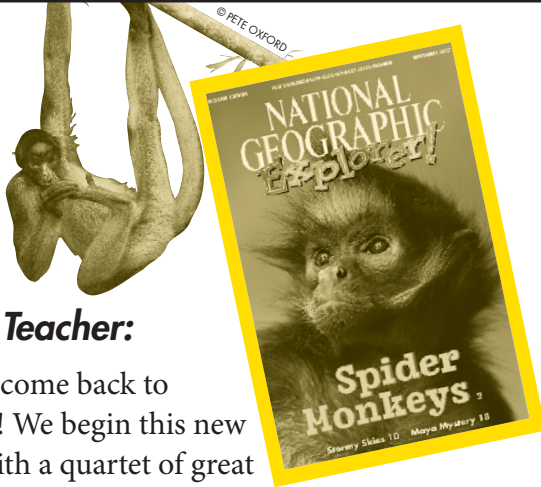


NATIONAL GEOGRAPHIC Explorer!

Pioneer Edition

nationalgeographic.com/ngexplorer/pioneer/teachers



Dear Teacher:

Welcome back to school! We begin this new year with a quartet of great reading adventures.

Students will trek into the rain forest to study spider monkeys, explore the ways that human actions are changing the weather, meet a student who survived Hurricane Katrina, and visit Maya ruins to probe the mysterious collapse of a great Native American civilization.

These exciting stories provide powerful motivation for nonfiction reading. But the literacy opportunities don't end there. For each article, we've identified a reading strategy for students to practice in order to become more effective readers. This Teacher's Guide offers ideas for building active-reading lessons around those strategies.

Let the exploring—and the reading—begin!

Sincerely yours,

Francis Downey
Vice President and Publisher

In This Issue

SPIDER MONKEYS

PP. 2-9

Curriculum Connections

- Life Science • Reading • Writing

Standards Correlations: Science

- Characteristics of organisms
- Organisms and environments

Literacy Skills

- Reading strategy: Activate and connect
- Research • Write comparisons

STORMY SKIES

PP. 10-17

Curriculum Connections

- Earth Science • Reading • Writing

Standards Correlations: Science

- Objects in the sky • Changes in Earth and sky

Literacy Skills

- Reading strategy: Summarize and synthesize
- Descriptive writing • Oral language

MAYA MYSTERY

PP. 18-23

Curriculum Connections

- Social Studies • Reading • Writing

Standards Correlations: Social Studies

- People, places, and environments
- Early civilizations and the emergence of pastoral peoples

Literacy Skills

- Reading strategy: Ask questions
- Write journal entries
- Interpret maps and visuals

Answer Key

Spider Monkeys • Teacher's Guide, p. 3

Possible responses: **1.** Spider monkeys can swing from tree to tree. Humans cannot. **2.** Hook-like fingers help spiders monkeys move from branch to branch. **3.** They play, hang out, and travel in small groups. **4.** They tell enemies to go away and warn troop members of danger.

Stormy Skies • Teacher's Guide, p. 5

1. *Answers will vary.* **2.** *Possible summary:* Humans are changing the weather in different ways. Smokestacks pump aerosols into the sky, causing more clouds to form. Planes make long, thin clouds. Cars and factories give off gases that are raising Earth's temperature. That may affect the weather in unknown ways.

Maya Mystery • Teacher's Guide, p. 7

Answers will vary. Students should attempt to answer questions and explain how they found the answers.

Review • Teacher's Guide, p. 8

1. a 2. d 3. b 4. a 5. d 6. c 7. c 8. a

Next Issue

The Changing Face of Mars

Astronomers take a new look at the red planet.

Pyramid Puzzle

Can robots help an archaeologist find a missing mummy in the Great Pyramid?

Owls

An expert shares tales of these amazing birds.

Spider Monkeys



Reading Strategy

Connecting to Prior Knowledge: Tell students that, before reading, good readers think about what they know and then connect it with what they read in a text. On the board, start a chart with two columns: *What I Know* and *What I Learned*. Give the chart a title: *Spider Monkeys*. Invite students to share what they know about spider monkeys. Write their responses in the chart. Ask them to look for new information as they read. Save the chart to use again after students have read the article.

Vocabulary

Write the word *primatologist* on the board and ask students if they notice any parts in the word that help them figure out its meaning. Underline the suffix *-ist*. The suffix means “one who.” A primatologist is a person who studies primates. You may need to explain that humans, apes, and monkeys are all examples of primates. Invite students to list other words they know with the suffix *-ist*. Ask them to define each word.

Fast Facts

- Spider monkeys live in the tropical rain forests of Central and South America.
- Unlike most primates, spider monkeys have no thumbs. This makes their ability to grip tree branches even more amazing.
- Spider monkeys live with their mothers for about the first year of their lives. You might see a female spider monkey swinging from tree to tree with a baby clinging to her back.
- Because spider monkeys live in trees, logging is a big problem for them. As more trees are cut down, spider monkeys’ habitats disappear.
- Spider monkeys have amazingly powerful arms. One swing of those arms can propel the animal 12 meters (40 feet) ahead. That’s longer than an average school bus!
- The average life span of a spider monkey in the wild is 22 years.

Comprehension Check

- Ask students what they learned from the article. Add their ideas to the chart on the board.
- Copy and distribute the Comprehension Check work sheet (next page) for students to complete.

Critical Thinking and Writing

- **Comparisons:** Point out the sentence in which the author says that spider monkeys’ long fingers work like hooks (p. 6). Ask: How does the sentence help you picture spider monkeys? Then challenge students to write similar comparisons for other animals. (*Possible answer: An elephant can use its trunk like a hose.*)
- **Oral Language:** Form small groups. Have students discuss the following questions: Why is chasing spider monkeys a challenging job? What would be fun about it? What could we learn from studying animals like these?

Extension Activities

- **Science:** Tell the class that spider monkeys communicate by whooping, gobbling, and barking. Encourage students to find out how other animals communicate. They can compare and contrast their findings with spider monkeys.
- **Vocabulary:** Refer students to Wordwise (p. 8). Ask them to work in groups to use each word in a sentence about spider monkeys.

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COMPREHENSION CHECK

Name: _____

Spider Monkeys

Read each spider monkey statement in the table. Then find and write facts from the NATIONAL GEOGRAPHIC EXPLORER article that support each statement.

Spider Monkey Statement	Supporting Facts From Article
1. Spider monkeys are hard to follow.	
2. Spider monkeys are able to move easily through the forest.	
3. Spider monkeys spend time with other spider monkeys.	
4. Spider monkeys make noise for different reasons.	

Stormy Skies

Reading Strategy

Summarizing: Let students know that summarizing means figuring out the most important information in a text and then putting that information in their own words. To help students summarize after reading, encourage them to flag important ideas in the article with sticky notes.

Vocabulary

Direct attention to Wordwise (p. 15). Activate students' prior knowledge by inviting them to tell what they already know about the glossary words. They can share background knowledge, examples, and so on.

Fast Facts

- A simple way to think of clouds is that they help water move from one place to another.
- Scientists classify clouds based on their shape, height, size, speed, and direction of movement.
- Cirrus clouds are high in the air. They look like feathers or streamers. They are made of ice crystals that are twisted and spread by wind currents.
- Cumulus clouds are mid-level clouds. They are fluffy and white, like cotton balls.
- Stratus clouds lie low in the sky. In a hilly place, they often look like fog. These clouds are too thin to make much rain or snow.
- Cumulonimbus clouds are signs of bad weather. They grow on hot days from warm, wet air.

Comprehension Check

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

Critical Thinking and Writing

- **Cause and Effect:** Ask students to identify effects that might result from the following causes:
 - a. Warm air meets cold air. (*The warm air rises over the cold air and forms a cloud.*)
 - b. A plane blasts water vapor and aerosols into the sky. (*The water vapor and aerosols form a long, thin cloud.*)
 - c. The sun warms the ground. (*The ground warms the air. The air then rises and forms a cloud.*)
 - d. Cars and factories pump gases into the air. (*The gases trap heat, and Earth's temperature rises.*)

Extension Activities

- **Science:** Form small groups. Assign each group to study the causes and effects of global warming and create a poster about its findings.
- **Science/Art:** Invite students to research and create pictures of different cloud types: cirrus, cumulus, cumulonimbus, stratus, and more.
- **Creative Writing:** Direct students to read "Surviving the Storm" (pp. 16-17). Then challenge them to write a play based on the story.
- **Nonfiction Writing:** Tell students to write a descriptive paragraph about the photograph on pp. 10-11.

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Stormy Skies

DIGITAL STOCK

Look at the important ideas you marked while reading “Stormy Skies” in NATIONAL GEOGRAPHIC EXPLORER. Then answer each question below.

1. What are the most important ideas in the article?

2. Write a summary of the article. Take the most important ideas in the article and write them in your own words.

Maya Mystery

Reading Strategy

Asking Questions: Remind students that good readers ask questions. For example, they ask what might happen next, what a word means, and what they are learning. Read the headline and deck to students and lead them through the photos. Then model asking questions, such as *What is the Maya mystery? Did the Maya leave any clues that might help us solve it?* Hand out the Reading Strategy work sheet (next page). Students can jot down questions they have before and during reading. If they are able to answer the questions, they should note their answers as well.

Vocabulary

- Direct attention to Wordwise (p. 22). Read the words and definitions with students. Then focus on the phrase *rain forest*. Use it in a sentence, such as *Many kinds of animals live in a rain forest*. Invite students to restate the definition in their own words and use the phrase in a sentence. To strengthen understanding, students can draw pictures of rain forests.
- Repeat this process with other glossary words.

Fast Facts

- The Maya created their own system of writing. They used their writing to record their amazing achievements in astronomy and mathematics.
- The Maya used cacao beans to make a bitter chocolate drink that included hot chili peppers!
- The Maya traded many items—including precious stones such as jade, parrot feathers, a red dye made from dried insects, and jaguar pelts—to get the things they needed.
- You could tell someone's place in Maya society by looking at his or her clothes. Married women had their own distinctive hairstyle.
- If you were a Maya slave, you wanted your master to stay healthy. When a Maya noble died, his slave was killed to serve in the afterlife.

Comprehension Check

Return to the Reading Strategy work sheet you gave out earlier. Ask students if they have any more questions now that they have finished reading. They can add those questions to the sheet. Encourage students to answer the questions they wrote before, during, and after reading. Many answers may be found in the article, but students might need to consult reference sources for answering others. Have students note in column three their strategies for answering questions.

Critical Thinking

- **Visualizing:** Ask students to close their eyes and listen as you read the third paragraph on p. 21: “I went to the ruins of some Maya cities. . . .” Ask students what they pictured in their minds. How did the author’s description help deepen their understanding? (*Possible answer: The Maya’s cities are now empty. Parrots and monkeys live in the ruins, making one wonder what happened to the Maya.*)
- **Vocabulary:** Encourage students to use clues from the text to figure out the meanings of words they don’t know. Use the word *society* (p. 21) as a model: *To figure out this word, I reread the paragraph in which it appears. The Maya’s society was huge. The Maya also had proud cities, and I know that cities are full of people. So a society must be a very large group of people.* Invite students to talk about how they figured out the meanings of other words they didn’t know.

Extension Activities

- **Creative Writing:** Ask students to imagine that they lived in a Maya city and left their home because of one of the reasons described in the article. Challenge them to write a series of diary entries about their experiences.
- **Geography:** Direct students to use reference sources to create maps of the Maya world.

Name: _____

Maya Mystery

Write questions that you have before you read, while you read, and after you read. If you can find the answers, write them in the chart. Then tell how you found the answers.

My Questions About "Maya Mystery"	Answers	How I Found the Answers



COMPREHENSION CHECK

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

1. What kind of scientist studies Maya ruins?
Ⓐ archaeologist
Ⓑ biologist
Ⓒ primatologist
Ⓓ radiologist
2. Drops of what make up clouds?
Ⓐ carbon dioxide
Ⓑ oil
Ⓒ oxygen
Ⓓ water
3. Where have the Maya lived for 3,000 years?
Ⓐ Asia
Ⓑ Central America
Ⓒ Europe
Ⓓ South America
4. Which is *not* a reason why the Maya may have left Tikal?
Ⓐ An earthquake destroyed the city.
Ⓑ People lost faith in their king.
Ⓒ There was a lack of rain.
Ⓓ Wars made the city weak.
5. What is a group of spider monkeys called?
Ⓐ family
Ⓑ gaggle
Ⓒ gang
Ⓓ troop
6. Which animal would a primatologist study?
Ⓐ dolphin
Ⓑ elephant
Ⓒ monkey
Ⓓ tiger
7. Which hurricane tore through New Orleans in August 2005?
Ⓐ Agnes
Ⓑ Andrew
Ⓒ Katrina
Ⓓ Mitch
8. What form of matter is water vapor?
Ⓐ gas
Ⓑ ice
Ⓒ liquid
Ⓓ solid