

# THE CHANGING EARTH

## Unit 5

### Unit Strategies

#### BEFORE READING

#### Activate Prior Knowledge

by reading the introduction and/or summary to decide what I know about this topic.

#### DURING READING

#### Interact With Text

by identifying how the text is organized.

#### AFTER READING

#### Evaluate

by forming a judgment about whether the selection was objective or biased.

### Unit Objectives

Students will

- learn, practice, and apply the unit strategies while reading three nonfiction selections.
- use a cause-and-effect chain to organize information they have read.
- write a summary of the reading selection.
- increase vocabulary and vocabulary skills.
- develop reading fluency.

### Unit Selections

PAGES 178–219

#### Learn the strategies

#### Why Did the Dinosaurs Disappear?

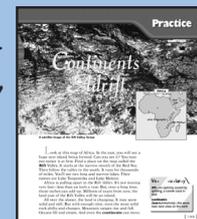
Did tiny mice bring down the “thunder lizard”? Did aliens kill off all the dinosaurs! Or was it really a giant asteroid? Many theories aim to unravel this unsolved mystery.



#### Practice the strategies

#### Continents Adrift

About 250 million years ago, seven continents were part of one supercontinent, Pangaea. The continents continue to move today. Millions of years from now, will California be an island? Read this selection to find out!



#### Apply the strategies

#### Global Warming: Too Much of a Good Thing?

Without the “greenhouse” of our atmosphere, many of us would be under ice. But if Earth continues to warm, the melting ice will flood most of the world’s coastal cities. It’s a delicate balance.



**Note:** For time management suggestions, see page Z22 in this Teacher Guide.

## Introduce Unit 5

ASK a volunteer to read the title of the unit, “The Changing Earth.” Include such comments as:

*Do you think Earth will change a great deal in the span of your lifetime? What was the planet like hundreds of millions of years ago? We’ll see what some scientists have to say about the changing Earth once we get to the selections. First, let’s talk about the strategies you’ll learn in this unit.*

POINT out the Unit 5 Strategies on page 178 and read them aloud. Then say:

*These are the strategies you will learn, practice, and apply in this unit. To do that, we’re going to read articles about dinosaurs, the planet they ruled, and the changing Earth in our time. You’ll learn the strategies while reading “Why Did the Dinosaurs Disappear?” You’ll practice the three strategies while reading “Continents Adrift.” And you’ll apply those three strategies when you read “Global Warming: Too Much of a Good Thing?”*



**Note:** This is also a good time to introduce the reading partner for Unit 5. Point out her photograph on page 178.

*This is our reading partner. She will occasionally share her thinking about the strategies and the selections.*



STUDENT PAGES  
178–179


 Unit  
5

# WHY DID THE Dinosaurs DISAPPEAR?

STUDENT PAGES 180–193

## Vo·cab·u·lar·y

Students will encounter these vocabulary words as they read this selection. A pronunciation and definition for each word appear in the margin of the Student Edition. You may wish to review these words with your students before they begin to read. Words are listed below in the order of their appearance in the text.

brachiosaur	pterosaur
stegosaurus	asteroid
triceratops	eruption
tyrannosaurs	geology
extinct	iridium
paleontologists	species
migrated	gravity
adapt	

**Note:** You may wish to complete a K-W-L Chart with students before reading this selection. See #13 in the Transparency & Blackline Master Book.



## Activities for English Language Learners

These activities can be used with students who need additional language support as they read this selection.

### **Skill:** Grammar—Sentence Structure (Complex Sentences)

Comprehending and composing complex sentences are important skills for English language learners to practice. This helps ease ELLs into using academic language. In the following activities, students will break complex sentences into simple sentences in order to reinforce their understanding of the information presented in the selection. Students will then combine simple sentences into complex sentences in order to strengthen their writing and speaking skills.

### **Written Language:** Keep It Simple

**WRITE** a complex sentence on the board and demonstrate how to break it down into two or more simple sentences. Then write another complex sentence, and ask a student volunteer to rewrite it as two or more simple sentences. (See example below.)

**PAIR** ELLs with students who are fluent in English. Have students go through the selection, identify five complex sentences, and copy them down on paper. Check students' work for accuracy.

**ASK** each pair to trade sentences with another pair. The second pair will then rewrite each complex sentence as two or more simple sentences.

**Example** (from Student Page 184):

**Complex Sentence:** *Because the cloud blocked the sun, temperatures all around the globe fell.*

**Simple Sentences:** *The cloud blocked the sun.  
Temperatures all around the globe fell.*

### **Oral Language:** Cause and Effect

**SHOW** students how to join simple sentences with the conjunctions *when* and *because* to indicate cause and effect. Have students work in pairs to create simple sentences that could be joined with these conjunctions. Students should then restate each set of sentences orally, using the appropriate conjunctions to form complex sentences.

### **Culture Note**

U.S. culture places a high value on the process of weighing evidence and forming individual opinions, but the same is not equally true for all cultures. Depending on their cultural backgrounds and belief systems, some students might have had more experience than others with the process of forming a judgment as explained on Student Page 189.



## BEFORE READING

**Activate Prior Knowledge**

by reading the introduction and/or summary to decide what I know about this topic.

ASK a volunteer to read the strategy **Activate Prior Knowledge**. Discuss the strategy with students. Ask such questions as:

*How do you activate prior knowledge? Why would this help you read?*

*Possible response: I activate prior knowledge by remembering what I already know about a topic. I've read books about dinosaurs before. This strategy says to read the introduction and summary to help me remember what I know, so I'll read them first. Thinking about what I already know makes me eager to learn more by reading the selection.*

CALL attention to the box labeled **My Thinking** and also to the photo of the reading partner in the upper left corner of the page. Ask:

*What does our reading partner say about activating prior knowledge? Do you think that dinosaurs are interesting, too?*

ASK a volunteer to read **My Thinking**.

ENCOURAGE students to read the introduction and summary. Allow time for students to discuss what they already know about dinosaurs.



## DURING READING

**Interact With Text**

by identifying how the text is organized.

**Note:** Before introducing this During Reading strategy, review with students the various ways that nonfiction texts can be organized: cause/effect, compare/contrast, problem/solution, question/answer, and sequence of events.

ASK a volunteer to read the strategy **Interact With Text**. Ask:

*How is interacting with text different from reading text?*

*Possible response: The word "interact" suggests that you think about what you are reading as you read. When you are an active reader, you pause, look for patterns, and ask questions as you read.*

*What are ways in which text can be organized?*

*Possible response: Some books and essays I read discussed events in the order that they happened, some discussed the similarities and differences between things, and others asked a question and then answered the question.*

*How can it be helpful to identify the way a text is organized as you read?*

*Possible response: If you identify the way a text is organized, it's easier to understand the relationships between the facts and ideas in a passage.*

ASK a volunteer to read **My Thinking**. Encourage students to share their own thinking about this strategy.

*Are you ready to start this unit? We'll read the first selection together.*



STUDENT PAGE  
180


 Unit  
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## Why Did the Dinosaurs Disappear?



STUDENT PAGE  
181

READ, or ask a volunteer read, the first two paragraphs on page 181. Encourage comments and questions. Use discussion prompts such as:

*Who has read about the Tyrannosaurus rex before? Is “thunder lizard” a good name for one? If a brachiosaur was too big for a Tyrannosaurus rex to eat, how big do you think it was?*



STUDENT PAGES  
182–183

- POINT out the red strategy button near the top of page 183. Trace it back to the strategy in the margin. Call attention to **My Thinking**.

*Remember the reading partner we met at the beginning of the unit? Do you see how she stopped to interact with the text? Do you agree with her thinking? What clues led her to see that the facts and ideas in the text are organized by a cause-and-effect relationship?*

### Reading Skills

As you read the selections with students, you may wish to focus on specific reading comprehension skills. Examples are noted throughout the lessons. See page Z9 in this Teacher Guide for definitions of the reading skills.

#### Reading Skill: Reading for Details

*What details support the main idea that there are different theories to explain the dinosaurs’ disappearance?*

*Possible response:* The details include one theory that worldwide flooding killed the dinosaurs. Another theory is that aliens from outer space killed them. A third theory is that they didn’t die out but evolved into birds.



STUDENT PAGES  
184–185

CONTINUE reading the selection with students, encouraging them to look for the cause-and-effect relationships that organize the text.

- CALL attention to **My Thinking** when you get to the red strategy button on page 184. Make sure that students understand the difference between cause and effect. You might ask students to come up with everyday examples of cause-and-effect relationships, such as eating a big meal because you are hungry.

#### Reading Skill: Making Inferences

*How did scientists use what they knew about the Krakatoa eruption to infer that a large asteroid might have caused the dinosaurs’ disappearance?*

*Possible response:* Scientists knew that the dust from one erupting volcano blocked the sun for a day and caused global temperatures to fall. From that information, scientists inferred that the huge amount of dust generated by an asteroid collision would block the sun for a much longer time—possibly years. If that happened, scientists could reason that long-term colder temperatures killed off the dinosaurs.

- ASK volunteers to read the **My Thinking** notes from the reading partner when you come to the strategy button on page 187. Discuss with students how scientists often observe an effect (such as dead plants) and reason back in time to its cause (such as no sun).

ENCOURAGE students to search through the text and find other cause-and-effect relationships.

*Reading Skill:* **Recall**

*What evidence did Alvarez find to support the asteroid theory of the dinosaurs' extinction?*

*Possible response:* He found a thin layer of clay that contained iridium between layers of rocks and fossils.

*Reading Skill:* **Context Clues**

*What do the words "carnivore" and "herbivore" mean? How do you know?*

*Possible response:* The text says that the herbivores starved when the plants died. That suggests that "herbivore" means a living thing that eats plants. The carnivores died after the herbivores died because there was not enough meat to eat. That suggests that carnivores are living things that eat meat.

- STOP at the final strategy button as you finish the selection. Ask a volunteer to read the **My Thinking** note. Encourage discussion about cause-and-effect relationships. Suggest that students take an effect, such as the Oort Cloud leaving its usual orbit, and speculate about other possible causes.



#### AFTER READING

### Evaluate

by forming a judgment about whether the selection was objective or biased.

ASK a volunteer to read the strategy on page 189. Ask:

*What does "objective" mean? What does "biased" mean?*

*Possible response:* When an author is objective, he or she writes about facts and ideas that are based on evidence and includes different perspectives of the same topic. Authors who are biased are influenced by personal feelings about the topic and write about ideas that support only their or others' personal feelings.

*How can you tell when a text is objective and when it is biased?*

*Possible response:* I look at how the author uses evidence to support the statements in the text. If there is believable evidence that represents more than one viewpoint or opinion, then the text is objective. If the author gives only one viewpoint and evidence that supports it, then the text could be biased.

ASK a student to read the note from the reading partner. Allow time for students to share their own evaluation of this selection.



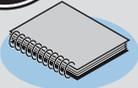
STUDENT PAGES  
186–189



STUDENT PAGE  
189


 Unit  
5

## Why Did the Dinosaurs Disappear?



TEACHER GUIDE  
PAGES 154–155



STUDENT PAGES  
190–191

### Comprehension Test

**DUPLICATE** one or both of the Comprehension Tests for this selection. (Test One is multiple choice; Test Two is short answer and extended responses.)

**GO** over the instructions with students. Encourage students to refer to the selection while taking the test. You may wish to ask students to indicate the page or pages on which they find each answer.

**AFTER** students have completed the test, correct it with them and discuss their responses. When it's necessary or useful, refer back to the text to show students where an answer is and how to find it.

### Organizing Information Model Cause-and-Effect Chain

**ASK** a volunteer to read the note in the yellow box from the reading partner.

**CALL** attention to the cause-and-effect chain. Explain:

*This is the graphic organizer that our reading partner created to help organize the information about dinosaurs. She used the selection's title as the central question that the cause-and-effect chain answers.*

**DISCUSS** the cause-and-effect chain with students, using prompts such as the following:

*Do you see how she searched the text to find a probable cause (asteroid struck), which created an effect (sunlight blocked), which then led to another effect in the chain? How would a cause-and-effect chain that started with the fracturing of the "supercontinent" theorized by some scientists be different?*

### Writing for Comprehension

**ASK** a volunteer to read the note in the yellow box from the reading partner.

**READ**, or ask a volunteer to read, the summary. With the class, identify paragraphs and sentences in the summary that correspond to links in the cause-and-effect chain. Point out that each boxed effect in the chain has become a paragraph in the body of the summary.

**CALL** attention to the notes in the right margin. Talk about the three parts of a summary—introduction, body, and conclusion—and how the reading partner developed each one.

**MAKE** sure students understand that this summary is a finished product. The writer went through several steps of rough drafts, editing, and proof-reading to get to this point.

# Vocabulary

## Hink-Pinks

### Vocabulary Objectives

Students will

- identify clues in questions to solve riddles.
- think of words that rhyme to solve riddles.

This vocabulary lesson and activity focus on *hink-pinks*—riddles with two-word answers that rhyme. Students can complete the activity as a class, in small groups, or independently. After the activity, you might have students write their own hink-pinks and see if their classmates can solve them. Remind them to think of the answer first.

### Vocabulary Activity Answers

1. tail trail
2. brain strain
3. thinner dinner
4. lizard gizzard
5. tomato potato

# Fluency

## Poetry

### Fluency Objectives

Students will

- use different tones of voice to add expression to their reading.
- practice reading poetry smoothly and with good rhythm.
- perform a poem for the class.

**READ**, or ask a volunteer to read, the Fluency Tip.

**ASK** a volunteer to read the poem, incorporating the suggestions from the Fluency Tip.

**DISCUSS** what the poem is about. Encourage students to imagine the voice of the thunder lizard. Is it a *she* or a *he*? Is this lizard angry or lonely? Lead students to add expression to the poem by thinking about what the dinosaur might be like.

**GIVE** students time to practice reading the poem, either by themselves or with a partner. Set aside enough time for students to perform the poem for an audience.



STUDENT PAGES  
192–193

### Fluency CD TRACK 13

Encourage students who need extra help with reading fluency to listen to the fluency model and then practice reading along with it.


 Unit  
5

# Continents Adrift

STUDENT PAGES 194–205

## Vo•cab•u•lar•y

Students will encounter these vocabulary words as they read this selection. A pronunciation and definition for each word appear in the margin of the Student Edition. You may wish to review these words with your students before they begin to read. Words are listed below in the order of their appearance in the text.

rift	geologists
continents	molten
ancient	convection
minerals	

**Note:** You may wish to complete a K-W-L Chart with students before reading this selection. See #13 in the Transparency & Blackline Master Book.



## Activities for English Language Learners

These activities can be used with students who need additional language support as they read this selection.

### Skill: Vocabulary—Multiple Meaning Words

Multiple meaning words can be confusing for English language learners, who might transfer previously learned meanings that don't apply in the current context. Focusing on multiple meaning words, and how to determine their meanings by using dictionaries and context, strengthens students' vocabulary learning skills.

### Written Language: Using Context Clues

**READ** aloud the first paragraph from Student Page 195. Call students' attention to the following sentence: *It starts at the narrow **mouth** of the Red Sea.*

**ASK** a volunteer to look up the word *mouth* in a dictionary and read aloud each of the given meanings. Encourage students to use context clues to determine which meaning applies to the sentence.

**PAIR** ELLs with students who are fluent in English. Have students go through the selection and locate the words from the list below. Instruct students to look up the words in dictionaries and make word webs that show all possible meanings of the word. Students should then identify which of the meanings applies in the context of the selection.

**Word List:** mouth, still, shift, range, land, plate, floor, sheet

### Oral Language: Pass It On

**DIVIDE** the class into small groups, mixing ELLs with students who are fluent in English. Have students use the multiple meaning words from the selection to play a verbal word game. Students write each word on a separate index card, place the cards face down, and take turns choosing them. The student who draws the card says a sentence that uses one of the word's meanings and then passes the card to the next player, who makes a new sentence using another meaning. The card keeps passing until the players can think of no more meanings for the word.

### Culture Note

The names of countries and continents are different in different languages. Have students work in groups to create bar graphs representing the following information: Which continent do most members of the class come from? What is the name of the continent in English and students' native languages?

## Strategies

### BEFORE READING

#### Activate Prior Knowledge

by reading the introduction and/or summary to decide what I know about this topic.

**POINT** out that there is a new reading partner for this selection. He will give students some suggestions at the beginning and end of the article to help them practice the strategies.

**ASK** a volunteer to read the strategy **Activate Prior Knowledge**. Discuss the strategy by asking:

*Do you remember how we used this strategy in the selection "Why Did the Dinosaurs Disappear?"*

*Possible response: We read the introduction and summary, which helped us remember what we already knew about dinosaurs. Some of us knew quite a lot!*

**READ**, or ask volunteers to read, the introduction and the summary. Comment on facts and ideas in the text that can help students recall their prior knowledge. Encourage students to share any facts and experiences that come to mind. Discuss students' existing knowledge of geological history. List their comments on the board as class notes to model good note-taking skills.

**REFER** to the class's responses.

*This is where we start. How does remembering what you already know before you read help you?*

*Possible response: Knowing something about a subject gives you a starting place. That way information will be easier to understand.*

*Do you think we'll learn new things to add to our existing knowledge? Do you think some of our existing knowledge will be incorrect? What would you like to learn from the selection? Let's find out.*

## Strategies

### DURING READING

#### Interact With Text

by identifying how the text is organized.

- ASK** a student to read the During Reading strategy and the note from the reading partner. Review with students the ways text can be organized and what clues they should look for to recognize each type of organization. Remind students to write down their own thinking about this strategy, just like the reading partner did in the last selection.



STUDENT PAGE  
194



#### Note Taking

Explain how you want students to record their notes as they read this selection. Options might include:

- Fold a sheet of notebook paper in half lengthwise. Write the page number on the left of the fold and notes on the right.
- Write notes on self-sticking notes and place them in the margins.

Do not require students to write complete sentences. Notes are intended to be an informal way for students to use the strategies.

Unit  
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## Continents Adrift

STUDENT PAGE  
195

READ, or ask a volunteer to read, page 195. Encourage comments and questions. Ask questions such as:

*What is the author's point of view about this topic? How can you identify his point of view in the text?*

*Possible response: I think the author feels a sense of awe about how the continent of Africa is changing. When I read the phrases "millions of years," "mountains rising and falling," and "oceans filling and emptying," I understood the author's sense of wonder.*

HELP students use the strategy **Interact With Text** by asking:

*What is the effect of Africa pulling one inch apart in the Rift Valley every year?*

*Possible response: According to the author, one day there will be a huge, new island to the east of the rift.*

STUDENT PAGES  
196–198

READ the selection as a whole class, or assign small groups or partners to read and discuss the selection and the strategies.

**Reading Skill: Analogy**

*What did the French scientist Buffon observe after studying a world map? What did the observation lead him to believe? Explain.*

*Possible response: Buffon noticed that the edges of the coastline were similar to the pieces of a puzzle. Puzzle pieces must fit together to make a bigger picture. Buffon believed that the continents must fit together to make a bigger continent.*

- CALL attention to the red strategy buttons on pages 197 and 198. Encourage students to stop and identify how the text is organized. Have students record notes about the cause-and-effect relationships they find. Invite volunteers to share their thoughts. Encourage discussion and questions.
- REPEAT this process on each page of the selection. Possible responses are provided for each red strategy button on the student pages.

**p. 197:** *Cause: Long ago Africa and South America were part of one large land mass. Effect: Today Africa and South America share the same fossils, all from the same era.*

**p. 198:** *Cause: The land beneath us is floating on a sea of molten rock. Effect: Over time, the continents drift, like ice chunks drifting on water.*

GUIDE students as they read the map on page 198. If students have difficulty in seeing changes in the continents over time, draw their attention on the lower map to East Asia and the east coast of Africa, where the continental drift is most evident.

**Reading Skill: Supporting Detail**

*How has Earth's magnetic field helped scientists discover how the continents have moved?*

*Possible response: Because the minerals in molten rock are pulled by Earth's magnetic field, scientists study the direction and pattern of the minerals in different rocks. The different mineral patterns show scientists how the continents are moving.*



STUDENT PAGES  
199–201

*Reading Skill: Search*

**How many continents are there? How many plates or slabs make up Earth's crust?**

**Possible response:** There are 7 continents and 14 plates or slabs that make up Earth's crust.

DISCUSS the diagram of convection on page 199, making sure students understand how convection creates continual motion of the continental plates.

- p. 199:** Cause: Heated hot water rises to the surface. Effect: Cooler water is pushed out of the way and toward the bottom, where it gets hot and rises—leading to the cyclical process called convection.

*Reading Skill: Main Idea*

**What is the main idea of the section "The Moving Force"?**

**Possible response:** The theory that continents are moving is now accepted by science, and the force that may be the cause is convection.

*Reading Skill: Analysis*

**Why have the plates in California created what we call the San Andreas Fault—a gap—rather than the San Andreas Mountains?**

**Possible response:** Plates come together in different ways. The plates in California aren't colliding but are grinding past each other, and the plates in India and Asia are crashing into each other more forcefully, making huge mountains.

- p. 201:** Cause: The Indian plate has pushed into Asia for the past 50 million years. Effect: The Himalayas rose up where the plates crunch together, and they're growing taller every year! Cause: Two plates bump together. One edge sinks under the other. Effect: Earthquakes and volcanoes result.

- p. 202:** Cause: Two plates moving in opposite directions stick together and build up energy. Effect: The energy finally releases, creating an earthquake.

*Reading Skill: Synthesis*

**Before we read "What Will the Future Bring?" how do you think the continents will move in the future?**

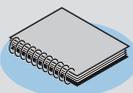
**Possible response:** We have read that Earth's plates will continue to move. So I predict that North America and Europe will continue to drift apart. The Himalayas will continue to grow. California may become an island.



STUDENT PAGES  
202–203

Unit  
5

## Continents Adrift

STUDENT PAGE  
203TEACHER GUIDE  
PAGES 156–157TRANSPARENCY &  
BLACKLINE MASTER #9**Strategies**

## AFTER READING

**Evaluate**

by forming a judgment about whether the selection was objective or biased.

ASK a volunteer to read the strategy on page 203. Ask:

*How did we use the strategy Evaluate after the last selection?*

*Possible response: We looked to see if the article included different points of view and if the author used evidence to support them.*

*Do you think the author of this selection was objective or biased? Why?*

*Possible response: I think that the author was objective. A lot of facts support the ideas in the article. The author did not seem influenced by other people's personal feelings about the topic.*

ASK students to use their notes to write a short evaluation of what they've learned in "Continents Adrift."

**Comprehension Test**

DUPLICATE one or both of the Comprehension Tests for this selection.

GO over the instructions with students. Encourage students to refer to the selection while taking the test. You may wish to ask students to indicate the page or pages on which they find each answer.

AFTER students have completed the test, correct it with them and discuss their responses. When it's necessary or useful, refer back to the text to show students where an answer is and how to find it.

**Organizing Information**  
**Scaffolded Cause-and-Effect Chain**

USE the partially completed cause-and-effect chain in the Transparency & Blackline Master Book to guide students as they organize information from "Continents Adrift." You may wish to have students look back at the model graphic organizer on page 190 to remind them of the cause-and-effect chain's structure (e.g., a cause inside the top left box leads to an effect, which becomes the next cause in the chain, etc.).

**Writing for Comprehension**

ENCOURAGE students to use their notes and completed cause-and-effect chain to write a summary of "Continents Adrift." If student interest and time permit, you may wish to have students go through the writing process by using their notes to write a draft of a summary, revise and edit this draft, and then create a complete and polished summary of this selection. Working through this process will help students internalize what they have read.

# Vocabulary

## Words From Greek and Roman Mythology

### Vocabulary Objectives

Students will

- learn about characters from Greek and Roman mythology.
- identify words that come from mythological characters.
- match a word to the mythological character from which it was derived.

This vocabulary lesson and activity focus on words derived from Greek and Roman mythological characters. Students can complete the activity as a class, in small groups, or independently.

### Vocabulary Activity Answers

- |      |      |
|------|------|
| 1. c | 4. b |
| 2. e | 5. d |
| 3. a | 6. f |

# Fluency

## Historical Description

### Fluency Objectives

Students will

- practice reading a historical description with expression.
- identify the mood of the narrator.
- perform a reading for the class.

**READ**, or ask a volunteer to read, the Fluency Tip. Then ask a volunteer to read the historical description, incorporating the suggestions from the Fluency Tip.

**ASK** students how they might find clues in the description that tell students what the author might have been feeling. Point out words like *terrible*, *fiery*, and *dark*. Talk about the mood of the piece. Suggest that students explore various ways of conveying fear and awe.

**GIVE** students time to practice reading on their own or in pairs. When they are ready, allow students to perform a reading for an audience.



STUDENT PAGES  
204–205

### Fluency CD TRACK 14

Encourage students who need extra help with reading fluency to listen to the fluency model and then practice reading along with it.

Unit  
5Global Warming:  
Too Much of a Good Thing?

STUDENT PAGES 206–215

## Vo•cab•u•lar•y

Students will encounter these vocabulary words as they read this selection. A pronunciation and definition for each word appear in the margin of the Student Edition. You may wish to review these words with your students before they begin to read. Words are listed below in the order of their appearance in the text.

atmosphere	radiation
climate	meteorologists
average	absorb
nitrogen	equations
oxygen	fertile
argon	economies
carbon dioxide	informed
methane	

**Note:** You may wish to complete a K-W-L Chart with students before reading this selection. See #13 in the Transparency & Blackline Master Book.

Activities for  
English Language Learners

These activities can be used with students who need additional language support as they read this selection.

**Skill: Grammar—Conditionals (Could/Would)**

Conditionals, which often carry subtle variations in meaning, can be confusing for ELLs. In this section, focus on the use of the auxiliary (helping) verbs *could* and *would*. This focus improves students' understanding of key information in the selection.

**DISCUSS** the uses of *could* and *would* in the following sentences:

*Warmer temperatures **could** cause the polar ice caps to melt.*

*The melting ice **would** raise sea levels.*

**NOTE** that the helping verb *could* doesn't carry a meaning that is as definite as the helping verb *would*. *Could* implies only that something *might* happen, but *would* suggests a more probable prediction.

**Oral Language: If I Were Rich and Famous . . .**

**DIVIDE** the class into small groups, mixing ELLs with students who are fluent in English. Give each group a conditional clause, such as "If I were rich and famous," and have one student finish the sentence using the helping verb *would*. (*If I were rich and famous, I would have lots of money.*) The next student will turn the second half of the preceding sentence into a conditional clause and then create a new sentence. (*If I had lots of money, I would have a big house.*) Students should continue, round robin fashion, creating as many conditional sentences as they can.

**Written Language: Could vs. Would**

**PAIR** ELLs with students who are fluent in English. Have students go through the selection and list all the instances of *could* and *would*. Discuss why the writer chose to use one word or the other.

**Culture Note**

The selection refers to geographical locations around the world, including Boston, Miami, New Orleans, New York, San Francisco, London, Tokyo, Venice, Rio de Janeiro, the Rocky Mountains, and the Sahara Desert. Have students locate each of these places on a world map. Discuss the far-reaching, international effects of global warming. Note that the names of some places may be different in students' native languages. For example, London is *Londres* in Spanish.

## Strategies

### BEFORE READING

#### Activate Prior Knowledge

by reading the introduction and/or summary to decide what I know about this topic.

### DURING READING

#### Interact With Text

by identifying how the text is organized.

### AFTER READING

#### Evaluate

by forming a judgment about whether the selection was objective or biased.

**REVIEW** the strategies with the students, referring back to their use in the two previous selections.

**READ**, or ask a volunteer to read, the note below the strategies.

**ASK** students to read “Global Warming: Too Much of a Good Thing?” and apply the strategies they have learned and practiced in this unit. If you (or a reading tutor or classroom aide) are reading the selection with students, use the questions and directions modeled in earlier selections as a guide.

**Note:** Because students are expected to read the selection and apply the strategies they have learned, extended instructional information is not provided.

## Comprehension Test

**ADMINISTER** one or both of the Comprehension Tests for this selection. Correct the tests with students and discuss their responses.

## Organizing Information Blank Cause-and-Effect Chain

**USE** the blank cause-and-effect chain in the Transparency & Blackline Master Book to guide students as they organize information from “Global Warming: Too Much of a Good Thing?” You may wish to have students look back at the model graphic organizer on page 190 to remind them of the cause-and-effect chain’s structure (e.g., a cause in the upper left box leads to an effect in the next box, which in turn serves as the next cause, etc.).

## Writing for Comprehension

**ENCOURAGE** students to use their completed cause-and-effect chain and notes to write a summary of “Global Warming: Too Much of a Good Thing?” Give students time to draft their summaries and then revise, edit, and polish them.



STUDENT PAGES  
206–213



### Note Taking

Remind students to jot down their own thinking about the strategies.

Point out that there are no red buttons in this selection. Students are to choose when they will stop, think, and write notes about the strategies as they read this selection.



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TRANSPARENCY &  
BLACKLINE MASTER #10


 Unit  
5

## Global Warming: Too Much of a Good Thing?


 STUDENT PAGES  
214–215

## Vocabulary

### Root Words

#### Vocabulary Objectives

Students will

- learn how roots are combined with prefixes.
- find the meaning of words by knowing the meaning of their prefix and root.

This vocabulary lesson and activity focus on the root word *sphere* as it is combined with various prefixes. Students can complete the activity as a class, in small groups, or independently. Because the words used in the activity are technical terms, students may need to refer to a dictionary for help.

#### Vocabulary Activity Answers

1. c
2. d
3. e
4. b
5. a

## Fluency

### Readers' Theater

#### Fluency Objectives

Students will

- practice reading a dialogue in a conversational style.
- use vocal expression to portray a character.
- perform a script for the class.

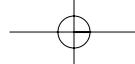
**READ**, or ask a volunteer to read, the Fluency Tip. Then ask two volunteers to read the script of the father and son aloud, incorporating suggestions from the Fluency Tip.

**DISCUSS** with students how they might convey enthusiasm, interest, and respect. Also mention pace and volume as factors in how to vary the way they perform the conversation. Sometimes people talk faster or more loudly when they are enthusiastic; sometimes they slow down to make a strong point.

**ASSIGN** partners to practice the script. Allow students to change the gender of their characters if they wish. Give the students time to practice in pairs. When they are ready, ask students to perform the script for the class.

#### Fluency CD TRACK 15

Encourage students who need extra help with reading fluency to listen to the fluency model and then practice reading along with it.



# READING

## in the Real World



STUDENT PAGES  
216–217

### Reading Objectives

Students will

- practice reading maps of two different scales.
- understand how to interpret maps by answering discussion questions.

## MAP

### Where the Asteroid Hit

**TALK** with students about the kinds of information maps provide, such as distance, routes of travel, topography, and orientation.

**GUIDE** students to see that the right-hand map is a small-scale version of the left-hand map. Locate the impact site first on the large-scale map and then on the small-scale map. Remind students of the four points of the compass.

**GIVE** students time to study the maps on their own, or go over the maps as a class.

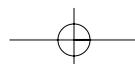
**HAVE** students respond to the comprehension questions through discussion or on their own paper.

### Answers to Discussion Questions:

1. **b.** The map on the left shows a large area that includes the area shown on the map on the right. (*analysis*)
2. **c.** The impact site is in Mexico, according to the map. (*using details*)
3. **Possible answers:** No, because no humans lived on Earth at that time. (*synthesis*)
4. **Possible answers:** Cayman Islands (*search/recall*)
5. The correct answer will be **a, b, c,** or **d,** depending on your location. (*application: generalization*)
6. **a.** The asteroid hit 65 million years ago, causing the disappearance of the dinosaurs long before humans existed on Earth. (*organization: sequence of events*)
7. **Possible answer:** If the asteroid had landed in the water, perhaps it would not have thrown up so much dust, reducing the impact on plants—and dinosaurs. (*application: inference*)
8. **Possible answer:** Yes. Knowing more about the extinction of the dinosaurs helps us understand Earth's history. Understanding history might help us better understand the present and make predictions about the future. (*evaluation*)

### Reading Skills

The type of reading comprehension question is identified in parentheses after each answer. See page Z9 of this Teacher Guide for definitions of the reading skills.



# Unit 5



STUDENT PAGES  
218–219

## Technology Tip

Teach media literacy by asking students to apply the strategy *Evaluate* to articles on the Internet. Have students find two interesting Web sites on a related topic. Ask them to compare the Web sites and then explain which site is more objective.



TRANSPARENCY &  
BLACKLINE MASTER #14

# CONNECTING to the Real World



ENCOURAGE students to complete and share one of the suggested extension activities. There should be something for everyone, as projects involve creating, researching, writing, and presenting.

## Related Books

ENCOURAGE students to check out the books from this list that pique their interest. If possible, you may want to get them from your library and have them available to students during classroom time.

## Interesting Web Sites

ENCOURAGE students to use these Web sites as part of the research for their projects. Explain that some Web site content may be copyrighted, while other sites give permission to use the material. Using someone else's words and artwork without permission is plagiarism.

**Note:** The listed Web sites have been carefully researched for accuracy, content, and appropriateness. However, Web sites are subject to change. Internet use should always be carefully monitored.

## Strategy Transfer Chart

PROVIDE opportunities for students to use the Strategy Transfer Chart with selections in their other textbooks and with nonfiction magazine and newspaper articles. Using the strategies in this way will help students transfer these strategies from the *Read for Real* text to their other reading, both inside and outside the classroom.

## Home Connection



ASK students to share three interesting facts they learned about the movement of continents and Earth's crust with a family or community member.

HAVE students generate several questions about the geological phenomena to discuss with the family or community member. Possible discussion questions might include:

*Do you believe that the continents used to be joined? What evidence do you think explains it? Is there an active volcano in the continental United States? Have you ever experienced an earthquake? Were you scared? Do you believe that California may become an island someday?*

ASK students to record their questions and the answers in note form.

PROVIDE an opportunity for students to share their interesting facts, questions, and answers with the rest of the class.