

Extreme

NATIONAL GEOGRAPHIC
EXPLORER

Dear Educator:

When we can get students interested in many levels of a story, we give them tools to help them deal with the world outside of the classroom.

Using the lesson plans provided here, you can help students learn to pay attention to wordplay, such as the alliteration in the story "Chameleons." You can draw them into the story with photos and art. By discussing the chameleons' behavior, you can help students explore social interactions in the way a scientist would.

In "Search for the Pirate Ship *Whydah*," students learn how artifacts can be used as primary sources for telling stories. Targeted lesson plans help them successfully dig through the details.

"Snow Motion" connects the athletes in your classroom to the world of science. As they read, they will link the fun of snowboarding to Newton's laws of motion. The lesson plan targets making connections between prior knowledge and new information. These lessons should help make reading more interactive and more enjoyable.

Sincerely yours,



Francis Downey
Vice President and Publisher



In This Issue

CHAMELEONS

PP. 2-7

Curriculum Connections

- Language Arts • Life Science

Standards Correlations

- **Language Arts:** acquire new information; use visual language to exchange information
- **Science:** understanding of structure and function in living systems; understanding of diversity and adaptations of organisms

Literacy Skills

- **Reading Strategy:** Asking questions
- Visual literacy
- Understanding word parts
- Writing with alliteration

SEARCH FOR THE PIRATE SHIP *WHYDAH*

PP. 8-13

Curriculum Connections

- Language Arts • Social Studies

Standards Correlations

- **Language Arts:** acquire new information; conduct research by generating ideas and questions
- **Social Studies:** ways in which human beings view themselves in and over time; relationships among science, technology, and society

Literacy Skills

- **Reading Strategy:** Determining importance
- Activating prior knowledge
- Using context clues
- Researching legends and tall tales

SNOW MOTION

PP. 14-19

Curriculum Connections

- Language Arts • Earth Science

Standards Correlations

- **Language Arts:** draw on prior experiences; employ a strategy to comprehend and evaluate text
- **Science:** understanding of motion and forces

Literacy Skills

- **Reading Strategy:** Making connections
- Understanding causes and effects
- Studying academic vocabulary
- Using synonyms

Answer Key

Review • Teacher's Guide, p. 8

1. c 2. a 3. b 4. a 5. b
6. d 7. d 8. b 9. d 10. c

Next Issue

- Crocodiles • Super Stargazer
- Poisonous Creatures
- Life as a Maasai Warrior



Chameleons

About the Story

- Chameleons and other animals change colors for many reasons, including communication.

Reading Strategy

- **Asking Questions:** Good readers ask questions. Before reading, they might ask, “What will I learn?” During reading, they might wonder what a word means. After reading, they may have new questions. Invite students to become active readers by asking and answering questions that help them clarify their thinking.

Vocabulary

- **Preview:** Direct attention to Wordwise (p. 7). After you read the definitions, students can connect the meanings to the photographs and story content. Encourage students to think of examples of predators and to name things that are transparent.

Pre-reading Skills

- **Preview and Predict:** Have students skim the article, reading the captions, examining the headings, and paying attention to boldfaced words and other text features. Then ask them what they expect to learn from reading this article. Restate their thoughts as predictions, e.g., “I predict I will find out how and why animals change colors.” Have students confirm or revise their predictions during reading.

Fast Facts

- Chameleons vary by size and body shape. They have things in common, however, such as their foot structure, their eyes, and their tongues.
- Chameleons can whip out their tongues at 26 body lengths per second. The tip of the tongue has muscles that form a suction cup to hold prey.
- Most kinds of chameleons are found in tropical places, such as Madagascar.

After Reading Skills

- **Draw a Diagram:** Draw students’ attention to the “Colorful Cells” section (p. 4). Encourage students to draw, label, and color a diagram that shows the layers of cells.
- **Alliteration:** Read the headings on p. 6 to students. Ask: *What do you notice?* They should point out the repeated letter *c* and the sound /k/. Explain that alliteration is created when words in a row start with the same sound. Invite students to write poems describing chameleons. Tell them that each line of the poem should include an alliterative phrase.
- **Word Parts:** Write the word *chromatic* on the board. Work with students to identify the word’s root (*chrom*). Encourage students to look up other words with the same root. Ask: *What do you notice about the words in this group?* (*They all have to do with color.*)
- **Figure of Speech:** Point out the question at the end of the article (p. 7). Invite students to answer it, using a real-life example of why one might call a person a chameleon. Students might also enjoy naming other figures of speech that compare people to animals.

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Chameleons

Answer the questions using information from the article.

What special features do chameleons have in their skin? How do these features change the animals' appearance?

What happens to a chameleon's skin if a chameleon becomes too warm? Too cool?

Name three other animals that can change color. Explain why each of these animals changes color.

| Animal | Reason for Color Change |
|--------|-------------------------|
| | |
| | |
| | |

Search for the Pirate Ship Whydah



About the Story

- Barry Clifford's curiosity about a lost pirate ship led him to some amazing discoveries about pirates and the slave trade.

Reading Strategy

- **Determining Importance:** Remind students that, as they read, they need to focus on what is most important. Which details help them understand the author's main ideas? While students read the article, they can use the reading strategy work sheet (p. 5) to note important information, which will help them write a summary. Remind students to ask themselves, "Is this something the author wants me to remember?"

Vocabulary

- **Context Clues:** Context clues are clues in and around a word that help readers figure out the word's meaning. Draw students' attention to the word *artifacts* (p. 11). Which clues in the text can help students define it? Point out that a definition appears in the next sentence. Then say: *What if you didn't know the meaning of hand grenade? The author mentions knives and swords in the same sentence. So a hand grenade must be a weapon.* Challenge students to use context clues to figure out the meanings of *loot*, *plantation*, *prized*, *vessel*, and *wreck*.

Pre-reading Skills

- **Activate Prior Knowledge:** Start a KWL chart on the board. In the K column, list what students already *know* about pirate and slave ships. In the W column, list what they *want to know* based on their preview. As students read, encourage them to use self-stick notes to record answers to their questions and other key facts. After reading, invite students to complete the L column.

Fast Facts

- It took 15 years of exploration to find a cannon that experts thought may have come from the *Whydah*. It wasn't until the discovery of the ship's bell that experts agreed that the pirate ship had been found.
- According to legend, Black Sam Bellamy did not start out to be a pirate. He wanted to win over the parents of his girlfriend, Maria. They didn't think a poor sailor would be a good husband. So he and a friend started out as treasure hunters. When they were not successful, they became pirates instead.
- Most merchant ships surrendered to pirates without a fight. Black Sam and his crew captured more than 50 ships, but Bellamy only fought two battles at sea.

After Reading Skills

- **Research Pirate Legends:** Challenge students to do research to find the truth behind pirate legends. For instance, did pirates really make people walk the plank? Students can research and present oral reports about legendary pirates and their ships.
- **Creative Writing:** Researchers found out much about pirates' lives by examining the ship's artifacts. Ask students to imagine researchers a century from now examining artifacts in their school locker or their room. What could researchers find out about their lives? Students can write journal entries from the point of view of these researchers.
- **Create a Map and Time Line:** The *Whydah* traveled from London to the Caribbean to Cape Cod. Students might pinpoint these locations on a map and annotate the locations with important dates and events.
- **Word Choice:** Point out the use of vivid verbs, such as *battered*, *hammering*, *pounded*, *ripped*, and *tossed*. What effect do these verbs have? Encourage students to add these and other active verbs (when appropriate) to their writing.

Search for the Pirate Ship *Whydah*

To help you answer each question, write the most important details from the story.

- Think about what the author most wants you to know.
- State the information in your own words.

| Question | Most Important Details |
|--|------------------------|
| <p>How was the <i>Whydah</i> used as a slave ship?</p> | |
| <p>Why was the <i>Whydah</i> just what pirate Sam Bellamy needed?</p> | |
| <p>What have researchers found out about pirates from looking at artifacts from the <i>Whydah</i>?</p> | |

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Summarize

- On the back of this sheet, write a summary of the article. Include the main idea and the important details you wrote above. Remember that a summary only includes the most important information.
- Share your summary with a partner. Did you choose the same important information?



SNOW MOTION

About the Story

- Extreme snowboarding requires not only skill but also science. Newton's laws help Gretchen Bleiler on the halfpipe. Knowledge of science can help athletes become champions.

Reading Strategy

- **Making Connections:** Good readers think about what they already know about a topic and connect it to new information. Before students read, ask them what they already know about snowboarding and Newton's laws of motion. As they read, pause to discuss how prior knowledge is helping them learn new information.

Vocabulary

- **Use Academic Vocabulary:** Draw attention to Wordwise (p. 19). Explain that these are academic words related to physics, a branch of science. Students can create illustrated glossaries of these content words, showing real-life examples of these words related to motion.

Pre-reading Skills

- **Cause and Effect:** Tell students that a cause makes something happen and an effect is what happens. Have students watch for causes and effects as they read. Bleiler's shifting her weight, for example, is a cause. The effect is that her board changes direction.

Fast Facts

- Gretchen Bleiler began snowboarding at the age of 11. She won a silver medal in the 2006 Winter Olympics in Turin, Italy.
- Bleiler credits her education for her success as an international champion snowboarder. She says many things go into being a professional athlete: math, writing, speech, history, geography, language, and computer skills.
- Snowboarding involves colorfully named tricks, such as the Air to Fakie, Blindside, Bonk, Handplant, and Nollie Frontflip.

After Reading Skills

- **Synonyms:** Remind students that synonyms are words that mean the same or almost the same thing. The author says that bright lights shine on a mountain. Ask what other words could substitute for *bright*. Students can generate synonyms and share ideas. Encourage students to list synonyms for these words: *excited, fun, glides, layer, speeds, zooms*.
- **Oral Language:** Ask students what they would ask Gretchen Bleiler about snowboarding if they could interview her. Students can work in pairs to devise interview questions and answers. They may need to conduct research. Pairs can present their interviews to the class.
- **Answer a Question:** Ask: *How do Newton's laws apply to basketball or another sport you like to watch or play?* Encourage students to use reference sources to find the answer.

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Name: _____



SNOW MOTION

| Newton's law | How does the law relate to snowboarding? |
|---|--|
| <p>Newton's First Law</p> <p>To move an object at rest, a force must get the object started.</p> | |
| <p>Newton's Second Law</p> <p>To keep an object moving, you need the right amount of force.</p> | |
| <p>Newton's Third Law</p> <p>Each action causes an equal and opposite reaction.</p> | |

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Synthesize: Choose one of the sentence starters to pull together your thinking about the article.

To sum up, _____

One new idea I had while I was reading was _____



COMPREHENSION CHECK

Find the correct answer. Fill in the circle.

1. What caused the *Whydah* to sink?

- (a) a slave revolt
- (b) a pirate battle
- (c) a fierce storm
- (d) a fight among the crew

2. Which force helps bring a snowboarder down a mountain?

- (a) gravity
- (b) inertia
- (c) friction
- (d) wind



3. Which of the following artifacts were *not* found on the *Whydah*?

- (a) gold and silver coins
- (b) rakes, hoes, and shovels
- (c) knives, guns, and hand grenades
- (d) hammers, nails, and saws

4. What is special about chameleons' skin cells?

- (a) They can change size.
- (b) They are all green.
- (c) They move around chameleons' bodies.
- (d) They make chameleons want to fight.

5. When a snowboarder leans, the board changes direction. Which law helps explain this?

- (a) Newton's first law of motion
- (b) Newton's second law of motion
- (c) Newton's third law of motion
- (d) none of the above

6. Which of the following is *not* a reason chameleons change color?

- (a) being angry
- (b) feeling too warm
- (c) trying to attract a mate
- (d) matching one another

7. Why might Sam Bellamy have sailed to Cape Cod?

- (a) to trade goods for slaves
- (b) to have repairs done on his ship
- (c) to get weapons
- (d) to visit a girlfriend

8. What cuts friction between a board and a slope?

- (a) dirt under the snow
- (b) a thin layer of melted snow
- (c) more snow falling
- (d) a special wax that keeps snowboards cold

9. Which of these animals is able to change color?

- (a) golden tortoise beetle
- (b) flounder
- (c) goldenrod spider
- (d) all of the above



10. Which shows the first law of motion?

- (a) A snowboarder shifts her weight, and the board changes direction.
- (b) The snowboard pushes on the snow. The snow pushes back up against the board.
- (c) A snowboarder doesn't move until she leans forward.
- (d) As the snowboard hits snow, the board slows down and stops.