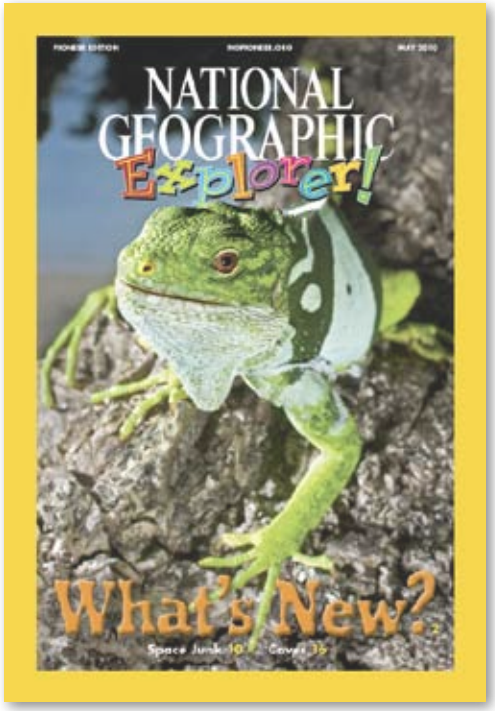
Pioneer Edition May 2010
TEACHERS GUIDE



Dear Educator:

In this issue of Explorer! your students will venture into some of the most remote places on Earth to find out what scientists are discovering there. "What's New?" follows teams of explorers as they scour the far reaches of the world in search of undiscovered plant and animal species. In "Caves," photographer and cave explorer Stephen Alvarez takes readers deep into some of the world's most impressive caves. In "Space Junk," astrophysicist Jonathan McDowell explains what scientists are doing to monitor the ring of trash around Earth and protect astronauts and satellites from deadly collisions.

Now we're hard at working planning great issues for the fall. We hope you include us in your planning for next year. Remember, if you place your order for next year by May 31, you'll get a 10% discount. That means Explorer! only costs 32 cents per student per issue. You'll also get a free online Teacher's Guide, free whiteboard content for one story per issue, and a free classroom poster that builds on the stories in the issue. What an affordable way to meet standards and get your students excited about reading and the world around them!

Speaking of the Teacher's Guide, please let me know what you think about the guide for this issue. We listened to your comments about changes we made to the Teacher's Guide earlier this year. We think you'll find the new-and-improved May Teacher's Guide even more user friendly and useful. Feel free to email any comments to me at bmaloney@ngsp.com.

Sincerely,

Brenna Maloney

Brenna Maloney
Editor, Explorer

What's New? pp. 2-9

Curriculum: Standards
- Language Arts: Ask questions and set purpose for reading
- Life Science: Diversity of organisms; Interdependence

Literacy Skills
- Reading Strategy: Determine importance
- Vocabulary: Descriptive language; Context clues; Academic vocabulary
- Writing: Journals

Space Junk, pp. 10-15

Curriculum: Standards
- Language Arts: Build background knowledge
- Space Science: Effects of space research

Literacy Skills
- Reading Strategy: Make connections
- Vocabulary: Content vocabulary
- Writing: Creative dialogue

Caves: Deep Into Darkness, pp. 16-23

Curriculum: Standards
- Language Arts: Build background knowledge
- Earth Science: Earth structures

Literacy Skills
- Reading Strategy: Plan and monitor
- Vocabulary: Academic vocabulary; sensory language
- Writing: Persuasive writing

What's New?

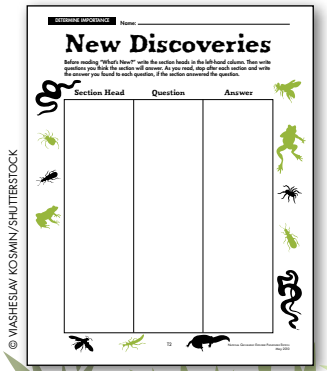
Objectives

Students will learn:

- how scientists discover new species
- how species are classified
- the importance of biodiversity
- some species are in danger of becoming extinct

About the Story

Join National Geographic explorer Kristofer Helgen and other scientists as they look for species scientists have never seen before. Scientists are searching rain forests, deserts, oceans, and even neighborhoods to find new species. Each discovery helps scientists better understand our planet's biodiversity and the balance of species needed to keep ecosystems healthy.



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Before Reading

Tap Prior Knowledge Ask students if they have ever taken a walk or hiked in nature. Encourage them to describe their experiences. Then invite them to describe any plants or animals they saw. Ask: *What do you think it would feel like to be the first person to find a new plant or animal?* Explain that the job of some scientists is to look for new species.

Reading Strategy

Determine Importance Ask students to think of three questions they hope the story will answer. Remind students to stop after reading each section and ask:

- What is the most important idea in this section?
- Did I answer one of my questions?
- Do I have any new questions?

You can use the activity master on p. T13 to help students determine the important facts in each section.

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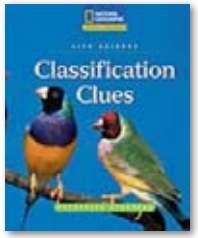
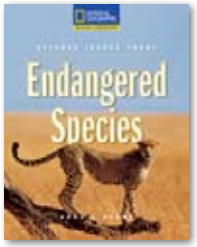
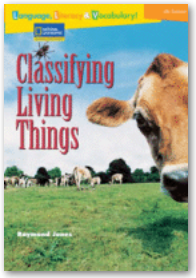
What's a New Species?

Before reading, make sure students know what a new species is. A new species is a plant or animal that scientists have never seen before. It may actually be well known by people who live in the area where the new species is found. That is why scientists often talk to local people about the plants and animals that live nearby. Their information and stories provide clues to possible new species that scientists can keep a look out for as they explore the area.

National Geographic Connections







What's New?

Vocabulary

Descriptive language Read aloud the last three sentences on p. 4: "The explorers who found the giant rat discovered nearly 40 new species. One was a grunting fish. Another was a fanged frog. Yikes!"

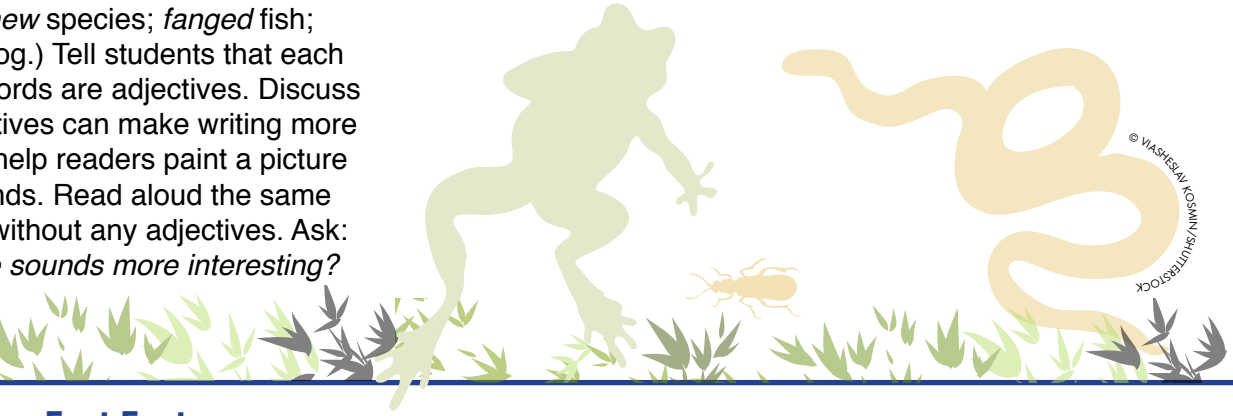
Ask students to listen closely for **adjectives.** If needed, say adjectives are words that describe nouns.

Display the words *rat, species, fish,* and *frog.* Explain that these words are nouns. Invite students to list a word that describes each noun. (Examples: *giant* rat; *new* species; *fanged* fish; *grunting* frog.) Tell students that each of these words are adjectives. Discuss how adjectives can make writing more lively and help readers paint a picture in their minds. Read aloud the same sentence without any adjectives. Ask: *Which one sounds more interesting?*

Far-off Places

Far-fetched Tales

A Hidden Forest



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Access Science

- Direct students to look at the two photos on pp. 4-5. Ask: *Do these animals look familiar?* Point out that even though these animals may look familiar, both are newly discovered species.
- Ask: *Where are scientists looking for new species?* (They are looking in rain forests, mountains, deserts, oceans, and neighborhoods.)
- Ask: *What are two ways scientists begin searching for new species?* (Talking to villagers for clues to new plants or animals or they search on their own.)
- Ask: *Why is listening to stories told by villagers important?* (Villagers may know of plants and animals that scientists haven't seen before.)

Fast Facts

- The team exploring the Bosavi crater in Papua New Guinea discovered their first new species—a frog—almost as soon as they got out of the helicopter. "I nearly trod on it!" says explorer George McGavin.
- Two New York City high school students may have discovered a new species of cockroach. They tested the cockroach as part of a DNA project for science class. Its DNA varied from other known cockroach DNA.
- A new kind of spotted sea ray discovered off the coast of Africa "walks" on its front fins and sucks up worms and crabs from the ocean floor.

What's New?

Academic Vocabulary

Ask students to find the academic vocabulary on pp. 6-7 that is in bold. Display these words as volunteers read the sentences that contain each word. Remind students that these words are also defined at end of the article in Wordwise. Have students review each word's definition to ensure they know what it means before they continue reading.

Check understanding by using the academic vocabulary in the following sentences. Have students give a thumbs up or a thumbs down indicating if the statements are true or false.

- A squirting deep-sea vent is an example of an unusual habitat. (T)
- DNA is a molecule that has a code to guide how a living thing lives and grows. (T)
- Scientists classify only animals into groups. (F – plants also)
- A scientific name is given to a new species to help describe it. (T)

Access Science

After students read the story, guide discussion with the following questions:

- Ask: *Why were scientists surprised to find a crab near deep-sea vents?* (Deeps sea vents are hostile habitats. They squirt poisonous, hot water.)
- Ask: *How did the scientists learn the caterpillar they found was not a new species?* (The cocoons hatched moths that they had seen before.)
- Ask: *What is the difference between a species' common name and its scientific name?* (A common name can be fun or easy to remember. A scientific name helps describe it.)
- Ask: *How did scientists finally determine that the clouded leopard that lives on Borneo was a unique species?* (They found 40 differences between the DNA of the clouded leopard on Borneo and other clouded leopards.)

WebConnect

Video of Newly Discovered Marine Species
http://video.nationalgeographic.com/video/player/news/animals-news/coml-species-vin.html

"Walking" Sharks and Other New Species
http://news.nationalgeographic.com/news/2006/09/060918-walking-shark.html

What's New?

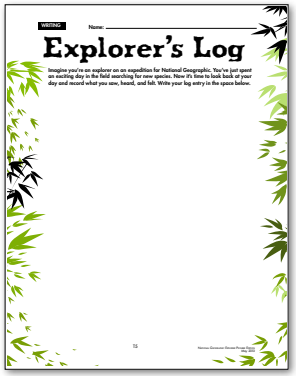
Vocabulary: Context Clues

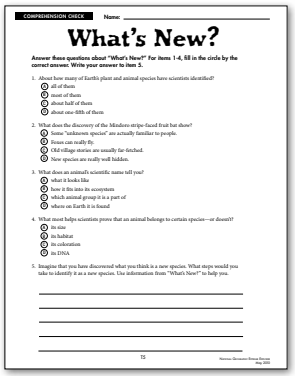
Explain that readers often encounter unfamiliar words. Read aloud the following sentences from "What's New?": "Now that's what we call biodiversity! Biodiversity is all the plants and animals in an ecosystem."

Then ask: *What is biodiversity?* After students discuss the word and its definition, point out that they can find the definition right in the text you just read.

Explain that using context clues is one way to figure out new words. Context clues are clues that appear around the unfamiliar or boldfaced word.

As students read, have them list other unfamiliar words and any context clues they find that helps them to help define the words.





Access Science

- Ask: *What' are two things scientists want to learn about a new species?* (They want to know how it fits into its ecosystem; what does it need to survive?)
- Ask: *Why are scientists worried about unknown species?* (Those species may die out before they are discovered.)
- Ask: *What are scientists doing to help unknown species?* (They are setting up safe places for teh species to live.)
- Ask: *Is the search for new species over?* (No. Finds like the giant rat remind explorers that there may be many more new species left to be discovered.)

Assess Use the Comprehension Check on p. T15 to assess students' understanding of the story.

Extend the Learning

Geography: Divide students into groups of threes or fours. Tell them that they are National Geographic explorers who want to look for unknown species. Have them look at a world map and/or satellite photos to search for a place they think they might find unknown species. Then ask them to write a proposal that explains why they want to go there. The proposal could include a list of equipment they will need, new animals they hope to find, and photos and drawings of the location.

Creative Writing: Use the Explorer's Log on p. T14 to let students imagine they are explorers who found a new species. They should detail how and where it was found, what it looks like, what common name it has been given and why. You might also have them draw the plant or animal and its ecosystem.

Space Junk

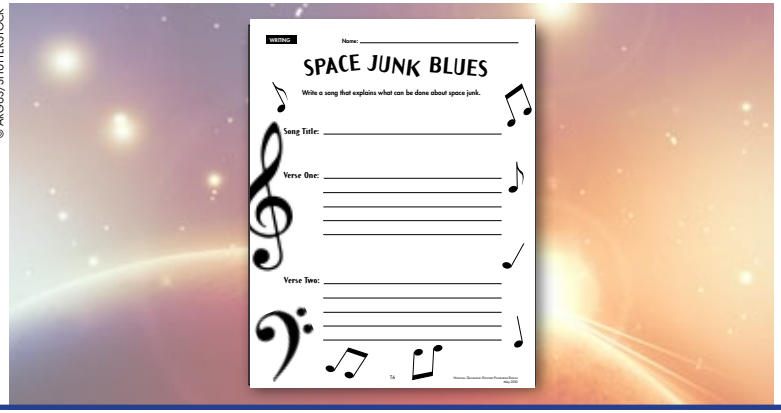
Objectives

Students will learn:

- space is littered with space junk
- Earth's gravitational pull affects space junk
- space junk orbits Earth
- astronauts and space vehicles risk collisions with space junk
- scientists are working on ways to clean up space and reduce trash

About the Story

Blast off with astrophysicist Jonathan McDowell as he studies the junk that gets left behind in space. Learn how this junk threatens space missions and how scientists are trying to reduce the amount of space junk.



Before Reading

Build Background Display the word "garbage." Ask: *What other words mean the same as "garbage?"* List student responses, which may include: *trash, litter, junk, rubbish, debris, refuse, junk* or *waste*.

Ask students to brainstorm problems caused by trash on Earth with a partner. Give three minutes for their discussions before asking them to share their ideas.

Next, tell students that there's trash in space, too. Ask: *What kinds of trash might be in space? What problems could space junk cause?*

Reading Strategy: Make Connections

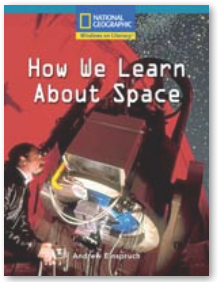
Tell students that when readers make connections between the text and information they already know, it helps them understand what they are reading. Ask: *What do you already know about space junk?*

Engage Students

Distribute the activity master on p. T17. Ask students to write a song about space junk based on what they know about the problems that trash causes on Earth. Prompt students by asking:

- What is space junk?
- What problems does space junk cause?

National Geographic Connections



Space Junk

Academic Vocabulary

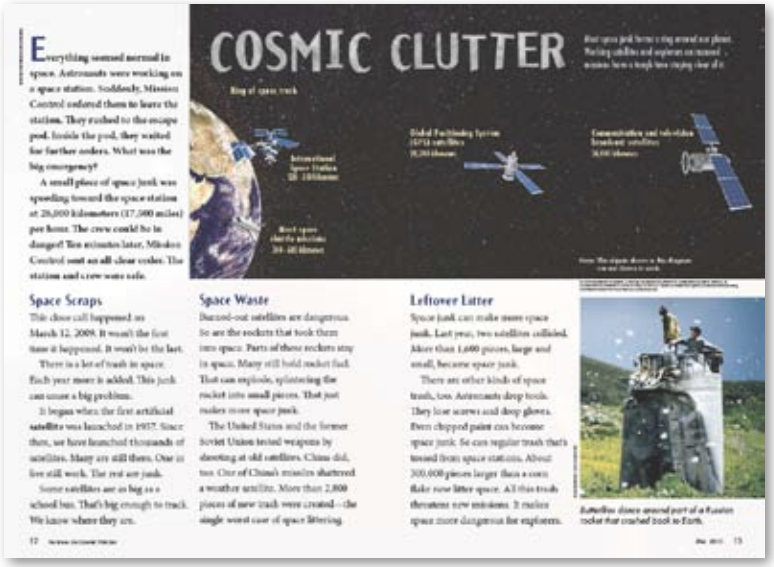
Display the word *satellite.* Use the following steps to teach it.

Pronounce: Ask students to say the word *satellite* aloud with you. Then have students say it by syllable: sat-el-lite.

Explain: Tell students that a satellite is a spacecraft launched by a rocket that goes around a planet or moon.

Engage: Ask students to complete this sentence: The former Soviet Union launched the first _____ in 1957. (satellite)

Involve: Say: Tell me if I'm using the word satellite correctly in this sentence: "There are many *satellites* in space that send important information back to Earth." Ask students for a thumbs-up or thumbs-down. Explain that those who voted "yes" are correct.


COSMIC CLUTTER

Space Scraps

Space Waste

Leftover Litter

Access Science

After reading the story, help students focus on the concepts of "what is space junk and how does it get there," by using a Fishbowl cooperative learning strategy. Have one-half of the class sit in a close circle, facing inward. Have the other half of the class sit in larger circle around them. Ask the inside group to discuss: *What things are considered space junk?* The outside group should listen for new information. Have the groups switch places. Ask the new inside group: *How does space junk get there?*

Read a Diagram Using the diagram on pp. 12-13, ask:

- *What does the diagram show?* (Earth and space)
- *How does the diagram depict space trash?* (with red dots)
- *Which spacecraft in the diagram are in the greatest danger from space junk?* (space shuttles and space station)

Fast Facts

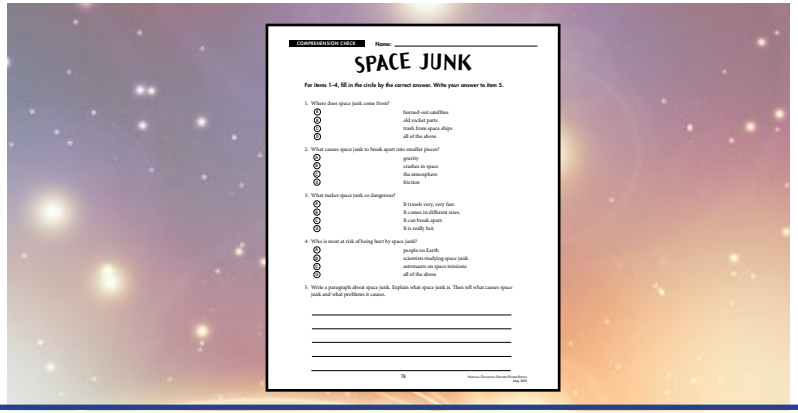
- NASA has an orbital debris program office at Johnson Space Center. They study all aspects of this growing problem and are examining possible solutions.
- Orbital debris (space junk) consists of 42 percent broken up satellite fragments, unused fuel, batteries, paint flakes, etc.; 17 percent rocket bodies; 19 percent mission related junk such as plain trash and spacecraft objects or tools and 22 percent old nonfunctional spacecraft.
- The length of time space junk stays in Earth's orbit depends upon its altitude. For example, an object 200-600 kilometers high will stay a few years, whereas junk at an altitude greater than 800 kilometers may stay up there for centuries.
- Most space junk burns up upon reentry into Earth's atmosphere, but some pieces do land in different places in the world.

Space Junk

Academic Vocabulary

Display the words *atmosphere, friction, gravity,* and *orbit.* Read aloud the definitions for each word from Wordwise without saying the vocabulary word first. Have students listen carefully and by a show of hands indicate which definition they think matches each word.

Then have students create original sentences using each word. Display a few examples from students. Next, challenge students to work in pairs and try to correctly use two words in a single sentence.



Access Science

Use the Four Corners cooperative learning strategy to have students discuss the following key ideas from the story. Assign one question to each group. Answers to questions 1-3 can be found on p. 14. Students will have to draw their own conclusions to answer question 4.

1. What are the problems caused by space junk?
2. How do scientists track space junk?
3. What are some possible solutions?
4. Why must space be kept safe?

Have the groups discuss and write their answers before reporting their response to the class.

Assess Use the Comprehension Check on p. T18 to assess students' understanding of the story.

Extend the Learning

Think Like a Scientist: Tell students to imagine that they work for NASA's Orbital Debris Program. This program studies and tracks trash in space. It is developing ways to reduce it. They just learned that funding might be eliminated for their program. Have students list three to five reasons why their research should or should not continue for this program. Allow time for students to share their lists, pointing out both common responses and original thinking.

Creative Writing: Invite students to write an ongoing conversation between a space shuttle astronaut and Mission Control regarding a potential hazard with space debris headed toward the space shuttle. Explain that this type of writing is called dialogue and when each person speaks their words should be enclosed with quotation marks. Have student pairs take turns reading their dialogue aloud to the class.

Caves: Deep Into Darkness

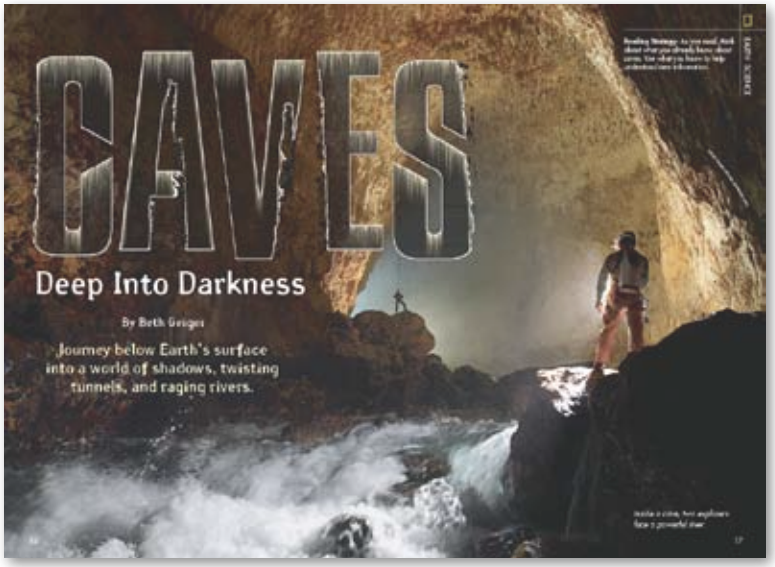
Objectives

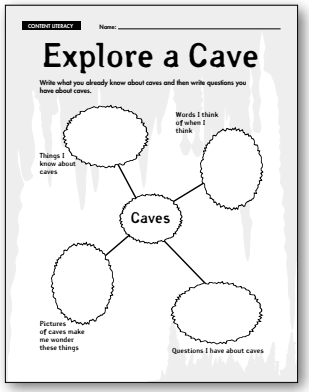
Students will learn:

- caves come in many shapes and sizes
- caves are found underground, underwater, and in ice
- how caves form
- about some geologic features of caves such as stalagmites
- some creatures have special adaptations to live in caves

About the Story

Join National Geographic explorer and photographer, Stephen Alvarez as he explores the dark and mysterious world of caves. Readers will learn what cavers already know; caves are fascinating geological formations filled with many surprises.





Before Reading

Tap Prior Knowledge Help students build upon their prior knowledge about caves. Display the caves poster included in the Teacher's Edition. Read the captions aloud. Then ask students to think about what they know about caves. Use the Word Web activity master on p. T20 to help students tap into what they already know about caves and what they want to learn. After reading, return to the web to see if their questions were answered.

Reading Strategy

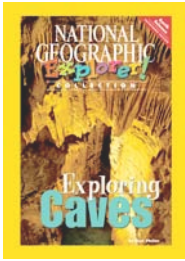
Plan and Monitor Explain that understanding text structure can help readers plan and monitor their reading. In this story, the author presents key science concepts in a logical sequence, or an order that makes sense. As students read, they can ask themselves: *Does this order make sense to me? How would I tell the story?*

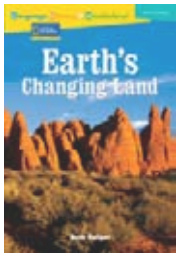
Engage Students

Before reading, you may want to give students a visual context to help them understand how caves form. For an animated overview, go to http://www.pbs.org/wgbh/nova/caves/form.html. Please preview the animation to make sure it is appropriate for your class. After viewing, ask students to share one surprising thing they learned about caves by watching the animation.

You also may want to use this **hands-on science experiment** to demonstrate how acid can dissolve rock. You'll need baking soda, vinegar, and a see-through cup or bowl. Pour a tablespoon of baking soda into the cup or bowl. Then add a couple of drops of vinegar. The baking soda will release a gas and dissolve. Explain that this is how acid slowly dissolves limestone over hundreds of years.

National Geographic Connections





Caves: Deep Into Darkness

Vocabulary

Sensory Language Ask volunteers to name the five senses (touch, smell, sight, sound, and taste). Then read aloud the first paragraph on p. 18. Ask: *Which senses does the writer tap into?* (sight, sound, touch) Explain that using sensory language helps readers visualize what they are reading. To explain, say: *Replace the first paragraph with this sentence: "You're in a cave."* Ask: *Do you get the same sense of the setting? How is it different?* Encourage students to look for other sensory language as they read.

Academic Vocabulary

Preview the academic vocabulary on p. 18. Point out that adding *-er* to the word *cave* changes its meaning to "a person who explores caves." Adding the suffix *-er* to verbs and some nouns can change meanings so they describe a person. (example: teach; teacher)

Access Science

1. Invite students to look at the photos on pp. 18-19. Ask them to discuss how the caves shown in each photo are alike and different. Then ask: *What kinds of special equipment might a caver need to explore these caves?*

2. Read pp. 18-19 together, inviting student volunteers to read one paragraph aloud at a time. Then check for understanding by asking students to find three important facts on these pages. Display the responses.

Types of Caves Ask students to explain the different kinds of caves found on Earth. Help students understand that caves can be found in many different places. Point out that although we think of most caves being found in rock, they can also form under water, in lava, or in ice.

Fast Facts

- The study of caves is called speleology. The recreational sport of exploring wild caves is referred to as spelunking or caving. If you participate in this sport, you are called a spelunker or caver.
- Caves host many temporary guests such as bears, mountain lions, foxes, and bats. Permanent residents of caves include certain types of fish, salamanders, crayfish, insects, and spiders. These cave dwellers have adapted to the darkness by increasing their sense of smell and touch, and by depending little, or not at all, on sight.
- Some caves were homes and shelter to early humans. We have learned many things about their lives from the pictographs and petroglyphs left on cave floors, walls, and ceilings.

Caves: Deep Into Darkness

Academic Vocabulary

Tell students that sometimes it helps to be a word detective when they find difficult words in stories. Have students find the boldface words on pp. 20-21. Ask: *What similarities can you find between the words?* Responses may include:

- two of the words begin with *stala*
- all three words have three syllables
- they all end in *-ite*

Next, ask students to look at these words' Wordwise definitions on p. 23. Challenge them to use the definitions to find another similarity. (All have something to do with rocks.)

Explain that these clues can help them understand and remember them. Students may want to make a vocabulary organizer to help them learn *helictite, stalactite,* and *stalagmite.*

Access Science

Cave Formation Have volunteers explain how limestone caves are formed. Explain when water mixes with carbon dioxide in the air an acid forms. This acid can eat away at limestone, breaking it down and, over time, hollowing out caves and tunnels. If desired, use the hands-on science experiment on p. T9 to show this.

Cave Decorations After reading "Water at Work" and "From Pearls to Popcorn," pair students. Ask each student to share a surprising fact they learned about cave decorations with their partner. Remind students these unique formations took hundreds of years to form.

Web Connect

Crystal Cave
http://channel.nationalgeographic.com/episode/giant-crystal-cave-3569/cave-crystal-giants-4

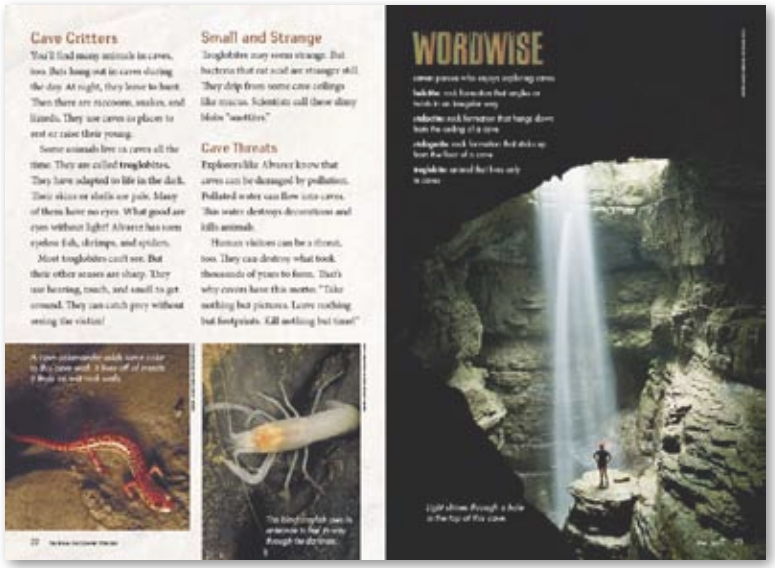
Deep Southern Caves
http://ngm.nationalgeographic.com/2009/06/tag-caves/jenkins-text

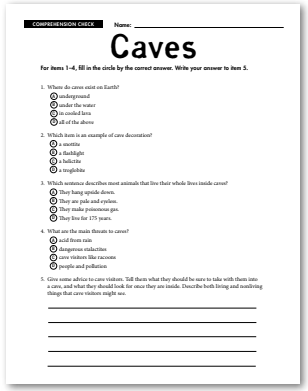
Caves: Deep Into Darkness

Academic Vocabulary

Preview the academic vocabulary on p. 22. Remind students of the similarities they found between the words *stalagmite, stalactite,* and *helictite* on pp. 20-21. Ask: *How is the word* troglobite *similar to the other three words?* (It also ends in *-ite*, is three syllables, and has something to do with caves.)

Challenge students to be word detectives and find another similar word on p. 22. (*snottite)* Ask how they can use the similarities they found between the academic vocabulary words and this one to figure out its meaning. (It ends in *-ite*, too. Since it's in a story about caves, it probably has something to do with cave dwellers or cave formations, just like the other words that end in *-ite.)* Students can use context clues, too.





Access Science

Cave Critters Ask students to summarize what they learned about animal life in caves. Ask: *What are troglobites? How have they adapted to living in total darkness? (*They use their keen sense of hearing, touch, or smell to find their way or dinner.) Students should mention that some animals just visit caves or use them for temporary shelter.

Assess

- Ask: *Why is it important to study caves?* (answers will vary)
- Ask: *If you want to be a caver, what do you need to remember?* (safety precautions and specific equipment, p. 20)
- Ask: *Name two ways scientists are concerned caves could be damaged.* (polluted water and human visitors, p. 22)

Use the Comprehension Check on p. T21 to assess students' understanding of the story.

Extend the Learning

Creative Writing: Refer students to the motto cavers use: "Take nothing but pictures. Kill nothing but time. Leave nothing but footprints!" Mention that another motto often used by cave enthusiasts is "Cave Softly." Have students work in pairs to think up one or two additional mottoes that would be a good reminder to all who enter caves that these are special areas that need to be protected. Let students share their finished mottoes. Vote on the class' three favorites and display beside the cave poster.

Vocabulary: Have students find five nouns in the story they have never used before in their writing. Then have them think how they could combine these five words in a paragraph that would make sense. Allow time for students to review the article to find their five nouns, write the paragraph, and then share with a partner. Remind partners to listen for the correct usage of the words and ask questions to clarify if necessary.

DETERMINE IMPORTANCE

Name: _____

New Discoveries

Before reading "What's New?" write the section heads in the left-hand column. Then write questions you think the section will answer. As you read, stop after each section and write the answer you found to each question, if the section answered the question.

Section Head	Question	Answer

WRITING

Name: _____

Explorer's Log

Imagine you're an explorer on an expedition for National Geographic. You've just spent an exciting day in the field searching for new species. Now it's time to look back at your day and record what you saw, heard, and felt. Write your log entry in the space below.

COMPREHENSION CHECK

Name: _____

What's New?

For items 1-4, fill in the circle by the correct answer. Write your answer to item 5.

1. About how many of Earth's plant and animal species have scientists identified?
   - (A) all of them
   - (B) most of them
   - (C) about half of them
   - (D) about one-fifth of them

2. What does the discovery of the "flying fox" bat show?
   - (A) Some "unknown species" are actually familiar to people.
   - (B) Foxes can really fly.
   - (C) Old village stories are usually make-believe.
   - (D) New species are really well hidden.

3. When scientists classify a new animal, they:
   - (A) sort it into groups
   - (B) give it a name
   - (C) describe it
   - (D) all of the above

4. What most helps scientists prove that an animal belongs to certain species—or doesn't?
   - (A) its size
   - (B) its habitat
   - (C) its color
   - (D) its DNA

5. Imagine that you have discovered what you think is a new species. What steps would you take to identify it as a new species. Use information from "What's New?" to help you.

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COMPREHENSION CHECK

Name: ANSWER KEY

What's New?

For items 1-4, fill in the circle by the correct answer. Write your answer to item 5.

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5. Imagine that you have discovered what you think is a new species. What steps would you take to identify it as a new species. Use information from "What's New?" to help you.

Sample response: I would compare it to other species that we already know about. I'd ask: How is it alike? How is it different? I also might take a DNA sample. Since a species' DNA is unique, it can help prove if a species is new or not. I know that's what helped scientists confirm that the Bornean clouded leopard was a new species.

WRITING

Name: _____

SPACE JUNK BLUES

Write a song that explains what can be done about space junk.

Song Title: _____

Verse One: _____

_____

_____

_____

_____

Verse Two: _____

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COMPREHENSION CHECK

Name: _____

SPACE JUNK

For items 1–4, fill in the circle by the correct answer. Write your answer to item 5.

1. Where does space junk come from?
   - (A) burned-out satellites
   - (B) old rocket parts
   - (C) trash from space ships
   - (D) all of the above

2. What causes space junk to break apart into smaller pieces?
   - (A) gravity
   - (B) crashes in space
   - (C) the atmosphere
   - (D) friction

3. What makes space junk so dangerous?
   - (A) It travels very, very fast.
   - (B) It comes in different sizes.
   - (C) It can break apart.
   - (D) It is really hot.

4. Who is most at risk of being hurt by space junk?
   - (A) people on Earth
   - (B) scientists studying space junk
   - (C) astronauts on space missions
   - (D) all of the above

5. Write a paragraph about space junk. Explain what space junk is. Then tell what causes space junk and what problems it causes.

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COMPREHENSION CHECK

Name: ANSWER KEY

SPACE JUNK

For items 1–4, fill in the circle by the correct answer. Write your answer to item 5.

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5. Write a paragraph about space junk. Explain what space junk is. Then tell what causes space junk and what effects it has.

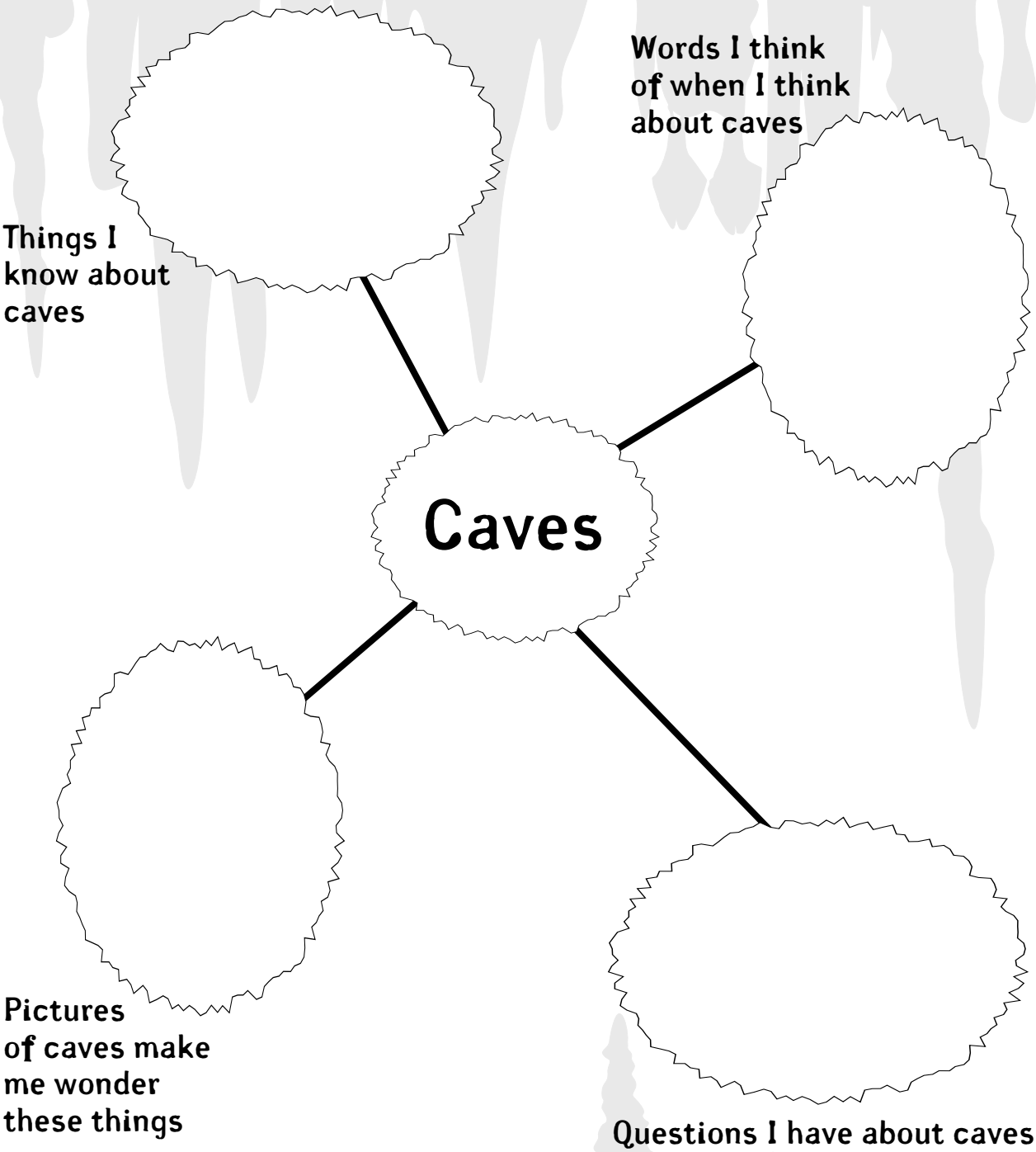
Sample top-scoring response: Space junk is made up of small and large pieces of debris from space missions. Space junk is made of old satellites, tools that astronauts lost, and trash space crews threw away. Space junk moves very fast—about 5 miles per second. For this reason even small pieces can cause huge damage if they hit a space craft. Space junk can also fall back to Earth, which is dangerous to people on the ground.

TAP PRIOR KNOWLEDGE

Name: _____

Explore a Cave

Write what you already know about caves and then write questions you have about caves.



COMPREHENSION CHECK

Name: _____

Caves

For items 1–4, fill in the circle by the correct answer. Write your answer to item 5.

1. Where do caves exist on Earth?
   - (A) underground
   - (B) under the water
   - (C) in cooled lava
   - (D) all of the above

2. Which item is an example of cave decoration?
   - (A) a snottite
   - (B) a flashlight
   - (C) a helictite
   - (D) a troglobite

3. Which sentence describes most animals that live their whole lives inside caves?
   - (A) They hang upside down.
   - (B) They are pale and eyeless.
   - (C) They make poisonous gas.
   - (D) They live for 175 years.

4. What are the main threats to caves?
   - (A) acid from rain
   - (B) dangerous stalactites
   - (C) cave visitors like racoons
   - (D) people and pollution

5. Give some advice to cave visitors. Tell them what they should be sure to take with them into a cave, and what they should look for once they are inside. Describe both living and nonliving things that cave visitors might see.

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COMPREHENSION CHECK

Name: ANSWER KEY

Caves

For items 1–4, fill in the circle by the correct answer. Write your answer to item 5.

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5. Give some advice to cave visitors. Tell them what they should be sure to take with them into a cave, and what they should look for once they are inside. Describe both living and nonliving things that cave visitors might see.

Sample response: If you are going to explore a cave, make sure that you have a helmet, a headlight, kneepads, and ropes. Also make sure you take a partner. Once you are inside the cave, look for cave decorations such as stalactites, stalagmites, and helictites. Look for underground rivers. Also look for cave-dwelling animals such as cave salamanders, bats, and crayfish.