# NATIONAL GEOGRAPHIC Explorer!

## Pioneer Edition

nationalgeographic.com/ngexplorer/pioneer/teachers

### *Dear Teacher:*


We are always striving to make NATIONAL GEOGRAPHIC EXPLORER more valuable to you and your students. As you know, reading strategies are some of the most useful skills your students can learn.

That is why, starting with this issue, we will identify a different reading strategy at the beginning of each article. This will remind students about using the strategies and give them additional practice doing so.

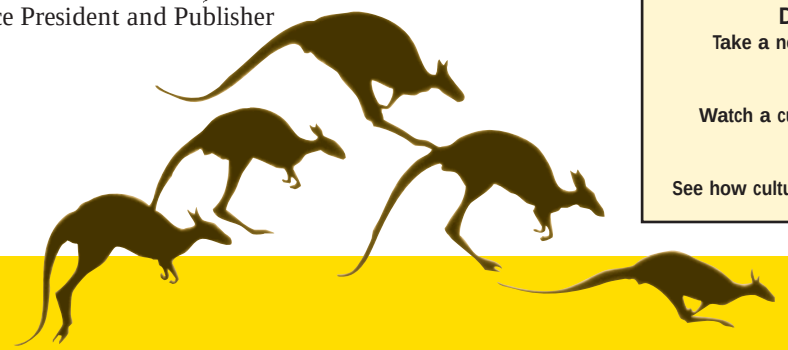
Many students, even good readers, can get confused as they read. The reading strategies give students tools to limit and control confusion. They turn students into active, engaged readers who can make inferences and draw conclusions.

The addition of the reading strategies to each story will help connect NATIONAL GEOGRAPHIC EXPLORER to both your content and reading standards. They will also help your students become better lifelong learners.

Please let me know how this new feature works for you. You can send your feedback to ***fdowney@ngs.org.***

Sincerely yours,

Francis Downey
Vice President and Publisher



## In This Issue



## Answer Key

**Earth's Extremes** • Teacher's Guide, p. 3
**1.** The Amazon has the most water of any river.
**2.** Angel Falls is the tallest waterfall on Earth.
**3.** Great Barrier Reef is the largest reef on Earth.
**4.** The Sahara is the largest desert on Earth.
**5.** Mount Everest is the highest place on Earth.

**On the Move** • Teacher's Guide, p. 5
**1.** Hollow bones make birds light enough to fly. **2.** A swim bladder helps a fish float or sink. To rise, the fish fills the bladder with air. To sink, the fish lets air out of the bladder. **3.** Moving helps animals find food and escape danger.

**Who Was Sacagawea?** • Teacher's Guide, p. 7
**1.** Sacagawea, a Native American woman, **2.** Sacagawea's life, especially her travels with Lewis and Clark, **3.** the western United States, **4.** late 1700s and early 1800s, **Bonus.** Brave and strong, she helped the explorers Lewis and Clark.

**Review** • Teacher's Guide, p. 8
**1.** d, **2.** c, **3.** d, **4.** b, **5.** d, **6.** b, **7.** c, **8.** a

## Next Issue

Sept. Oct. Nov./Dec. Jan./Feb. Mar. Apr. May

**Discovering Saturn**
**Take a new look at the ringed planet.**

**Leopard Lessons**
**Watch a cub learn to survive in the wild.**

**Making Faces**
**See how cultures use masks and face painting.**

REVIEW

Name: _____

# COMPREHENSION CHECK

Fill in the circle before the correct answer to each question below.

**1.** What country would you visit to see the world's tallest waterfall?

- (a) Australia
- (b) Brazil
- (c) Nepal
- (d) Venezuela

**2.** When did Sacagawea meet Lewis and Clark?

- (a) 1604
- (b) 1704
- (c) 1804
- (d) 1904

**3.** What happens if you pick up a lemon shark pup?

- (a) It bites.
- (b) It dies.
- (c) It jumps away.
- (d) It slips into a sleep-like state.

**4.** What does a swim bladder do?

- (a) It helps a fish breathe.
- (b) It helps a fish float or sink.
- (c) It helps a fish digest food.
- (d) Scientists do not know.

**5.** How did Sacagawea help Lewis and Clark?

- (a) She made peace with Native Americans.
- (b) She made trades.
- (c) She found food.
- (d) all of the above

**6.** What shark part is used in soup?

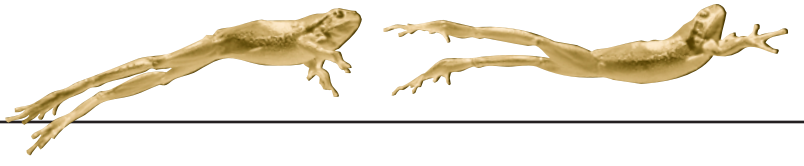
- (a) eye
- (b) fin
- (c) liver
- (d) tooth

**7.** Which animal uses its tail for balance as it hops?

- (a) gecko
- (b) horse
- (c) kangaroo
- (d) manatee

**8.** What river carries more water than any other?

- (a) Amazon
- (b) Congo
- (c) Mississippi
- (d) Nile



PAGES 6–13

# Earth's Extremes

## Vocabulary

Direct attention to Wordwise on p. 13. Read aloud each sentence below and ask which glossary entry best fills the blank.

- A _____ can turn chemicals from the sea into stone. *(coral polyp)*
- We rode mules down to the bottom of the _____. *(canyon)*
- Tiny sea creatures can take thousands of years to build a _____. *(coral reef)*
- You might find a cactus in a _____. *(desert)*

## Reading Strategy

Before students read the article, point out that one of the best ways to make sure they understand what they have read is to stop reading and think about what they have just read. Copy and hand out the activity sheet on p. 3 of this guide. Ask students to complete it as they read.

## Fast Facts

- Mount Everest was named after Sir George Everest, a Briton who served as surveyor general of India from 1830 to 1843.
- British climber George Mallory, asked why he wanted to scale Everest, famously answered, "Because it is there."
- The Tibetan name for Everest, Chomolungma, means "goddess mother of the world."
- The name Sahara comes from an Arabic word meaning "desert."
- The hottest temperature ever recorded—58°C (136°F)—was measured in the Sahara.
- Outside the Nile Valley, only about two million people live in the Sahara.
- In 1975, Australia created the Great Barrier Reef Marine Park. It embraces most of the ecosystem.
- The Amazon carries ten times more water than the Mississippi does.
- About 1,000 rivers flow into the Amazon; they are called tributaries. The land surrounding the Amazon and its tributaries forms the largest river basin on Earth.
- Angel Falls is on the Churún River.

## Critical Thinking and Writing

- **Evaluation:** Direct students to write a paragraph that answers the following questions: Which extreme place would you most like to visit? Why?
- **Inquiry:** Pose the following questions: How can we find out what is the highest point in our state? How can we learn what city in our state has the most people?

## Extension Activities

- **Research:** Form six groups. Give each group one of the following extremes to research: largest lake, deepest lake, largest ocean, longest river, largest country, most populous country. Have each group report what it learns and identify the source(s) of its information.
- **Creative Writing:** Challenge students to craft a story about a group of adventurers who visit all five extreme places profiled in the article.
- **Hands-on Science:** Demonstrate how the Himalaya formed through a simple activity. Have students pair up, then give each pair a sheet of paper. Students should place the paper lengthwise between them. Then each student should push the paper toward the other. Ask: What happened? *(The paper should bulge up in the middle.)* How is this like the formation of the Himalaya? *(Two plates pushed together, forcing land upward. That created the mountains.)*
- **Art:** Invite pupils to draw themselves at one of the places covered in "More to Explore" on p. 13.

### National Geographic Bee

*nationalgeographic.com/geographybee*

***Q.*** Antarctica and which other continent are located entirely in the Southern Hemisphere?

***A.*** Australia

COMPREHENSION CHECK

Name: _____

# Earth's Extremes

**The subheads below go with sections of the "Earth's Extremes" article in NATIONAL GEOGRAPHIC EXPLORER. Write a sentence that tells the main idea of each section.**

**1.** Mighty River

_____

_____

**2.** Waterfall Wonder

_____

_____

**3.** Coral Kingdom

_____

_____

**4.** The Sunny Sahara

_____

_____

**5.** Top of the World

_____

_____

PAGES 14–19

# On the Move

## Vocabulary

Write *gait*, *mammal*, *migrate*, *squid*, and *swim bladder* on the board. Then read aloud each definition below and ask which word it defines.

- body part that fills with air to help a fish rise *(swim bladder)*
- move to another place *(migrate)*
- long, thin sea creature with ten arms *(squid)*
- animal that feeds milk to its young *(mammal)*
- an animal's way of walking or running *(gait)*

## Reading Strategy

Tell students they may not always understand what they have read. Explain that that is normal. When they feel like they do not understand a section, paragraph, or sentence, they should stop reading and reread the section they didn't understand. Ask students to highlight or underline the sections they don't understand. After students have finished reading, invite them to discuss the sections they didn't understand.

## Fast Facts

- The largest bird, the ostrich, cannot fly, but it can run 72 kilometers (44 miles) an hour.
- The sailfish has been clocked at 109 kilometers (68 miles) an hour. It is regarded as the fastest fish, at least for short distances.
- Some flying frogs can go 15 meters (50 feet) in a single glide.

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## Comprehension Check

Copy and distribute the Comprehension Check work sheet (next page) for students to complete.

## Critical Thinking and Writing

- **Analysis:** Remind students that the article says bats are the only mammals that truly fly, yet it talks about how flying squirrels glide. Ask: What is the difference between gliding and truly flying?

## Extension Activities

- **Science:** Visit *nationalgeographic.com/ngexplorer/pioneer/teachers* to (a) link to a site where students can follow the migration of butterflies, hummingbirds, and other animals and (b) print a map that your class can use to track animals as they migrate.
- **Research:** Direct students to pick an animal from the article and create a poster about it. Topics to cover can include the animal's physical traits, location, habitat, diet, and means of locomotion.
- **Language Arts:** Remind students that a verb is an action word. Have students find and circle five verbs in the story, then use each one in a different sentence.

### National Geographic Books About Animals

***National Geographic Encyclopedia of Animals***
by Karen McGhee and George McKay (2007)

***National Geographic Book of Mammals***
by various authors (1998)

### Web Resources: On the Move

*nationalgeographic.com/ngexplorer/pioneer/teachers*

- Link to website for tracking animal migration
- Printable map for students to use in tracking

COMPREHENSION CHECK

Name: _____

# On the Move

**Read "On the Move" in National Geographic Explorer. Then answer the questions below. Use complete sentences.**

**1.** How do a bird's bones help it fly?

_____

_____

_____

_____

**2.** How does the swim bladder help a fish move?

_____

_____

_____

_____

**3.** How does moving help animals live?

_____

_____

_____

_____

PAGES 20-23

# Who Was Sacagawea?

## Vocabulary

Direct students to skim the article and circle any unfamiliar words. Invite them to share these words with the class and write them on the board. Then have students use a classroom dictionary to look the words up and report the definitions to their classmates.

## Reading Strategy

Explain to students that they should always ask questions as they read. Asking questions will help them better understand what they are reading. Also tell them that they may not find all the answers to their questions in the story. They may have to make inferences. Hand out the activity sheet on p. 7 of this guide and have students complete it while they are reading. When they have finished reading, invite them to discuss each question.

## Fast Facts

- No portrait of Sacagawea was made during her lifetime. A modern Shoshone was the model for the dollar coin. The artist also drew on Shoshone legend for creating Sacagawea's large, dark eyes.
- Sacagawea's husband, Toussaint Charbonneau, was a French-Canadian fur trader.
- Sacagawea's son—Jean Baptiste, nicknamed Pomp—later became the traveling companion of a European prince.
- Sacagawea received no payment for her services to the expedition, though William Clark later paid for the education of her son.
- Most historians believe that Sacagawea's daughter, Lisette, died very young.

## Critical Thinking and Writing

- **Analysis:** Tell students that there are reportedly more statues of Sacagawea than of any other American woman. Invite students to brainstorm about why Americans have put up so many statues of Sacagawea.
- **Inquiry:** Have students make a list of five questions they would ask Sacagawea if they could talk with her.

## Extension Activities

- **Social Studies:** Form five groups. Give each a large piece of butcher paper and have pupils create a mural about one of the following moments in Sacagawea's life: kidnapping, joining Lewis and Clark's team, rescuing items on the river, meeting her brother, saying farewell to Lewis and Clark.
- **Language Arts:** Explain that Lewis and Clark kept journals during the trip. Invite students to write a journal entry for the day when the team met Sacagawea's childhood tribe, learned that her brother had become the chief, and traded for horses.

### Web Resource: Sacagawea

*nationalgeographic.com/ngexplorer/pioneer/teachers*

- Lewis and Clark Journey Log (with maps, images, and journal entries)

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COMPREHENSION CHECK

Name: _____

# Who Was Sacagawea?

**Read "Who Was Sacagawea?" in National Geographic Explorer. Then answer the questions below.**

1. **Who** is the story about?

_____

_____

2. **What** is the story about?

_____

_____

3. **Where** does the story take place?

_____

_____

4. **When** does the story take place?

_____

_____

BONUS: THINK ABOUT IT!

**Why** was Sacagawea a special woman?

_____

_____