Summary

• Like humans, animals make and use tools. Animals make tools out of things they find in their environment.

• Animals use the tools to accomplish different tasks. Tools may help animals eat, drink, or clean themselves. They may make weapons. Making and using tools helps animals survive.

Curriculum in This Article

Common Core State Standards

• Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. (RI.2.1)

• Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (RI.3.1)

• Participate in shared research and writing projects. (W.2.7)

• Conduct short research projects that build knowledge about a topic. (W.3.7)

• Capitalize holidays, product names, and geographic names. (L2.2.a)

• Capitalize appropriate words in titles. (L3.2.a)

Next Generation Science Standards

• Disciplinary Core Idea: Adaptation—For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all.

Materials Needed

• index cards

• a world map

• the National Geographic video "Chimps and Tools" at: http://video.nationalgeographic.com/video/chimp_tools?source=relatedvideo

• "Tool Time" poster

• the National Geographic video "Genius’ Chimp Outsmarts Tube" at: http://video.nationalgeographic.com/video/ape-genius-ani?source=relatedvideo

Additional Resource

• Watch a video in which Jane Goodall tells how she discovered that animals make and use tools:
  ▶ https://vimeo.com/5002231

To access the projectable edition of this article, go to the Teacher tab for this magazine at: ngexplorer.cengage.com.

Go to the Teacher tab at ngexplorer.cengage.com to access the free interactive whiteboard lesson for this article.
Animals have behavioral adaptations that help them survive. One example of this is the ability to make and use tools.

People long thought that only humans could make and use tools. But in 1960, National Geographic explorer Jane Goodall saw something that changed the way people think. She observed chimpanzees making and using tools to remove termites from a termite mound.

Since then, we have learned that animals make and use tools for various reasons. Many animals use tools to get food.

- The New Caledonian crow makes hooks out of twigs to catch prey.
- If a sea otter can't open a sea urchin or mollusk shell with its teeth, it puts a stone on its stomach and pounds on the shell until it cracks open.

Animals also use tools for protection.

- The veined octopus uses two seashells or coconut shells to build a sturdy shield around its body.
- Bottlenose dolphins wrap their beaks in sponges to protect themselves from rough rocks and stinging plants on the seafloor.

Some animals use tools to solve problems. Elephants use grass and branches to swat away pesky insects. They even make the pieces shorter and strip off side branches to turn them into more effective tools.

- The archerfish uses water as a hunting tool. It squirts a stream of water so powerful that it knocks prey out cold.
- Studies show that chimps not only make and use tools, but they can modify tools when necessary to accomplish a task.
**Activate Prior Knowledge**

**Recognizing That Animals Use Tools**

1. Brainstorm with the class to create a list of utensils they use when they eat or drink. Obvious answers are a fork, knife, and spoon. Encourage students to think broader to include items such as chopsticks, a nutcracker, or a straw.

2. Examine the list. Then ask students if they’ve ever seen an animal use a tool in a similar way. If so, what did they see? If not, do students think it’s even possible for animals to do this?

3. Invite students to share their opinions. Revisit the question after reading the article and encourage students to share what they learned.

**Vocabulary**

**Exploring Wordwise Words**

1. Display the Wordwise words on page 9 of the projectable edition and discuss the meaning of each. Then assign each student a partner and give each pair an index card.

2. Direct students to write the word adaptation on the front of the card. Encourage partners to brainstorm ideas for a picture that will remind them of what this word means. Instruct them to draw that picture on the front of the card.

3. Tell students to flip the card over and draw a horizontal line dividing it in half. Instruct them to write the word and its definition on the top half of the card. On the bottom half, instruct them to write a sentence in which they use the word correctly.

4. Give each pair three more cards. Instruct them to create a vocabulary card for each of the remaining Wordwise words.

5. Divide the class into small groups. Encourage partners to explain to their groups how the pictures they drew relate to each term. Then have them share their sentences, leaving out the vocabulary word as they read. Challenge group members to fill in the correct word for each sentence.

**ELL Connection**

**Connecting Vocabulary Words**

1. Instruct students to examine the Wordwise words on page 9 of their magazines. Invite them to share what they know about each vocabulary word.

2. Display page 4 of the projectable edition. Zoom in on the first paragraph of the section "A Matter of Survival." Invite a volunteer to read the paragraph aloud. Examine the paragraph in detail to show students how three of the Wordwise words are connected.

3. Revisit the Wordwise words. As a group, brainstorm additional ways to make connections between two or more terms on the list.
Explore Reading
Questions and Answers About Tools


2. Display pages 2-3 of the projectable edition. Read aloud the headline and deck. Give students a moment to examine the image.

3. Invite each student to pick a slip of paper from the bag. Inform students that good readers constantly ask questions as they read. Many of their questions begin with these six words. Searching for the answers helps them identify and understand key details in the text.

4. Instruct students to write questions about the article that begin with the words they selected. Provide suggestions if necessary.

5. Give each student a copy of the Activity Master. Divide the class into small groups. Instruct students to read the article in their groups.

6. After reading, instruct groups to write one question about the text that begins with each question word. Challenge them to find and record the answer and the page number where they found the information.

Explore Writing
Conducting a Research Project

1. Have students imagine that they work for the National Geographic Channel, which is producing a documentary on how animals use tools. They have been assigned to a team that is responsible for one short segment of the film.

2. Have students rejoin the groups they worked with when reading the article. Instruct them to identify a focus for their segment. Do they want to report on one animal or one type of tool?

3. Once they have a focus in mind, instruct groups to review what they learned to create an outline for their segment. Then encourage them to conduct additional research to gather enough information to write a script for a one-minute presentation.

4. Give groups time to complete their research projects. Have each group share its script with the class.

Explore Language
Using Geographic Names

1. Display page 4 of the projectable edition. Find and highlight the words Africa and Galapagos. Ask the class to find two things these words have in common. Guide them to recognize that both words begin with a capital letter because both identify a place. Locate Africa and the Galapagos Islands on a world map.

2. Encourage students to scan the article in their magazines to locate the capitalized names of more places. Highlight each in the projectable edition. Find each location on the map.

Common Core Grade-Level Differentiation

Grade 2:
► After reading, rejoin as a class. Discuss how finding answers to students' questions gave them a better understanding of key details in the text.

Grade 3:
► Challenge students to refer explicitly to the text as the basis for their answers.

Capitalizing Words in Titles

1. Display pages 2-3 of the projectable edition. Highlight the article's headline. Point out that both words are capitalized. Display page 4. Highlight the subheads. Challenge the class to explain why the word of is lowercase in each.

2. Review the rules for capitalization in headlines. Encourage students to write a new headlines and subheads for the article.
Explore Science
Discovering that Animals Use Tools

1. Prior to conducting this activity, download the National Geographic video "Chimps and Tools" at: http://video.nationalgeographic.com/video/chimp_tools?source=relatedvideo

2. Display page 4 of the projectable edition. Review the information in the section, "A Moment of Discovery." Examine how Jane Goodall discovered that animals make and use tools. Discuss why this was such an important discovery.

3. Display the video. Invite students to comment on what they saw. Point out that this is likely similar to what Goodall saw when she observed chimps "fishing" for termites in 1960. Discuss reasons why being able to make and use tools is an adaptation that can help chimps survive in their environment.

How Tools Help Animals Survive

1. Review the "Tool Time" poster with the class. Challenge students to identify what each animal uses as a tool, why the tool is needed, and how the tool is an adaptation that helps the animal survive.

2. Review the article with the class to create a list of animals it mentions. Then divide the class into small groups. Assign each group one animal from the article. Challenge groups to answer those same question as they relate to their animals: What does the animal use as a tool? Why is the tool needed? How does the tool help the animal survive?

3. Invite groups to share what they learned with the class. Guide the class to recognize that each tool, regardless of its purpose, is an adaptation that helps animals survive in their environments.

Observing Animals That Use Tools

1. Take the class to a quiet area outside. Instruct students to sit and observe the animals around them.

2. Encourage students to see how animals get food, protect themselves, and solve problems. Tell them to look for animals that make and use tools.

3. Return to the classroom and invite students to share what they observed. Discuss in depth any examples of animals that made and used tools. Encourage students to compare what they saw to the examples they read about in the article. If students weren’t able to observe animals making and using tools, challenge them to identify animal behaviors they did see that are adaptations that help the animals survive.

Extend Science
Appreciating Animal Intelligence


2. Begin displaying the video, but stop at the 10-second mark when the words “What would you do?” appear on the screen. Invite students to share their ideas as well as their predictions about what the chimpanzee will do.

3. Display the rest of the video. Encourage students to express their opinions about the chimpanzee’s ability to make and use a tool in this puzzling situation.
### Questions and Answers About Tools

Write one question about the article that begins with each question word. Find and record the answer.

<table>
<thead>
<tr>
<th>Question Word</th>
<th>Page Number</th>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Where</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Why</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Write the page number where you found the answer.

Name: ____________________________
Tool Time

Assessment

Read each question. Fill in the circle next to the correct answer or write your response on the lines.

1. How did Jane Goodall learn that animals make and use tools?
   A  She saw a chimp "fishing" for termites.
   B  She saw a sea otter cracking a shell.
   C  She saw a dolphin carrying a sponge.

2. Which animal makes tool kits?
   A  elephant
   B  orangutan
   C  dolphin

3. What do an Egyptian vulture and a sea otter have in common?
   A  They use tools to solve problems.
   B  They use tools for protection.
   C  They use tools to get food.

4. Which sentence is true?
   A  Adaptations help animals survive.
   B  Tools are easy to make.
   C  Traits are adaptations.

5. What are two ways elephants use tools?
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
<table>
<thead>
<tr>
<th>Question Word</th>
<th>Question</th>
<th>Page Number</th>
<th>Answer</th>
<th>Question Word</th>
<th>Question</th>
<th>Page Number</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who?</td>
<td></td>
<td></td>
<td></td>
<td>Why?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What?</td>
<td></td>
<td></td>
<td></td>
<td>When?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Where?</td>
<td></td>
<td></td>
<td></td>
<td>Where?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When?</td>
<td></td>
<td></td>
<td></td>
<td>Where?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How?</td>
<td></td>
<td></td>
<td></td>
<td>How?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Each question should begin with the appropriate question word. Each answer should come from the text. Write the page number where you found the answer.
How did Jane Goodall learn that animals make and use tools?
A She saw a chimp "fishing" for termites.
B She saw a sea otter cracking a shell.
C She saw a dolphin carrying a sponge.

Which animal makes tool kits?
A elephant
B orangutan
C dolphin

What do an Egyptian vulture and a sea otter have in common?
A They use tools to solve problems.
B They use tools for protection.
C They use tools to get food.

Which sentence is true?
A Adaptations help animals survive.
B Tools are easy to make.
C Traits are adaptations.

What are two ways elephants use tools?
Possible responses: Elephants use branches and plants to swat flies. They use long sticks to
scratch when they itch. They dig water holes and plug them with bark so the holes don’t dry up.
Sky Caves of Nepal: Overview

Summary

• Long ago, people dug thousands of caves into the sides of high cliffs in Nepal. When the people left, the caves were forgotten.

• People rediscovered the caves. Now archaeologists are exploring the caves to learn about this lost culture.

Curriculum in This Article

Common Core State Standards

• Describe how reasons support specific points the author makes in a text. (RI.2.8)

• Describe the logical connection between particular sentences and paragraphs in a text. (RI.3.8)

• Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section. (W.2.2)

• With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (W.3.4)

• Identify real-life connections between words and their use. (L.2.5.a) (L.3.5.b)

National Council for the Social Studies

• Standard 2.d: Time, Continuity & Change—Social studies programs should include experiences that provide for the study of the ways human beings view themselves in and over time so that the learner can identify and use various sources for reconstructing the past, such as documents, letters, diaries, maps, textbooks, photos, and others.

Materials Needed

• the video "PBS Previews: Secrets of Shangri-La" at: https://www.youtube.com/watch?v=IRLyIbt6wvs

• the National Geographic photo gallery "Nepal Photos" at: http://travel.nationalgeographic.com/travel/countries/nepal-photos/

• a world map

• Google Maps at: https://www.google.com/maps/@29.19209,83.8736978,34827m/data=!3m1!1e3

Additional Resource

• Learn more about the sky caves of Nepal: ► http://ngm.nationalgeographic.com/2012/10/mustang-caves/finkel-text
The sky caves are located in the Mustang district of Nepal. Mustang, it's thought, was once a kingdom ruled by powerful kings.

The steep cliffs of this remote location contain as many as 10,000 human-built caves. Many of the caves are thousands of years old. Almost all evidence that might reveal who built the caves, why they were built, or how people got into them has been lost over time.

Seven hundred years ago, Mustang was the center of Buddhist scholarship and art. It was also, most likely, the easiest connection between the salt deposits of Tibet and cities of the Indian subcontinent. This made Mustang a busy and important place. Salt, at the time, was one of the world's most valuable commodities.

In the 17th century, Mustang's reign came to an end. Nearby kingdoms took over and cheaper salt became available from India. The people left, and the caves of Mustang—which had served over time as burial chambers, homes, storage units, and military lookouts—were forgotten.

It wasn’t until the mid-1990s that the area was rediscovered. Archaeologists began exploring some of the more accessible caves. They found burial chambers containing human remains that were at least 2,000 years old. The bodies were adorned with copper jewelry and glass beads, items that reflected the area's history of wealth and status.

Pete Athans first saw the caves in 1981. He was finally able to get the necessary permits to explore the caves in 2007. During multiple visits, Athans has found exquisite portraits; a collection of hand-written manuscripts; and other artifacts that are just beginning to reveal the secrets of this once-powerful place.

Few people have explored inside the sky caves of Nepal. They are located in a restricted area of Nepal that has been long closed to outsiders.

In addition, accessing the sky caves takes expert mountaineering skills. Pete Athans, the climber who led the team of archaeologists on this expedition, has reached the summit of Mt. Everest seven times. He is known as "Mr. Everest."
Sky Caves of Nepal: Prepare to Read/Language Arts

Activate Prior Knowledge
Brainstorming Ideas About Sky Caves

1. Display pages 10-11 of the projectable edition, only showing the article's headline. Encourage students to brainstorm ideas about what they think it means.

2. Zoom out to show the image as well. Instruct students to incorporate what they see into their ideas. Invite volunteers to explain what they think a sky cave is.

Explore Reading
Describing Points and Connections

1. Display pages 10-11 of the projectable edition. Point out that the man in this photo has a rope. Why? Explain that these caves are high on the side of a cliff. The rope is a tool. It helps the climber stay safe.

2. Read aloud the headline and deck. Highlight the word mysterious and the term slowly giving up their secrets. Inform students that writers, just like climbers, use tools in their work. A writer's tools are words. Words help readers connect ideas when they read. They help writers support those ideas when they write.

3. Give each student a copy of the Activity Master. Read the article as a class. As you do, instruct students to identify any reasons or connections that help them understand the two major points the writer made. Record that information on the Activity Master.

Explore Writing
Write an Informative Book

1. Review with students reasons why authors write: to inform, persuade, or entertain. Have students identify the purpose of this text (to inform). Ask what the text was trying to tell (why the caves are mysterious).

2. Explain to students that articles and books use different tools to inform readers. They contain facts, definitions, and examples. Photos and illustrations also tell about the text.

3. Divide the class into small groups. Instruct groups to review the article to record information about the people who lived in the sky caves. Then challenge them to each write an informative book about the people who lived in the sky caves. Instruct them to write the book for students their age.

4. Circulate among the groups to provide assistance when needed. Invite groups to share their finished books with the class.

Explore Language
Make Real-Life Connections to Words


2. Next, highlight the words dusty and windy in the section, "Cliff Caves of the Dead." Encourage students to describe what it's like in this place.

3. Point out to students that sometimes words have a logical, real-life connection to their meaning. If you understand that connection, you know what the word means.

4. Challenge students to find more examples of words with real-life connections in the article. Invite them to highlight each. Identify the connection and discuss.

Common Core Grade-Level Differentiation

Grade 2:
► After reading, challenge students to describe in detail how the writer used reasons to support the two major points in the text.

Grade 3:
► After reading, have students describe logical connections between particular sentences and paragraphs in the text. Discuss how they connect to the two key points.
Explore Social Studies
Reconstructing the Past

1. Prior to conducting this activity, download the video "PBS Previews: Secrets of Shangri-La" at: https://www.youtube.com/watch?v=IRLyJbt6wvs

2. Display page 14 of the projectable edition. Zoom in on the section, "What's Been Found." Review the section with the class, and highlight each item that could be identified as an artifact of the sky cave culture. Discuss what each of these items might reveal about the people who used to live here.

3. Display the video. Encourage students to discuss what they learned about the artifacts. How did specific items help them understand more about the people who used to live here?

Extend Social Studies
Mapping the Sky Caves

1. Prior to conducting this activity, download the following site on Google Maps: https://www.google.com/maps/@29.19209,83.8736978,34827m/data=!3m1!1e3

2. Ask the class where the sky caves are located (Nepal). Then ask students where Nepal is. Invite them to share what they know. Point out Nepal on a world map.

3. Remind students that the article said the sky caves were in a remote location. That is part of the reason they were long forgotten.

4. Display the Google Maps site. Zoom in and out to give students a better understanding of where the sky caves are located and what the geography is like. Discuss reasons why geography could have a big influence on the history of this place.

Connecting the Past to the Present

1. Prior to conducting this activity, download the National Geographic photo gallery "Nepal Photos" at: http://travel.nationalgeographic.com/travel/countries/nepal-photos/

2. Ask the class: What is culture? Invite students to share their ideas. Then challenge students to identify different parts of culture. If necessary, prompt students with ideas such as food, clothing, language, or customs.

3. Discuss the types of items researchers could use to learn about culture. For instance, the archaeologists in the article learned from skeletons, mirrors, cooking pots, and other items they found in the caves. They also learned from the hand-written pages they found.

4. Display the photo gallery for the class. Discuss the images. Challenge students to compare what they see here to the types of artifacts they read about in the article. Challenge groups to find links between modern-day Nepal and the people who lived in the sky caves long ago.
| The caves are mysterious. | The caves are slowly giving up their secrets. |

Write reasons or connections that support each of these points in the article:

**Describing Points and Connections**
Assessment

Read each question. Fill in the circle next to the correct answer or write your response on the lines.

1. Why are the sky caves of Nepal hard to explore?
   A They’re on the sides of cliffs.
   B They’re near volcanoes.
   C They’re underground.

2. What have researchers learned about the people who lived here?
   A They were tall.
   B They were wealthy.
   C They traded silk.

3. How did the people get into the sky caves long ago?
   A They climbed steps.
   B They used ropes.
   C Nobody knows.

4. What did Pete Athans find inside a cave?
   A diamond rings
   B iron daggers
   C gold coins

5. Write three things researchers know about the sky caves.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
**Activity Master**

**Sky Caves of Nepal**

Students should note that nobody knows who dug the cliffs, why they dug them, or how they got into them. The people who lived here left, and the sky caves were forgotten. They weren’t discovered again until the mid-1990s. Archaelogists have searched inside the caves, but they haven’t found anything to date. The caves are mysterious.

<table>
<thead>
<tr>
<th>The caves are mysterious.</th>
<th>The caves are slowly giving up their secrets.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students should note that archaeologists explored the caves and learned about the thousands of caves. It will take time to explore the caves and learn about the people who lived here.</td>
<td></td>
</tr>
</tbody>
</table>

**Describing Points and Connections**

Write reasons or connections that support each of these points in the article.

Name:

Answer Key
Sky Caves of Nepal

Assessment

Name: ____________________________

Read each question. Fill in the circle next to the correct answer or write your response on the lines.

1. Why are the sky caves of Nepal hard to explore?
   A They're on the sides of cliffs.
   B They're near volcanoes.
   C They're underground.

2. What have researchers learned about the people who lived here?
   A They were tall.
   B They were wealthy.
   C They traded silk.

3. How did the people get into the sky caves long ago?
   A They climbed steps.
   B They used ropes.
   C Nobody knows.

4. What did Pete Athans find inside a cave?
   A diamond rings
   B iron daggers
   C gold coins

5. Write three things researchers know about the sky caves.
   Possible responses include: People dug the caves. The caves are on the sides of cliffs. There are as many as 10,000 caves. Many of the caves are thousands of years old. The caves are sometimes stacked in groups. The people who lived here were wealthy. The people left and the place was forgotten. It is difficult to explore the sky caves.
Bringing Nature Into Focus: Overview

Summary

• National Geographic photographer Gabby Salazar takes pictures of nature. Her goal is to use her photos to change the world.

• Through her photos, Salazar tries to make people aware of the plants and animals that live around them. She hopes to convince people to protect the environment.

Curriculum in This Article

Common Core State Standards

• Identify the main topic of a multi-paragraph text as well as the focus of specific paragraphs within the text. (RI.2.2)

• Determine the main idea of a text; recount the key details and explain how they support the main idea. (RI.3.2)

• With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. (W.2.6)

• With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others. (W.3.6)

• Use knowledge of the meaning of individual words to predict the meaning of compound words. (L.2.4.d)

• Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified. (L.3.1.g)

Additional Resources

• See more of Gabby Salazar’s photos: ► http://www.gabbysalazar.com/#!/index

• Watch to see what inspires other National Geographic photographers: ► http://proof.nationalgeographic.com/2013/09/15/the-photographers-on-photography/

Materials Needed

• plain white paper

• sentence strips

• scissors

• paper bags

• National Geographic’s photo galleries at: http://photography.nationalgeographic.com/photography/photogalleries/

• "Protecting Our Planet" poster

• digital cameras

Next Generation Science Standards

• Disciplinary Core Idea: Biodiversity and Humans—Populations live in a variety of habitats, and change in those habitats affects the organisms living there.
National Geographic Young Explorer Gabby Salazar began taking photos when she was 11 years old. She focused on conservation photography while working on assignment in Peru. After sharing her photos with locals who lived just 30 minutes from the jungle, she realized that many people were seeing some of the plants and animals in her images for the first time in their lives. Her photos helped them discover the beauty in their own backyards.

Salazar has traveled throughout North America and to more than 15 countries. She sees photography, or visual storytelling, as one of the most effective ways to get people engaged in science and conservation.

Many of the locations Salazar visits are tropical rain forests. With her photos, she records populations of plants and animals that are threatened by human activities such as logging, farming, and other types of development.

Salazar’s photos have raised awareness. For example, in 2010 and 2011 she spent 10 months documenting wildlife that live in a conservation corridor along the Interoceanic Highway in Peru. Her photos showed people how plants and animals in the rain forest connect with their own lives. The photos inspired people to protect and conserve life in these corridors.

**Fast Facts**

- Since 1996, 361 new plant and animal species have been discovered in Borneo.
- At the current rate of deforestation, the world’s rain forests could disappear within the next hundred years.
Activate Prior Knowledge  
Raising Awareness of One’s Surroundings

1. Give each student a piece of plain white paper. Then instruct students to look around the classroom to search for something they think most people might not notice. Tell students to draw a picture of that object, including as much detail as possible.

2. Post students’ images on the board. Invite the class to observe the drawings. Challenge students to identify each item and find it in the classroom. Discuss how taking a moment to notice the surroundings can yield amazing results.

Vocabulary  
Sorting Out Definitions

1. To conduct this activity, you will need several sentence strips and scissors.

2. Display the Wordwise words on page 22 of the projectable edition. Have volunteers read aloud each vocabulary term and its definition.

3. Divide the class into small groups. Give each group four sentence strips and a pair of scissors. Instruct them to write each word and its definition on one sentence strip. Then direct them to cut the strips apart so there are one to three words on each piece.

4. Tell students to scramble the sentence pieces associated with the word biodiversity. Then have them reassemble the words to form an accurate definition. Repeat this process for the remaining words.

5. Rejoin as a class after groups have reconstructed each word several times. Invite students to share what they learned about each word.

ELL Connection  
Understanding and Restating Definitions

1. Display the Wordwise words on page 22 in the projectable edition. Review each word and its definition with the class.

2. Divide the class into groups of four. Give each group member two pieces of paper and each group a paper bag.

3. Instruct groups to assign each member one vocabulary word. Students should write their assigned word on one piece of paper and its definition on the other. Then put both papers in the paper bag.

4. One at a time, have group members take a paper from the bag and read it aloud. If it's a definition, they must state the correct vocabulary word. If it's a word, they must state the definition.

5. As students pull papers from the bag, have them match word with its definition.
Explore Reading
Determining the Main Idea

1. Display pages 16-17 of the projectable edition. Read aloud the headline and deck. Then invite students to predict what this article will be about.

2. Read the article as a class. As you do, stop periodically to give students a chance to discuss what they’ve read. Identify and record key details in the text.

3. After reading, guide students as they use the key details they noted to identify and record the main idea of the article. If necessary, guide students to recognize that this article is about a photographer who is using her work to make a difference.

Common Core Grade-Level Differentiation

Grade 2:
▶ As you read, select paragraphs in the text and ask students to identify the focus of each. Help them use what they’ve read up to that point to narrow down the main topic of the article.

Grade 3:
▶ After reading, encourage students to recount the key details and explain how they support the main idea of the text.

Explore Writing
Opening Eyes Through Photography

1. Prior to conducting this activity, download the home page for National Geographic’s photo galleries at: http://photography.nationalgeographic.com/photography/photogalleries/

2. Instruct students to open their magazines and examine the images in the article. Invite volunteers to identify the photo they like best and explain why. Discuss how Gabby Salazar’s photos can help her encourage people to protect living things and the places where they live.

3. Divide the class into small groups. Instruct groups to select one photo gallery on the National Geographic site. Tell students to choose three photos from the gallery and write a caption for each. Then have them write a short summary explaining how the photos inspire them to care about the planet.

Explore Language
Using Compound Words

1. Display page 18 of the projectable edition. Add a note beside the first paragraph. Write the words butter and fly on the note. Ask students what these words mean. Then ask if they see either of these words or something similar in the text. Invite a volunteer to identify the correct word (butterfly).

2. Inform students that butterfly is a compound word, or one word made when two other words are put together. Sometimes the combination makes sense. For example, a doghouse is a house for dogs. Sometimes it doesn’t. Butterflies fly, but they’re not made of butter!

3. Have students scan the article to find more compound words. Highlight each and discuss how the original words do or do not help define the term.

Comparative and Superlative Modifiers

1. Review the concepts of comparative and superlative modifiers with the class. Then display page 18 of the projectable edition. Zoom in on the introduction. Challenge students to find an example in the first paragraph (largest).

2. Examine the word with the class. Is it comparative or superlative? (superlative) What would the comparative form be? (larger)

3. Review the rest of the article with the class. Challenge them to find as many examples of comparative and superlative modifiers as they can.
**Explore Science**

**Human Impacts on Nature**


2. Highlight Salazar’s thought in the third paragraph. Encourage students to explain what caused her to think this. Discuss what it means to be a conservation photographer.

3. Point out that Salazar takes photos of places that other humans have changed. Those changes have affected the plants and animals that live there.

4. Give each student a copy of the Activity Master. Review the article as a class. As you do, challenge students to identify what humans did to change the environments of Borneo and Peru. Work together to list plants and animals that live in each location. Then identify the biggest environmental concern in each place. Write a sentence explaining how Salazar’s photos have helped protect each place.

**Extend Science**

**Creating Photographs That Inspire**

1. Display the "Protecting Our Planet" poster once again. Point out that these photographers all have one key thing in common: a true passion for their work. They want their photos to inspire awareness and change.

2. Brainstorm with students to help them recognize things in nature that are important to them. Challenge them to identify something they’d like to change. Discuss how this could be done through photography.

3. Provide access to digital cameras. Encourage students to focus on that topic and take photos that will inspire others to care and want to protect this part of nature, too.

**Protecting Our Planet**

1. Display and review the poster, "Protecting Our Planet." Guide students to recognize that these photographers, like Salazar, want their work to inspire people to care about Earth.

2. Divide the class into small groups. Instruct groups to select one of the photographers on the poster and conduct research to learn more about his or her work. Have students create a photo display showcasing that photographer’s work along with a description of how the photos are making a difference.
<table>
<thead>
<tr>
<th></th>
<th>Peru</th>
<th>Borneo</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What have humans</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>done?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>What lives here?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>environmental</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>concern?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>What is the biggest</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>environmental</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>concern?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>How have Salazar’s</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>photos helped?</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Use this chart to record information about the article.**

**Name:** ____________________________

**Activity Master**

**Bringing Nature into Focus**
Read each question. Fill in the circle next to the correct answer or write your response on the lines.

1. What is Gabby Salazar trying to save?
   A) extinct animals  
   B) biodiversity in nature  
   C) human activities

2. How can her photos help do this?
   A) They can make people build more zoos.  
   B) They can inspire people to protect the environment.  
   C) They can encourage people to build more roads.

3. Where would Salazar most likely work?
   A) in a building  
   B) under the ocean  
   C) in a rain forest

4. Why hasn’t she taken photos of any animals that are extinct?
   A) If an animal is extinct it is gone forever.  
   B) She hasn’t been where they live yet.  
   C) Extinct animals are only found in zoos.

5. What did her photos help create in Peru?
   A) the Interoceanic Highway  
   B) a conservation corridor  
   C) a rain forest
Logging companies chop down trees for lumber. Plantation owners clear land to grow palm trees. Mining companies mine for coal.

People have cleared too much land. The biodiversity of the rain forest is being threatened.

Animals: leeches, giant river toad, stink bug
Plants: trees, moss, wild orchids, pitcher plants, rafflesia flower

Animals: jaguars, macaws, tarantulas
Plants: grass, trees

People built a road across South America.
The highway gives people easy access to the forests. This puts plants and animals at risk.
The highway gives people easy access to much land. The biodiversity of the rain forest is being threatened. People have cleared too much land.

Salazar's photos can show people how precious the plants and animals are.
Salazar used her photos to help a local group of conservationists create a series of conservation corridors.

### Use this chart to record information about the article.

<table>
<thead>
<tr>
<th>What have humans done?</th>
<th>Borneo</th>
<th>Peru</th>
</tr>
</thead>
<tbody>
<tr>
<td>People built a road across South America.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### What lives here?

<table>
<thead>
<tr>
<th>Borneo</th>
<th>Peru</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plants: grass, trees</td>
<td>Plants: grass, trees, moss, wild orchids, pitcher plants, rafflesia flower</td>
</tr>
<tr>
<td>Animals: leeches, macaws, tarantulas</td>
<td>Animals: leeches, giant river toad, stink bug</td>
</tr>
</tbody>
</table>

### What is the biggest environmental concern?

<table>
<thead>
<tr>
<th>Borneo</th>
<th>Peru</th>
</tr>
</thead>
<tbody>
<tr>
<td>People have cleared too much land. The biodiversity of the rain forest is being threatened. People have cleared too much land.</td>
<td>The highway gives people easy access to the forests. This puts plants and animals at risk.</td>
</tr>
</tbody>
</table>

### How have Salazar's photos helped?

<table>
<thead>
<tr>
<th>Borneo</th>
<th>Peru</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salazar's photos can show people how precious the plants and animals are. Salazar used her photos to help a local group of conservationists create a series of conservation corridors.</td>
<td></td>
</tr>
</tbody>
</table>
Read each question. Fill in the circle next to the correct answer or write your response on the lines.

1. What is Gabby Salazar trying to save?
   - A extinct animals
   - B biodiversity in nature
   - C human activities

2. How can her photos help do this?
   - A They can make people build more zoos.
   - B They can inspire people to protect the environment.
   - C They can encourage people to build more roads.

3. Where would Salazar most likely work?
   - A in a building
   - B under the ocean
   - C in a rain forest

4. Why hasn’t she taken photos of any animals that are extinct?
   - A If an animal is extinct it is gone forever.
   - B She hasn't been where they live yet.
   - C Extinct animals are only found in zoos.

5. What did her photos help create in Peru?
   - A the Interoceanic Highway
   - B a conservation corridor
   - C a rain forest