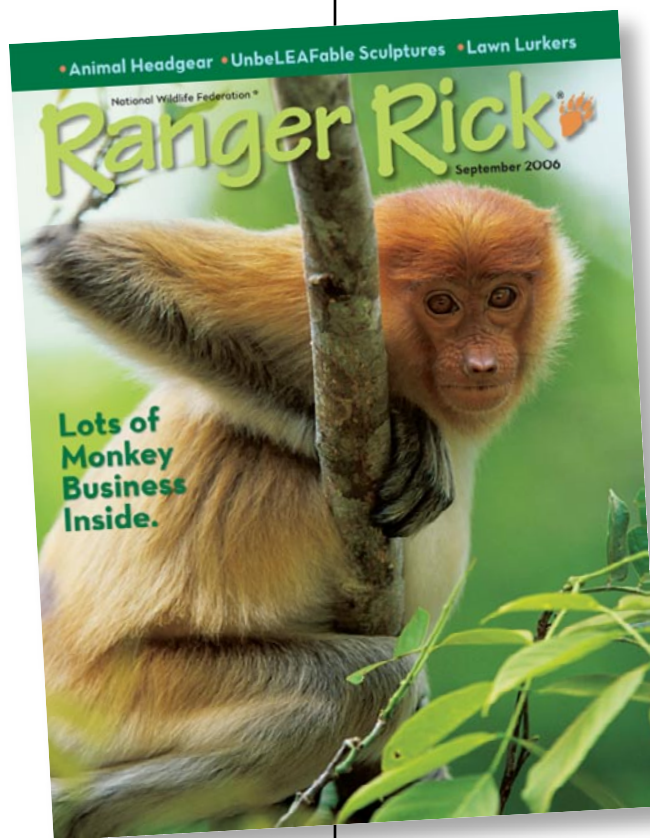


SEPTEMBER 2006



EDUCATOR'S GUIDE



This guide is designed to complement the
September 2006 issue of National Wildlife Federation's
Ranger Rick® magazine.





Contents & Contacts

[2 Contents & Contacts](#)

[3 Introduction](#)

ACTIVITIES

[4 Headgear](#)

[7 What's Lurking in Your Lawn?](#)

[9 Ranger Rick's Adventures](#)

[11 Borneo's Amazing Monkeys](#)

[14 Family Fun Page](#)

[15 National Standards for
Science and Language Arts](#)

Writer: Kate Hofmann

Editors: Ellen Lambeth and Gerry Bishop

Designer: Jeffrey Hutman

NWF Executive Staff

Larry J. Schweiger, *President and Chief Executive Officer*

Jaime Berman Matyas, *Executive Vice President and
Chief Operating Officer*

Education Leadership Staff

Gerry Bishop, *Editorial Director, Children's Publications*

Kevin Coyle, *Vice President, Education*

**For more information on NWF's education programs,
visit www.nwf.org/education**

**For more information about this guide, or to offer
comments, email Kate Hofmann at chofmann@nwf.org**

National Wildlife Federation

11100 Wildlife Center Drive

Reston, VA 20190

1-800-822-9919

info@nwf.org

www.nwf.org



**Winner of the Association of Educational Publishers' Distinguished
Achievement Award for excellence in educational publishing.**

The *Ranger Rick Educator's Guide* (ISSN 1931-3470) is published monthly by the National Wildlife Federation as a complement to *Ranger Rick*® magazine. It is available online, free of charge, in PDF format. To access the guide, go to www.nwf.org/rrguide. To subscribe to *Ranger Rick*® and find other fun stuff for kids, visit www.nwf.org/kids.



Introduction

Welcome to the *Ranger Rick Educator's Guide!*

This guide provides you with educational activities to bring **National Wildlife Federation's *Ranger Rick***[®] magazine alive in the classroom and beyond. Using *Ranger Rick* feature articles as an entry point, this guide engages students ages 7-12 in exploring the natural world to build literacy, critical and creative thinking skills, and understanding across the disciplines. Activities are correlated with the National Education Standards for science and language arts, and are designed to assist you in meeting required curriculum objectives.

Can we have class outside today?

Find out how you can say "Yes!" at www.nwf.org/backyardwildlifehabitat. The outdoor environment offers excellent opportunities for active, hands-on, interdisciplinary learning. You can enhance the learning experience by creating your own habitat site. Revitalize an entire schoolyard, a garden, or even a rooftop, windowsill, or balcony by creating an outdoor classroom and sanctuary for birds, butterflies, and other wildlife.

How To Use This Guide

Each section of the guide is matched with a specific *Ranger Rick* feature. After you read through the magazine, choose the stories and activities that complement your curriculum and that will interest your students. Sections include:

- **Learning Links.** A summary of concepts presented in the article.
- **Discussion Questions and Writing Prompts.** Entry points to engage students in discussion or writing to develop literacy and thinking skills.
- **Resources.** Web sites and books where you can find further information.
- **Activity Ideas.** Quick investigations and extended projects to complement article topics.
- **Student Pages.** Ready-to-copy activity sheets for students.

We have also provided a **Family Fun** activities page for you to copy and send home with students.

Subscribe to *Ranger Rick!*
Special rate classroom subscriptions available.
Details at www.nwf.org/rangerrick



Headgear

pages 4-11

Learning Links:

Horns and antlers serve many of the same purposes, but they also have some distinct differences. Students sharpen their classification skills as they learn about the animal world's answer to headgear.

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- Name some things people wear on their heads. Why do they wear these things?
- Some animals “wear” horns or antlers. Why do you think they have them?
- Do you know the differences between horns and antlers? What do you think they are?

Comprehension Check:

- What kinds of animals have headgear?
- What are the two kinds of headgear?
- How are they the same? What makes them different?
- In which animal groups do both the males and females have headgear?
- In which groups do only the males have it?
- What are three ways animals use their horns or antlers?
- What are some other animals that have horn-like headgear?

Critical and Creative Thinking Connections:

- Animals with antlers lose them each year. What might be some advantages to losing them?
- Animals with horns keep them throughout their lives. What might be some advantages to keeping them?
- How are caribou and pronghorns exceptions to rules about horns and antlers?
- People don't have horns or antlers, of course. But do we ever use tools or attach things to our bodies that serve the same purposes? Explain.
- How are horns like hair? Like fingernails? (There's an obvious answer, but can you think of some other creative answers, too?)
- Can you name a mythical animal with a horn? How about a prehistoric creature?

RESOURCES

Imogene's Antlers by David Small (Crown). What if you woke up one morning and found you had grown a set of antlers? That's exactly what happens to Imogene, and it makes for a very interesting day!

➤ www.nps.gov/yell/kidstuff/AHgame/index.htm Match the antlers or horns with the appropriate Yellowstone animal—and be sure to try some silly combinations, too!

➤ animaldiversity.ummz.umich.edu/site/topics/mammal_anatomy/horns_and_antlers.html Still need more antlers . . . er, answers? Find the finer points here!

ACTIVITY IDEAS

Who's Who of Horns and Antlers

Provide students with copies of the [Horns and Antlers student page](#). Have them record inside the outlines of the horn and antler the characteristics of each kind of headgear, using what they learned in the *Ranger Rick* story. Alternatively, students could draw their own horn and antler outlines, using photos from the story for inspiration. They could also overlap the outlines and use them as a Venn diagram, recording features that horns and antlers share in the overlapping area and differences in the parts of the outlines that don't overlap.

TIME:

15 Minutes

MATERIALS:

Paper and pencils
[Horns and Antlers student page](#)

Headgear Matchup

Give students two index cards apiece and have them write the name of a horn- or antler-bearing animal on one of them. On the other, have them draw the animal's headgear or cut out a picture of it and glue it to the card. They could also add some facts about the animal in the remaining space on the cards. Then spread all the cards out (face down) on a table and play a memory matching game. One at a time, students turn over pairs of cards and attempt to find a matching set. If they find a match, they remove those two cards from the table. Play until all the cards are matched. Alternatively, students could sort the cards into categories: horns, antlers, and horn-like projections. For a fun computer version of headgear matching, see www.nps.gov/yell/kidstuff/AHgame/index.htm.

TIME:

30 Minutes

MATERIALS:

Index cards
Pencils, colored pencils,
crayons

Having Headgear

Read *Imogene's Antlers* (see resources) to the group. Then ask students to imagine what would happen if they woke up one morning to find they'd sprouted a set of horns or antlers. Have them draw and describe what their headgear would look like and explain how they would use it. Discuss the advantages and disadvantages of this new headgear, and challenge them to come up with creative solutions to the problems it might cause.

TIME:

30 Minutes

MATERIALS:

Imogene's Antlers
by David Small
Paper and pencils

Making Headgear

If *imagining* a set of horns or antlers isn't enough, let students make some! Have them look through the *Ranger Rick* story and other books to choose what kind of headgear they'd like to make. Provide materials such as craft foam, ice cream sticks, pipe cleaners, cardboard, construction paper, or paper mache. To attach the headgear, tie it on with string or ribbon or secure it to a headband or hat. Have students write down a few facts about their animal; then give each one a turn in the spotlight to share this information and let other students guess his or her identity. Finish with a parade to show off your fashionable new headgear!

TIME:

60 Minutes

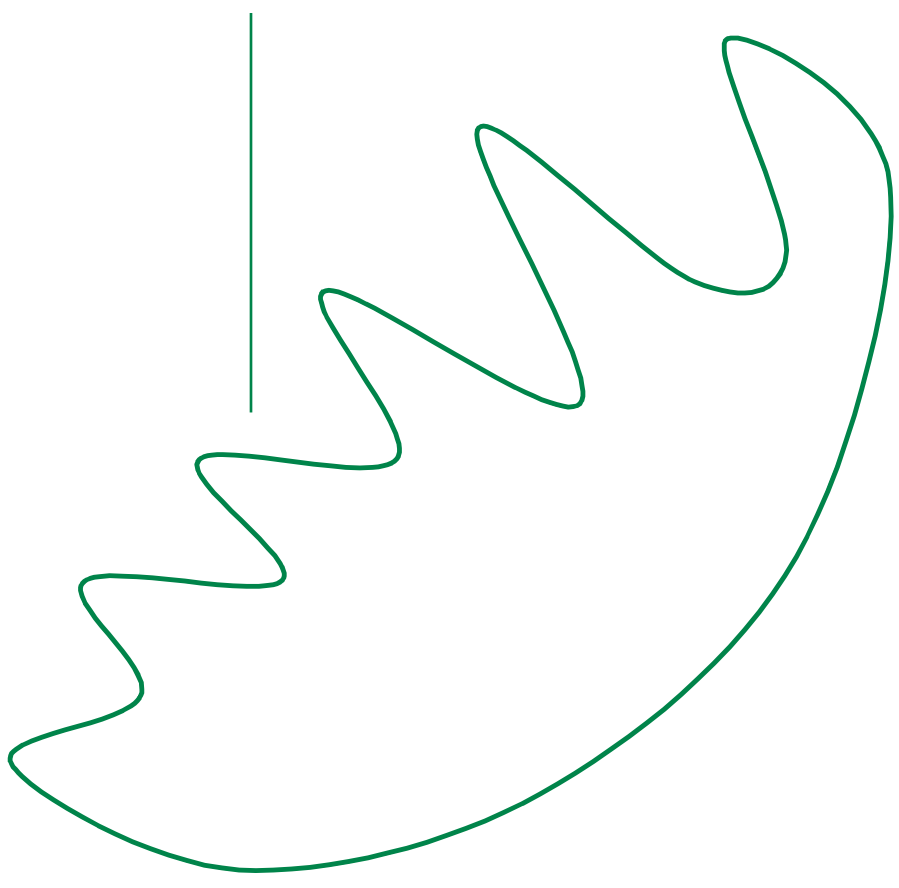
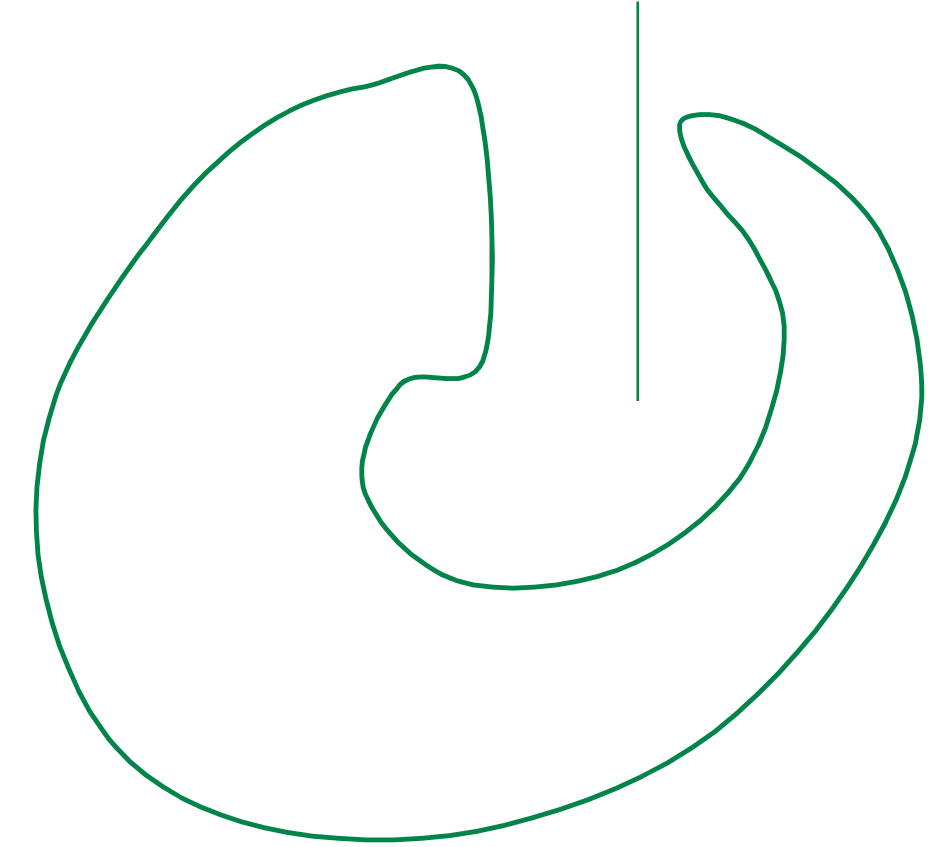
MATERIALS:

Books/Internet for
research
An assortment of craft
supplies
Scissors
Glue
Tape

Student PAGE

HORNS & ANTLERS: WHO'S WHO?

*Which of the drawings below is a horn and which is an antler? Label them with the correct name.
Then write inside each drawing the features of that kind of headgear.*





What's Lurking in Your Lawn?

pages 21-27

Learning Links:

Can a nearby patch of boring old lawn be the setting for a wild safari? Indeed it can—if you dig in and look close! As students explore the teeming world underground, they'll discover not only some strange creatures, but also some familiar ecological concepts such as food webs, predator-prey relationships, and decomposition.

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- Describe your lawn or the lawn of your school or a nearby park.
- What do you think might live in and under the grass of that lawn?

Comprehension Check:

- Where do all the animals in this story live?
- What is a food web?
- What is the role of plants in the food web?
- Name five animals in this story that eat plants.
- Name five animals in this story that eat other animals.
- Plants feed animals, of course. Do animals also feed plants? Explain.

Critical and Creative Thinking Connections:

- Which of the animals in this story could you see if you were looking out the window?
- Which could you see with just your eyes if you looked from close up?
- Which would you need a microscope to see?
- Do you think you could find these animals in a lawn near you? Why or why not?
- What do you predict would happen if decomposers such as microbes, fungi, and earthworms didn't break down dead things?
- How long does it take to form one inch of soil? Why do you think it takes so long?

RESOURCES

Wormology, Rolypolyology, and others in this series by Michael Elsohn Ross (Carolrhoda Books). Check out these books for an in-depth study of some of the creepy-crawly creatures that lurk in your lawn. Questions, observation activities, and simple experiments engage students in hands-on science inquiry.

Backyard Detective: Critters Up Close by Nic Bishop. (Tangerine Press, 2002). Zoom in on backyard habitats with close-up photos and a helpful index for identifying the creatures you find.

➤ school.discovery.com/schooladventures/soil/field_guide.html Check out this field guide to soil creatures. Don't miss the soil safari for an insider's view of the underground world!

➤ soil.gsfc.nasa.gov Get all the dirt on soil at NASA's soil science Web page.

➤ www.blm.gov/nstc/soil/Kids/index.html Follow Wilbur the soil wizard on a journey into the world of soil biology.

ACTIVITY IDEAS**Food Webs**

Have students use the information in the story to describe one or more food chains. For instance, dead leaves are eaten by an earthworm, which is eaten by a robin. Students could write out their chains in words or illustrate them with drawings or photo cutouts.

TIME:**15 Minutes****MATERIALS:****Paper and pencils****Underground News**

Pretend to be news reporters investigating life in the underground world. Have students write a story about what they imagine, including details about the setting and quotes from "interviews" with the residents.

TIME:**30 Minutes****MATERIALS:****Paper and pencils****Lurkers in the Lens**

Ready for an up-close look at the underground world? Send students on a safari to discover what's lurking in the lawn. Supply each student with a hand lens for zooming in on their finds. Demonstrate how to handle creatures gently and return them to their homes after observing them. Then ask students to find and observe an insect or another small creature and make a detailed drawing of it as they see it through the lens. Encourage them to add notes about where they found it and what it does. Afterward, invite them to share what they observed with the group. As an extension, create a field guide to soil creatures. Students can make a page for each creature found, including drawings, photos, and notes from their observations.

TIME:**45 Minutes****MATERIALS:****Hand lenses****Small garden trowels
for digging****Spoons, cups for****collecting creatures****Paper and pencils****Bug Count**

Be entomologists for a day! Sample the diversity of creatures in a nearby lawn and compile the results in charts or graphs. Use the instructions on [pages 26-27](#) of the magazine or at www.nwf.org/rangerrick to construct some bug-collecting tools. Then sample one or more locations. Have students note the characteristics of the vegetation and soil and record data such as the size of the study area, the depth of their sample holes, and the kinds and numbers of creatures they find. If you sample in several different locations (such as a heavily trampled lawn, a lawn treated with chemicals, a meadow, a garden, a forest), students can make predictions about the kinds and numbers of creatures they'll find in each location and compare the results. Ask them to hypothesize reasons for any differences (including why they might have found very few living things in certain places).

TIME:**45 Minutes****MATERIALS:****Bug collecting tools
(see pages 26-27)****Garden trowels for
digging****Tape measure****Paper and pencils****Dig Deeper**

Dig a one- to two-foot hole in a nearby lawn (be sure to get permission!) and examine the soil layers. Can students find differences in color, texture, and composition as they dig deeper? What kinds of living things do they see? Which layer(s) seem to contain the most living things? Ask students why they think this is. Relate their findings to the food web (animals feed on plants, and most plants are found in upper layers where they have access to sunlight).

TIME:**45 Minutes****MATERIALS:****Shovels****Hand lenses**



Ranger Rick's Adventures

pages 29-31

Learning Links:

This month's adventure focuses on recent controversy about the Navy's use of high-powered underwater sonar and its potential impacts on marine mammals. The topic offers an opportunity to consider a complex issue from multiple perspectives and debate the pros and cons of various solutions.

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- Whales, dolphins, and bats all navigate using echolocation. Can you describe how this works?
- Do humans use anything like echolocation?

Comprehension Check:

- Where does this story take place?
- What happened in Part 1 of this adventure?
- Why didn't Polly and her pod get stranded as the whales in Part 1 did?
- What happens when an animal is deep in the ocean and quickly swims to the surface?
- Why does Rick think there might be a connection between the whales' strange behavior and the Navy ship?
- Why does the Navy use sonar?

Critical and Creative Thinking Connections:

- What does the word "pilot" mean? What is Polly's role in her pod of pilot whales?
- How did Rick, Scarlett, and Boomer use what they knew about pilot whales to save the whales from getting stranded?
- Why do scientists think the Navy's powerful sonar harms whales?
- Could the Navy just stop using sonar? Why or why not?
- What do you think should be the first step in working out a compromise between the whales' safety and the Navy's need to use sonar?

RESOURCES

The Wild Whale Watch (A Magic School Bus Chapter Book) by Eva Moore (Scholastic, 2000). Take a wild trip on the Magic School Bus to learn much more about all kinds of whales.

➤ www.nrdc.org/wildlife/marine/sonar.asp Learn more about potential impacts of military sonar on whales at the Web site of the Natural Resources Defense Council.

➤ news.nationalgeographic.com/news/2004/03/0331_040331_whalesincrisis.html National Geographic News reports on the latest developments regarding this issue.

ACTIVITY IDEAS

What's New?

New information and decisions regarding this issue are regularly reported. Find out the latest news by checking the Web sites in the Resources section. Discuss what you learn and ask students to consider how any new developments might affect Polly and her pod. Then have students create "Part 3" of this adventure in comic strip form or as a skit or story.

TIME:**45 Minutes****MATERIALS:****Internet access****Paper and pencils**

Sea Sports Safety

Snorkeling, scuba diving, and sea kayaking are fun sports and great ways to see wildlife. Of course, you have to know what you're doing to participate safely! For instance, as Boomer learned, divers have to take care not to come to the surface too quickly to avoid "the bends." Have students who are interested in one of these sports investigate what they'd need to know to try it. Start by asking them to think about outdoor activities they do now; what kinds of equipment do they use and what safety steps do they follow? Then have them make a list of questions to investigate about one of these new water sports. They could read about the sport online or in a book, or, better yet, find someone who does it regularly and interview him or her to find out the answers to their questions.

TIME:**45 Minutes****MATERIALS:****Library/Internet access
to research sea sports****Paper and pencils**

Pollution Pros and Cons

Discuss the word "pollution." What words and images does it evoke in students' minds? Chemicals in the air and water are one kind of pollution. But noise can also be pollution! Noise pollution can harm wildlife and also decrease quality of life for humans. Ask students to consider what kinds of noise pollution, in addition to powerful sonar, might cause problems. For what kinds of animals, and in what ways? Explain that light can also be a form of pollution, such as when city lights obscure stars and confuse migrating birds. Have students make a list of the pros and cons of continuing to produce these kinds of pollution, and see if you can strategize some ways to reduce the harm they cause.

TIME:**30 Minutes****MATERIALS:****Paper and pencils**

Taking Sides on Sonar

The Navy's use of powerful sonar is a complex issue, and people's opinions on it are influenced by their perspective. Engage students in a debate about the issue that takes into account these multiple perspectives. Have half the group research the conservationists' side of the issue and the other half research the Navy's side. Then each side can present their case to the other and answer questions. Or you could hold a mock trial in which the whales bring a suit against the Navy and the Navy must defend its actions. Discuss the factors that influence each side's presentation and the importance of using reliable information to make decisions. Discuss how some issues can be difficult to reconcile, and ask students to brainstorm ideas about how the two sides might actually go about working out a compromise in this situation.

TIME:**60 Minutes****MATERIALS:****Library/Internet access
to research the issue****Paper and pencils**



Borneo's Amazing Monkeys

pages 32-37

Learning Links:

Meet the proboscis monkey. It's an odd-looking creature from a faraway place, and it has some unusual habits. Not surprisingly, it piqued the curiosity of this story's author and photographer—and will surely do the same for young readers!

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- When was the last time you saw something in nature that you'd never seen before?
- What was it (or what did it look like)?
- What did you do to learn more about it?

Comprehension Check:

- How did the author of this story become curious about proboscis monkeys?
- What did he do to learn more about them?
- Where do proboscis monkeys live? Describe their habitat.
- What makes proboscis monkeys different from other kinds of monkeys?
- What do these monkeys eat?
- Why do proboscis monkeys have big bellies?
- How did they get their name?

- What job do the male monkeys do?
- What job do the females do?
- What are some dangers that proboscis monkeys face?

Critical and Creative Thinking Connections:

- Look at the young proboscis monkey on the cover and read what it says in "About the Covers" on [page 2](#). Then compare this monkey with the adult monkeys you see in the story. How is it the same? How is it different?
- Why do you think proboscis monkeys live in big troops? Why not just live in smaller family groups or alone?
- This story says proboscis monkeys are "the cows of the monkey world." What does this mean? Do you think it's a good comparison?

RESOURCES

Monkeys of Asia and Africa by Patricia A. Fink Martin (Children's Press, 2000). Read more about proboscis monkeys and their relatives in other parts of Asia and Africa.

➤ www.proboscismonkey.org Check out the Web site of the Proboscis Monkey Project to learn more about these unusual monkeys.

➤ magma.nationalgeographic.com/ngm/0208/feature7 Read more about this story's author, Tim Laman, and his adventures in Borneo in a story from National Geographic.

ACTIVITY IDEAS

Pictures and Words

The photos on [page 36](#) tell a dramatic story. Engage students in an investigation of how pictures and words work together to tell stories. Using the [Pictures and Words student page](#), have them first do the activity in Part 1. Divide them into groups of three and have each student write a sentence. Then have them exchange papers within their group and draw a picture to illustrate the sentence. Now have them fold the paper on the line and exchange it again to write a final sentence based on just the picture. Use this demonstration of the value of *both* words and pictures to lead into group discussion or individual writing about the questions in Part 2. Encourage students to consider how much they can figure out from photos alone, what the words add, and how the pictures and words work together to make the story more real and exciting.

TIME:

30 Minutes

MATERIALS:

[Pictures and Words student page](#)

[Photos on page 36 of Ranger Rick](#)

Normal or Not?

Ask students, "Do you think proboscis monkeys look funny? Why?" In small group discussions, challenge students to extend their thinking about the difference between "normal" and "funny-looking." Who decides what's normal and what's not? Do proboscis monkeys think they look funny? Do they think we look funny? Why do we think of certain kinds of animals—and even certain people—as better-looking than others? Does this affect how we treat them? Is this fair? Encourage groups to explore these and related questions and then to share some of their conclusions with the larger group.

TIME:

30 Minutes

MATERIALS:

[Board or large sheet of paper to write questions](#)

Whose View?

Use this story as part of a lesson on point of view in writing. The author and photographer of this story wrote it in first person, from his own point of view (using I). Other stories in this issue of *Ranger Rick* are written in third person, about something or somebody else (using he, she, it, or they). Explore these two styles by having students write about a day in the life of a proboscis monkey. Have them choose whether to be a mom, dad, or baby (or assign roles) and then tell the story of a day's adventures in first person. Then have them tell the same story in third person. Afterward, discuss the process. Which point of view was easier? More fun? More interesting? Why?

TIME:

30 Minutes

MATERIALS:

[Paper and pencils](#)

Borneo Bound

Investigate Borneo. What country is it in? What countries and oceans are near it? Is it above or below the equator? What's the climate and landscape like there? What other animals, beside proboscis monkeys, call it home? How many people live there, and how are their lives different from ours? Use the results of your investigation to create a skit or a travel journal about an imaginary visit to Borneo and what you saw and did there.

TIME:

60 Minutes

MATERIALS:

[Library/Internet access to research Borneo](#)



Student Page

PICTURES AND WORDS

Part 1

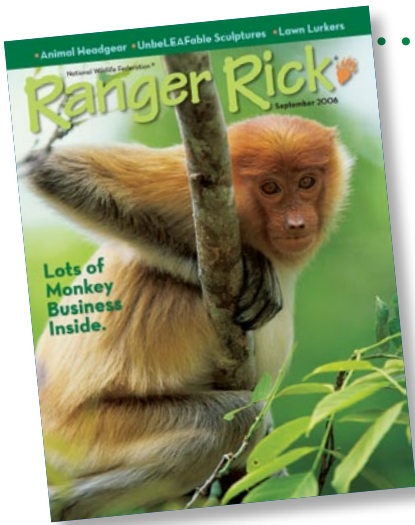
1. Write a sentence on the line below. Make sure it has lots of action! (It can be silly.)
2. Now give it to another person and ask him or her to draw a picture in the box that shows what your sentence describes.
3. Fold the paper on the dotted line so the sentence is hidden but the picture shows. Ask another person to write a sentence about what's happening in the picture.
4. Compare the first sentence with the second one. How much did it change?



Part 2

As you can see, *both* words and pictures tell stories—but not always the same one! On the back of this page, write your answers to these questions about pictures and words:

- Look at the pictures on [page 36](#) in *Ranger Rick*. Just from what you see in the photos, what can you say about what's happening?
- Now read the words that describe this scene. What new information do they tell you?
- Which do you think is more important: the pictures or the words?
- How do pictures and words work together to tell a story?



National Wildlife Federation
Ranger Rick

Family Fun!

*Dear Parent or Guardian,
Your child is reading Ranger Rick magazine in class. Each month, amazing photos, feature articles, and activities bring nature, wildlife, and conservation to life. Extend the learning and fun at home with these engaging family activities. Enjoy!*

DO YOU KNOW WHO?

Can you guess the identity of the mystery canine in the “Who am I?” contest on [pages 2-3](#)? Send in your answer to *Ranger Rick*!

DINOS FOR DINNER

Read “Trouble at the Dinosaur Cafe” on [pages 14-15](#). Then imagine the dinosaurs are coming for a meal at your house! Would you invite plant-eaters or meat-eaters? What would you feed them? How much do you think they’d eat? Just for fun, plan and enjoy a dinosaur-themed dinner.

TOPIARY TIME

How did you like those imaginative animals in “Topiary” on [pages 16-19](#)? If you’re feeling artistic, try making your own topiary craft using the instructions at www.nwf.org/rangerrick.

MORE TOPIARY TIME

If you’re feeling imaginative, go on a walk around your neighborhood or a nearby park and look at the shapes of the bushes and trees there. Do any of them remind you of animals or other objects? Play “I Spy” and try to guess each other’s finds.

LOW AIR ALERT

In “The Buzz” on [page 38](#), you read about a girl on a mission. Savannah is working hard to get people to conserve gas by keeping their car tires inflated. Help the cause (and save money, too) by checking the tires on your own family’s car(s). If they’re low, pump ‘em up! While you’re at it, offer to check the tires of neighbors’ and friends’ cars, too.

For more interactive family fun, be sure to visit www.nwf.org/kids.

