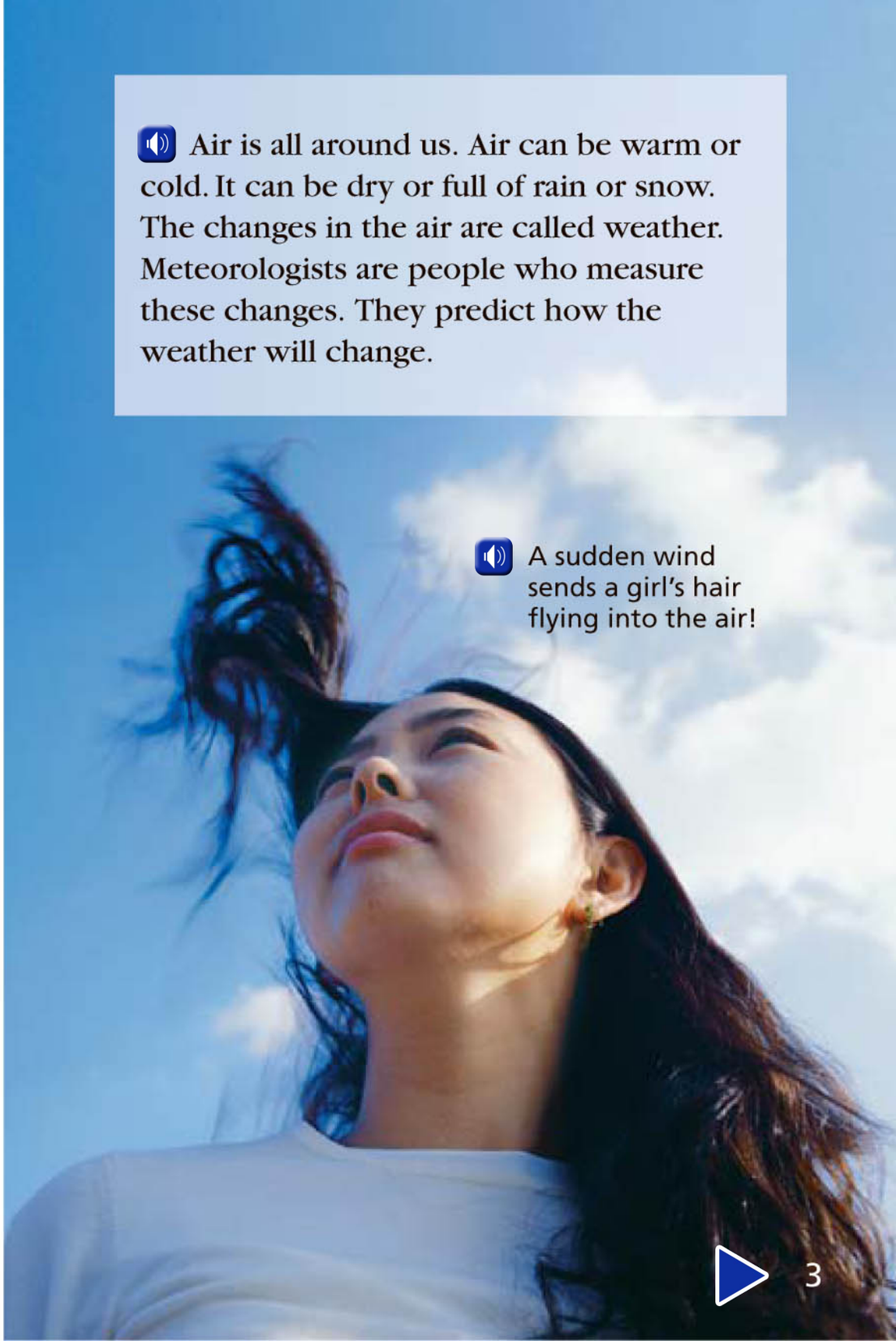
1 2 3 4 5 6 7 8 9 10 V0G1 13 12 11 10 09

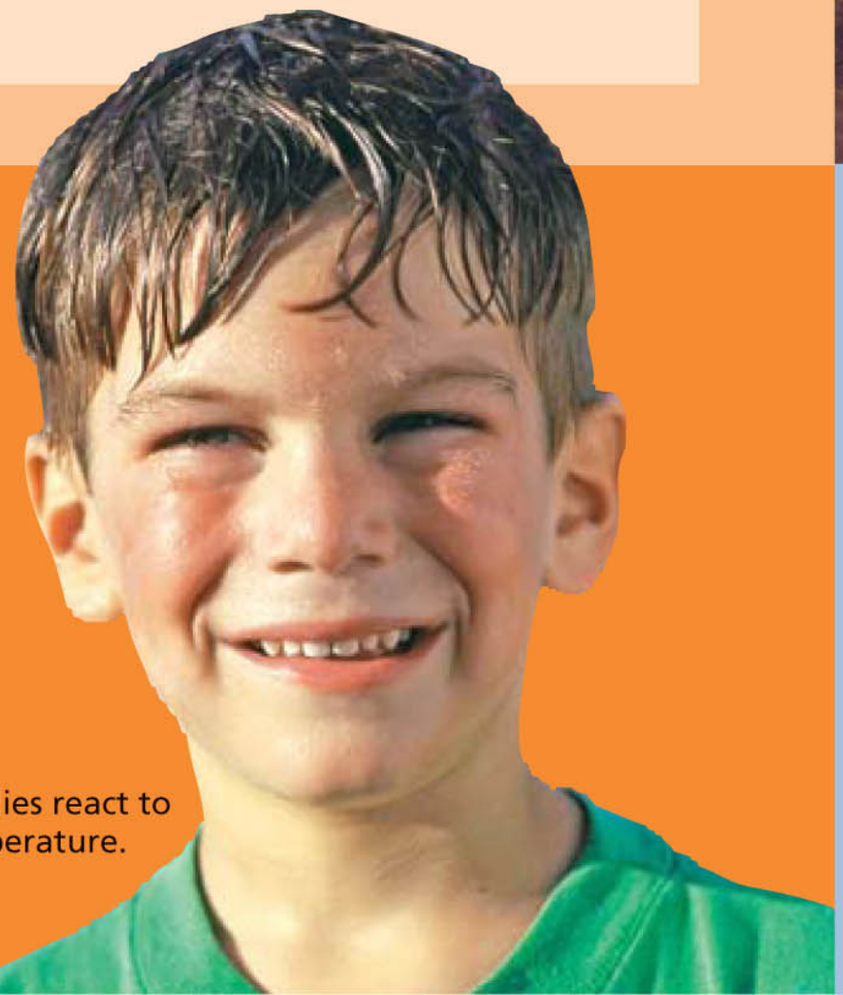
Air is all around us. Air can be warm or cold. It can be dry or full of rain or snow. The changes in the air are called weather. Meteorologists are people who measure these changes. They predict how the weather will change.



A sudden wind sends a girl's hair flying into the air!

Thermometer on a hot day

Temperature is the warmth or coldness of the air. You can feel changes in the air's temperature. Our bodies sweat when we are feeling hot.



Our bodies react to air temperature.

We use thermometers to measure air temperature. Temperature is measured in degrees Celsius or degrees Fahrenheit.

On a Celsius thermometer the freezing point is 0 degrees. The freezing point on a Fahrenheit thermometer is 32 degrees.

Thermometer on a cold day

This girl can feel the direction of the wind.

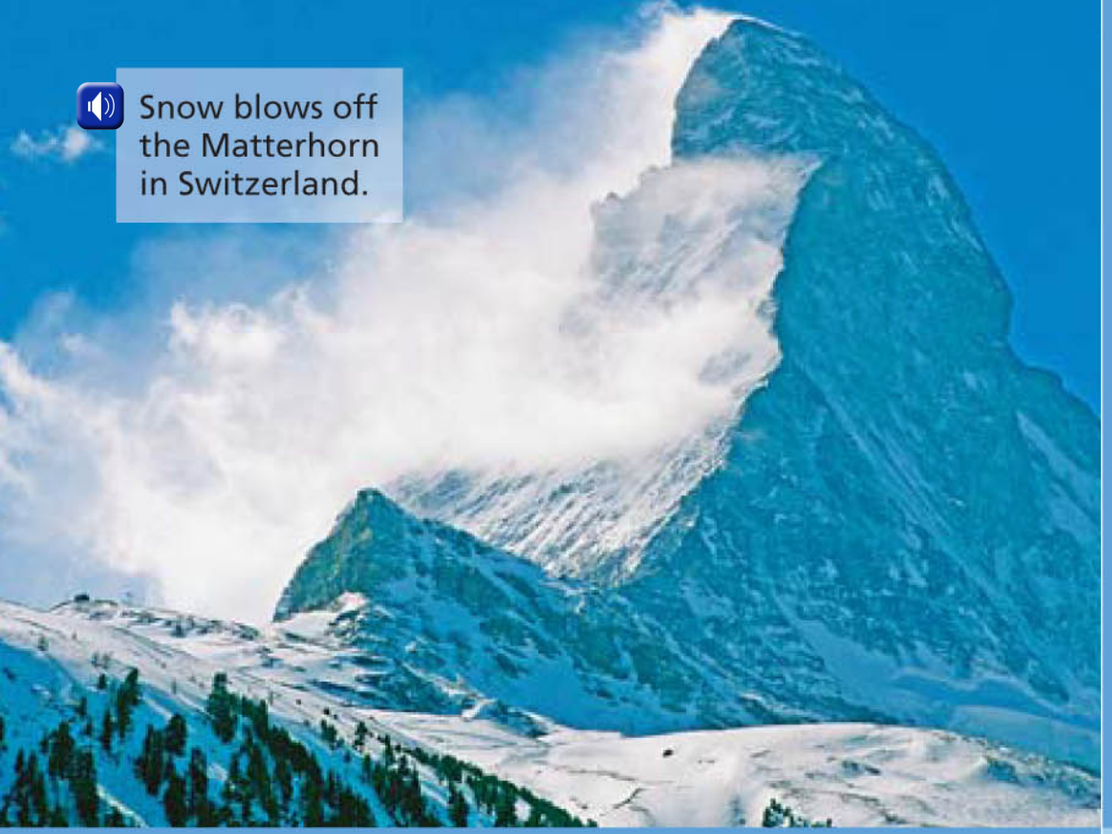
Wind, or moving air, is a part of weather. You can't see the wind. But you can feel which way it is moving. Strong storm winds can affect the ocean's tides and cause huge waves to erupt.

A wind is named for the direction it is coming from. A north wind is coming from the north.

A weather vane swings around in moving air. Its arrow end points in the direction the wind is coming from.

Weather vane

Which direction is the wind coming from?



Snow blows off the Matterhorn in Switzerland.

An anemometer is one instrument that measures wind speed. The cups on an anemometer spin when they catch the wind. The anemometer measures the speed of the spinning cups.

Wind speed is measured in miles per hour. Chimney smoke rises straight up in wind that blows less than one mile an hour. You can outrun that wind easily! But winds on a mountain peak are much stronger!

A scientist uses an anemometer in Antarctica.

The San Francisco skyline is partly covered with fog.

The air is never totally dry, even in deserts. There is always some water in the air. You can see water in the misty air near waterfalls. You can see it in a foggy harbor. You see water when it rains or snows.

Rain and snow are measured in inches. You can measure rain with a rain gauge. You can measure snow with a ruler or yardstick.

You can make a rain gauge. Put a tin can in an open place. After a rainstorm, use a ruler to measure the depth of the water in the can. You could do this for a whole year. Then you could divide the inches for the year by twelve to get a monthly average.

Students measure and record rainfall using a rain gauge.

A barometer measures air pressure.

Air pressure is the weight of the air that presses down on Earth. As air pressure changes, the weather changes. We measure air pressure with a barometer.

Thermometers, weather vanes, anemometers, rain gauges, yardsticks, and barometers all measure weather!

Reader Response

1. How do the photographs help you to understand the different kinds of weather information this book talks about?
2. What important ideas did you learn from reading this book? In a chart like the one below, write two sentences about the important ideas you learned.

Important Ideas

3. There are two compound words on page 10. Write each word and then write a sentence for each word.
4. Write an answer to the question in the caption on page 7. Then explain how you got your answer.