SuperCroc

Magazine Article by Peter Winkler

Are MONSTERS *real?*



R2.1 Identify the structural features of popular media (e.g., newspapers, **magazines,** online information) **and use the features to obtain information.**

R2.4 Clarify an understanding of texts by creating outlines, logical notes, **summaries,** or reports.

Also included in this lesson: R2.2 (p. 853), **R2.7** (p. 855), **W1.2abc** (p. 855)

KEY IDEA Monsters have always existed in the world of the imagination. Yet fierce, deadly creatures that could be considered **monsters** exist in reality as well. In fact, scientists have discovered a prehistoric creature so terrifying that even dinosaurs may have feared it.

CHART IT Make a chart that shows your favorite monsters. In one column, list imaginary creatures from stories you've read and movies you've seen. In the other, list some of the dangerous creatures from the real world that you have learned about from books, television programs, and nature magazines. Share your chart with your classmates. Which list is more frightening?





ELEMENTS OF NONFICTION: TEXT FEATURES

Text features are design elements that help to organize information visually. They highlight key ideas and provide additional information. Some common text features are

- **subheadings,** or section titles, which identify the main idea or topic of the information that follows
- **graphic aids,** such as maps, photographs, or graphs
- **captions,** which provide information about a graphic aid

As you read "SuperCroc," identify the text features it contains, and notice the information they provide.

READING STRATEGY: SUMMARIZE

When you **summarize,** you use your own words to retell the main ideas of a spoken or written work. A summary is generally no more than one-third the length of the original work.

As you read "SuperCroc," use a chart like the one shown to record key information from each section of the article. You will use this information later when you write your summary.

Section	Key Information
Introduction	scientists studying dinosaur fossils in Niger
What Makes This Croc So Super?	

VOCABULARY IN CONTEXT

Peter Winkler uses the boldfaced words to help tell about the discovery of a real-life monster from the past. To see how many you know, substitute a different word or phrase for each one.

1. Paul Sereno is a dinosaur **expert.**
2. Dinosaurs have been **extinct** for millions of years.
3. His team found more than just one **fossil.**
4. This **species** of crocodile was previously unknown.
5. The **predator** could have eaten anything it wanted.

Author Online

CALIFORNIA

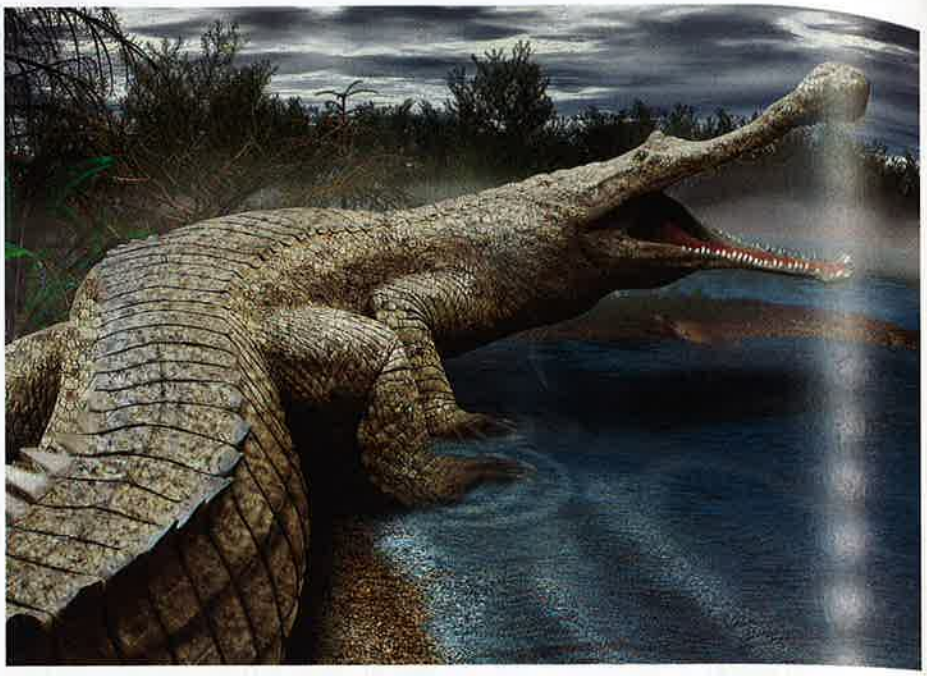
Adventure School Peter Winkler is a freelance writer from Long Island, New York. He once realized he was in over his head—literally—when he was unable to climb back into an overturned kayak in the cold waters of the Pacific Ocean. He ended up having to swim to shore. Winkler's assignment had been to cover the Presidio Adventure Racing Academy. He realized later that although the experience was frightening, "somehow I'd still learned the key lesson of adventure school: Stretch yourself, and life will take shapes you never imagined."



Peter Winkler
born 1963

National Geographic Writer Peter Winkler has been writing for the National Geographic Society since 1987. His writings include Web features, science articles for young people, television scripts, educational materials, and three books. He has also written about movies for CineFan, an online movie database.

MORE ABOUT THE AUTHOR
For more on Peter Winkler, visit the **Literature Center** at **ClassZone.com.**



SUPERCROC

PETER WINKLER

Out of Africa comes a giant reptile that lived with dinosaurs—and ate them.

"We're stuck again!" Scientist Paul Sereno and his team said those words many times as they drove into a rugged part of Africa. Desert sand kept stopping their vehicles. It took 10 hours to go just 87 miles.

That long crawl ended at Gadoufaoua,[1] a dry region in the country of Niger.[2] To most eyes, the place looked empty. There was sand. There was wind. There was nothing else. Or so it seemed.

But Sereno saw much more. He saw a chance to find dinosaurs. Sereno, a paleontologist, knew that the region contains countless **fossils** from ancient dinosaurs. Gadoufaoua is one of



The country of Niger is in West Africa. A

fossil (fŏs'əl) *n.* the remains of a living thing, preserved in soil or rock

A **TEXT FEATURES**
What information does this map provide about Gadoufaoua?

1. **Gadoufaoua** (gə-dōō'fä'wŏh).
2. **Niger** (nī'jər).

Africa's richest sources of dino fossils.

Sereno found some fossils there in 1997. He came back in 2000 to seek more. The team spent four months in the desert. Crew members woke at 6:00 each morning, then explored the sand dunes for about 12 hours. They worked even when the temperature hit 125°F.

And they found fossils. By the end of the expedition, Sereno and his team had collected 20 tons of bones. Most of the fossils came from dinosaurs, including types never seen before. Others came from turtles, fish, and crocodiles.

One of those crocodiles was *Sarcosuchus imperator*,[3] a name that means "flesh crocodile emperor." Sereno's team nicknamed it "SuperCroc." B



Using SuperCroc's jaw bone and their own bodies, Sereno (fourth from front) and his team demonstrate SuperCroc's estimated length.

What Makes This Croc So Super? C

In a word, size. The skull alone was six feet long. Sereno says it's "about the biggest I've ever seen."

Naturally, Sereno wondered how big SuperCroc was overall. The team found only part of its skeleton, so Sereno had to make an estimate. To do that, he looked at crocodiles that live today. He and other **experts** compared the animals' skull and body sizes.

Based on his research, Sereno concluded that an adult SuperCroc could grow to be 40 feet long and probably weighed as much as 10 tons. That's heavier than an African elephant.

Those measurements make SuperCroc one of the largest crocodiles ever to walk Earth. Today's biggest crocs grow to about 20 feet. D

3. ***Sarcosuchus imperator*** (sär'kō-sōō'kĭs ĭm-pîr'ā-tôr).

B SUMMARIZE
What have you learned about SuperCroc so far? Note this information in your chart.

C TEXT FEATURES
Preview the article's **subheadings.** What do you think the article will tell you about SuperCroc?

expert (ĕk'spûrt') *n.* one who is skilled in or knowledgeable about a particular thing

D SUMMARIZE
What have you learned from this section of the article? Record this information in your chart.

extinct (ĭk-stĭngkt') *adj.* no longer existing

predator (prĕd'ə-tər) *n.* an animal that feeds on other animals

species (spē'shēz) *n.* a variety or type of something

E SUMMARIZE
What have you learned about SuperCroc's appearance? Add this information to your chart.

A Different-Looking Beast



Illustration of SuperCroc

SuperCroc's long head is wider in front than in the middle. That shape is unique. No other croc—living or **extinct**—has a snout quite like it.

At the front of SuperCroc's head is a big hole. That's where the nose would be. That empty space may have given the ancient **predator** a keen sense of smell. Or perhaps it helped SuperCroc make noise to communicate with other members of its **species.**

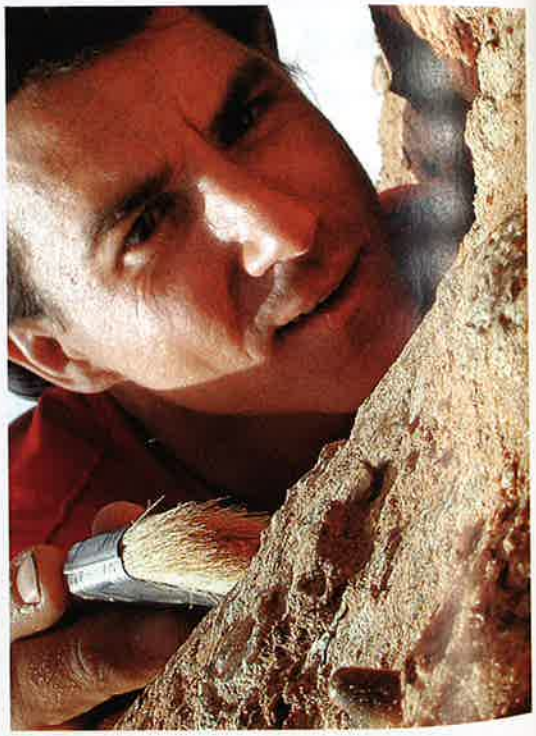
SuperCroc wore serious armor. Huge plates of bone, called scutes, covered the animal's back. Hundreds of them lay just below the skin. A single scute from the back could be a foot long! E

When Did SuperCroc Live?

Estimating a fossil's age is a challenge. Sereno and his team looked carefully at the group of fossils they had found. They compared the fossils to others whose ages the scientists did know. Based on those comparisons, Sereno believes SuperCroc lived about 110 million years ago.

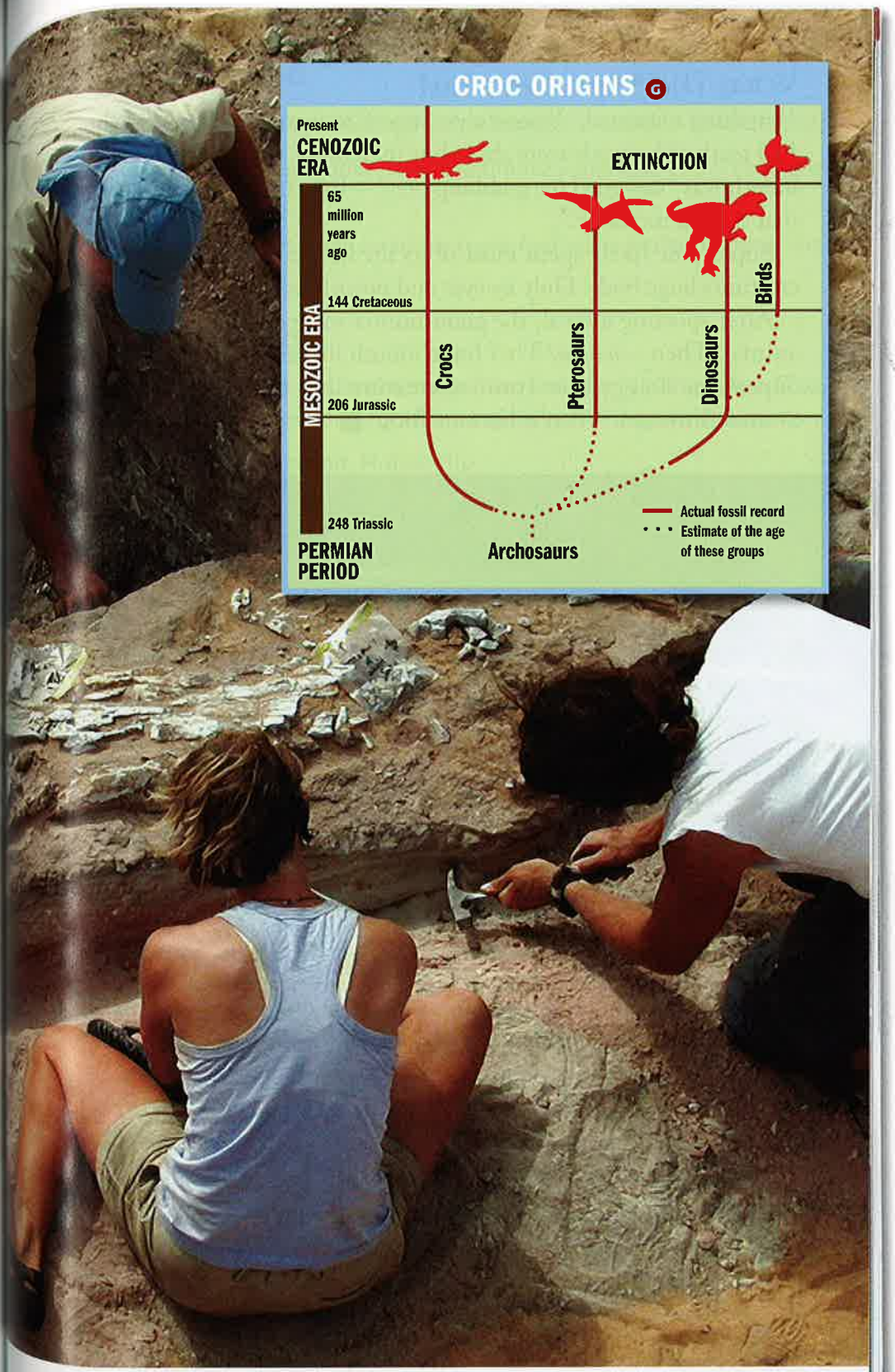
Gadoufaoua looked a bit different in those days. What is now a desert was a land of winding rivers. Plenty of trees grew along the banks. Huge fish swam the rivers, while various dinosaurs lived in the forests.

Five or more crocodile species lurked in the rivers. SuperCroc, Sereno says, was "the monster of them all." F



Paul Sereno brushes sand from "sabercroc," another of several species of crocodile fossils found at Gadoufaoua.

F SUMMARIZE
Reread lines 68–90. Note what you learned in this section in your chart.



Sereno's team carves out the skulls of two giant crocs found facing each other. H

G TEXT FEATURES
What information does this **graph** provide about crocodiles?

H TEXT FEATURES
What information do this **photograph** and its **caption** add to the article?

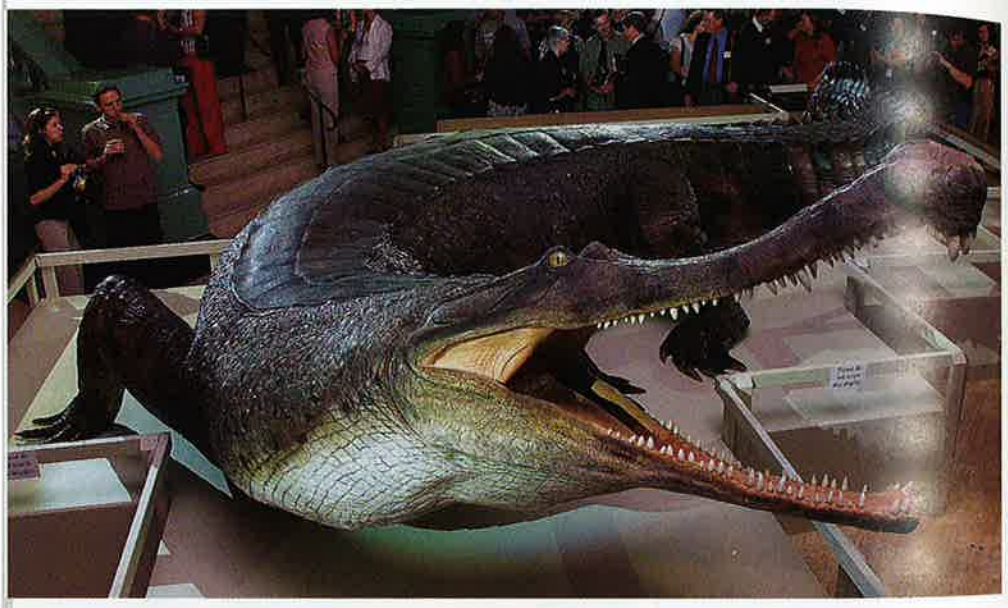
What Did SuperCroc Eat?

"Anything it wanted," Sereno says. SuperCroc's narrow jaws held about 130 teeth. The teeth were short but incredibly strong. SuperCroc's mouth was "designed for grabbing prey[4]—fish, turtles, and dinosaurs that strayed too close."

SuperCroc likely spent most of its life in the river. Water hid the creature's huge body. Only its eyes and nostrils poked above the surface.

After spotting a meal, the giant hunter moved quietly toward the animal. Then—*wham!* That huge mouth locked onto its prey. SuperCroc dragged the stunned creature into the water. There the animal drowned. Then it became food. I

I SUMMARIZE
Reread lines 91–101. What does this section tell you about SuperCroc?



A crowd gathers around the first life-sized model of SuperCroc at the Australian Museum in Sydney, Australia. J

J TEXT FEATURES
What does the **caption** help you understand about the photograph?

What Happened to SuperCroc?

The giant beast probably lived only a few million years. That raises a huge question: Why didn't SuperCroc survive?

Sereno suspects that SuperCrocs were fairly rare. After all, a monster that big needs plenty of room in which to live. Disease or disaster could have wiped out the species pretty quickly. But no one knows for sure what killed SuperCroc. That's a mystery for future scientists. K

K SUMMARIZE
Why didn't SuperCroc survive? Add this information to your chart.

4. **prey:** animals that become the food of another animal.

Comprehension

1. **Recall** Why are Paul Sereno and his team interested in Gadoufaoua?
2. **Recall** What length does Sereno estimate SuperCroc could have grown to be?
3. **Clarify** What did Sereno and his team find in Gadoufaoua other than crocodile fossils?



R2.1 Identify the structural features of popular media (e.g., newspapers, magazines, online information) **and use the features to obtain information.**

R2.2 Analyze text that uses the compare-and-contrast organizational pattern.

R2.4 Clarify an understanding of texts by creating outlines, logical notes, **summaries,** or reports.

Critical Analysis

4. **Summarize** Look at the chart you filled in while reading "SuperCroc." Clarify your understanding of the article by writing a brief summary.
5. **Compare Information** Notice the writer's use of compare-and-contrast organization in lines 49–58. According to this passage, what are two ways that SuperCroc differs from crocodiles of today? Use a chart like the one shown to list your responses.

SuperCroc	Crocs Today

6. **Examine Text Features** Review the article's photographs and captions. What kind of information can photographs and captions provide that the regular text usually cannot?
7. **Draw Conclusions** Reread the section subtitled "When Did SuperCroc Live?" on page 850. Judging by the way Sereno and his team estimated the age of SuperCroc's fossils, what conclusions can you draw about how scientists determine the age of ancient creatures?

Extension and Challenge

8. **Big Question Activity** With a small group of classmates, examine the **monster** charts you created before reading "SuperCroc." Recall the list of creatures you chose as the most frightening. Has reading "SuperCroc" changed the way you feel? Take turns discussing whether you would still make the same choice, and explain your reasons why.
9. **Inquiry and Research** Paleontologists like Paul Sereno don't just dig for fossils in the desert. Conduct some research to discover how a person becomes a paleontologist. Find out what a paleontologist might have to do in order to prepare for an expedition, and what happens after the expedition is finished. Present your findings to the class.

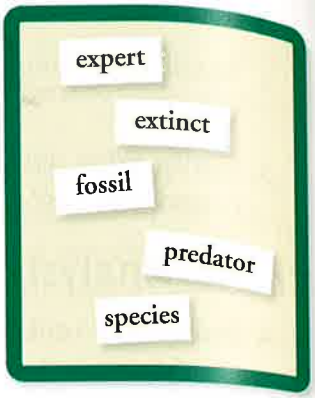
RESEARCH LINKS
For more on paleontology, visit the **Research Center** at **ClassZone.com.**

Vocabulary in Context

VOCABULARY PRACTICE

Choose the letter of the word that is not related in meaning to the other words.

1. (a) skeleton, (b) fossil, (c) bone, (d) alive
2. (a) expert, (b) inexperienced, (c) authority, (d) knowledgeable
3. (a) kind, (b) species, (c) type, (d) desert
4. (a) extinct, (b) living, (c) active, (d) breathing
5. (a) slayer, (b) admirer, (c) predator, (d) killer



VOCABULARY IN WRITING

Imagine that you are part of Paul Sereno's team. What would you find most exciting? Using at least two vocabulary words, write a paragraph describing your experience. You might begin like this.

EXAMPLE SENTENCE

*Finding a **fossil** in the middle of the desert is extremely exciting!*

VOCABULARY STRATEGY: WORD ORIGINS

Many common words in the English language have interesting histories. For example, the vocabulary word *fossil* comes from the Latin word *fossilis,* which means "dug up." It makes sense, then, that a fossil is something that is uncovered, or dug up, from rock or earth.

Information about a word's origin can be found in most dictionaries. Understanding the **etymology,** or history of a word, can help you connect the word's meaning to something you already know. An example of an etymology is shown here:

argue (är'gyo͞o) *v.* to disagree or quarrel [from Latin *argutare,* to babble, chatter]

PRACTICE Look up the etymology of each word in a dictionary. Write the word's origin, and explain how knowing the word's history can help you remember its meaning.

1. nominate
2. agriculture
3. regime
4. segregate
5. panorama
6. coif

VOCABULARY PRACTICE
For more practice, go to the **Vocabulary Center** at **ClassZone.com.**

Reading-Writing Connection



R2.7, W1.2abc

Demonstrate your understanding of "SuperCroc" by responding to these prompts. Then complete the **Grammar and Writing** exercise.

WRITING PROMPTS	SELF-CHECK
A. Short Response: Write a Description Imagine that you could go back in time and see SuperCroc with your own eyes. Write a **one-paragraph description** of the prehistoric **monster** and its surroundings.	***A strong description will . . .*** • provide information about SuperCroc's environment • include details about the creature's appearance
B. Extended Response: Evaluate an Article Decide whether "SuperCroc" is a well-written article. Does the author present his information clearly and in a style that holds your interest? Write a **two- or three-paragraph evaluation** of the article.	***A thorough evaluation will . . .*** • offer a clear statement of your opinion • provide specific examples from the article

GRAMMAR AND WRITING



LC1.4 Use correct capitalization.

CAPITALIZE CORRECTLY The **titles** of magazine articles, books, poems, and short stories must all be **capitalized** correctly. When writing a title, capitalize the first and last words, any important words, and all verbs. Do not capitalize conjunctions, articles, or prepositions of fewer than five letters.

Original: Finding Fossils In The Desert Dunes

Revised: Finding Fossils in the Desert Dunes

PRACTICE Rewrite each title by correcting any capitalization errors.

1. Monsters of The Past, The Present, and The Future
2. The day Godzilla met the gila monster
3. Silent Predator Of The African Waters
4. the scientist and the giant fossil

For more help with capitalizing titles, see page R51 in the ***Grammar Handbook.***