How to Measure the Weather

SUMMARY This nonfiction reader describes aspects of weather—temperature, wind, precipitation, and air pressure—and the tools meteorologists use to measure these phenomena.

LESSON VOCABULARY
- average
- depth
- desert
- erupted
- outrun
- peak
- tides
- waterfalls

INTRODUCE THE BOOK
INTRODUCE THE TITLE AND AUTHOR Discuss with students the title and the author of How to Measure the Weather. Point out the genre and content triangle and discuss with students what sort of information might be included in the book. Ask: What tools do we use for measuring? (Possible responses: rulers, scales, measuring cups and spoons, thermometers)

BUILD BACKGROUND Put the word weather at the center of a concept web on the board. Invite students to brainstorm the words and ideas that come to mind when they think of the word weather. Review the measuring tools students suggested when talking about the title of the selection. Ask students what measuring tools they think are used to measure weather.

PREVIEW/USE TEXT FEATURES Tell students to skim through the text by looking at the pictures. Have students focus on the pictures of instruments and point out any that they recognize. Explain that all of the instruments shown are used to measure weather. Then have students predict what some of the unfamiliar instruments measure, based on what is shown in the nearby photographs.

READ THE BOOK
SET PURPOSE Have students set a purpose for reading the selection by completing the following sentence: I want to read this book because I want to find out more about __________. Tell students to fill in the blank with a topic about measuring the weather.

STRATEGY SUPPORT: IMPORTANT IDEAS Tell students that authors have many important ideas in a story. Understanding which ideas are important will help the students better understand the story. Ask students to keep this in mind as they read.

COMPREHENSION QUESTIONS
PAGE 7 What question could you ask about wind that is answered on this page? (Possible response: What is a wind named after?)

PAGE 9 What does an anemometer use to measure the speed of wind? (cups that spin)

PAGE 11 What is the main idea of this page? (Possible response: You can make your own rain gauge to measure how much rain has fallen.)

PAGE 12 What comparison does the author make on this page? (Thermometers, weather vanes, anemometers, rain gauges, and barometers all measure weather.)
REVISIT THE BOOK

READER RESPONSE

1. Possible response: The photographs give you a way to see what is being discussed. You can visualize the instruments and the different types of weather described in the selection.

2. Possible response: How to name wind. How to measure rainfall and wind speed.

3. Waterfalls, yardsticks; Sentences will vary.

4. The wind is coming from the south. The arrow is pointing to “S.”

EXTEND UNDERSTANDING
Explain that authors often include photographs in nonfiction books to help readers understand what happens in the text. Discuss with students how the pictures of the weather instruments in this selection helped them better understand the tools and how they work.

RESPONSE OPTIONS

WORD WORK
Provide students with the etymology of the word meteorology: meteor meaning “things in the air” and -ology meaning “the science of.” Have students look up the definition of meteorology in a dictionary and write a brief paragraph comparing today’s definition of the word with its origin.

SCIENCE CONNECTION
Have students create their own weather stations at home that include a thermometer and rain gauge (a simple can or jug to collect water). Tell students to take readings of the thermometer and rain gauges once a day every day for a week and chart their readings in a table. Have students compare tables at the end of the week and plot their readings on classroom graphs.

Skill Work

TEACH/REVIEW VOCABULARY
List the vocabulary words on the board and go over the definitions. Divide the class into groups, and assign each group a vocabulary word. Have each group create clues for its word. Clues may relate to the meaning, spelling, part of speech, or pronunciation of the word. Then have groups give their clues to the class while other students try to guess the word.

TARGET SKILL AND STRATEGY

GRAPHIC SOURCES
Remind students that graphic sources include charts, tables, diagrams, maps, or pictures with captions. Looking at graphic sources can help readers understand information by presenting it visually. Ask students to talk about any graphic source in How to Measure the Weather that was particularly helpful to them and tell why.

IMPORTANT IDEAS
Remind students that when they read, it helps to find important ideas in the story. Explain that authors can organize the text of a story so important ideas are easier to find. Ask students how the text is organized. (by description) Tell students that the descriptions the author gives are some of the important ideas of the story.

ADDITIONAL SKILL INSTRUCTION

MAIN IDEA AND DETAILS
Review with students that a main idea is the most important idea about a topic. Supporting details tell more about the main idea. On the board, list the weather instruments from the selection. Have students choose one instrument to focus on. As students read, have them look for the main idea about their topic. When students have finished reading, tell them to write the main idea in a sentence. Then have them find two supporting details in the book that tell more about this main idea.
Graphic Sources

- **Graphic sources** present information visually and can help you better understand the text.
- Graphic sources include charts, tables, diagrams, maps, and pictures with captions.

**Directions** Study the following graphic source. Then answer the questions below.

![Bar graph showing average yearly snowfall in U.S. cities]

1. Which city has the least amount of snowfall each year?

2. Which city receives the most snowfall each year?

3. Does Chicago have more or less snowfall each year than Helena? than Boise?

4. Why do you think that San Antonio, TX, has such little snowfall?

5. Why do you think that Chicago, IL, has so much snowfall each year?
### Vocabulary

**Directions** Draw lines to match the words with their definitions.

| 1. depth       | a. the pointed top of a mountain or hill |
| 2. outrun      | b. the distance from the top to the bottom |
| 3. average     | c. burst violently |
| 4. peak        | d. dry, sandy region without water or trees |
| 5. desert      | e. to run faster than someone or something |
| 6. waterfalls  | f. the quantity found by dividing the sum of all the quantities by the number of quantities |
| 7. tides       | g. the rise and fall of the ocean |
| 8. erupted     | h. streams of water that fall from a high place |

**Directions** Imagine you are an explorer. Write a brief paragraph about one of your adventures using the words *desert, outrun, peak, tides,* and *waterfalls.*

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