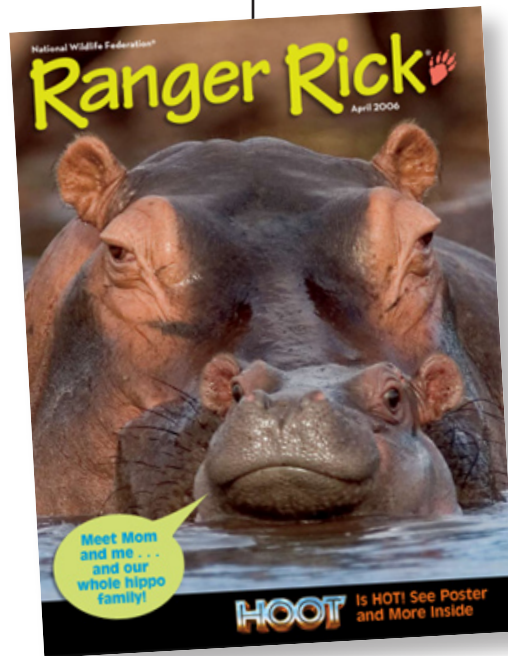


APRIL 2006

National Wildlife Federation®  
**Ranger Rick**®

EDUCATOR'S  
**GUIDE**



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





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## Introduction

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### 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](http://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](http://www.nwf.org/rangerrick)

# Neat Feet

pages 4-10



## Learning Links:

**Feet come in an amazing variety of sizes, shapes, colors, and coverings. Animals' feet are tools that help them get food, move around, and reproduce in the habitats where they live—and they perfectly illustrate the value of a physical adaptation.**

## DISCUSSION QUESTIONS & WRITING PROMPTS

### Pre-Reading Questions:

- How do you use your feet?
- How would your life change if you had a different kind of feet or no feet at all?

### Comprehension Check:

- The size and shape of an animal's foot helps it do many important jobs. Describe a foot that's made for each of these tasks:
  - hunting foot for bringing down prey.
  - digging foot for shoveling out tunnels.
  - flying foot for gliding through the air.
  - gripping foot for climbing super-steep mountains.
  - fancy foot for attracting a mate.

- Compare and contrast your own feet with the animal feet in this story. Which ones are most similar to yours, and which are most unlike yours? In what way(s)?

### Critical and Creative Thinking Connections:

- Think of three animals that don't appear in this story. Describe their feet and explain how they use them.
- What are some animals that don't have feet? How do they get by without them?
- What if some of the animals in this story suddenly had to live in a different place or eat different food? How might their feet need to change to help them survive?

## RESOURCES

***The Foot Book*** by Dr. Seuss (Random House, 1968). Revisit this classic rhyming romp for a fun-to-read celebration of all kinds of feet. After you read it, challenge students to write their own rhymes using the information they learned in "Neat Feet."

***Tracks in the Wild*** by Betsy Bowen (Houghton Mifflin, 1998). Feet leave tracks, and tracks tell stories about the animals all around us.

[www.dnr.state.wi.us/org/caer/ce/eeek/cool/trackQuizLYLOne.htm](http://www.dnr.state.wi.us/org/caer/ce/eeek/cool/trackQuizLYLOne.htm) An online animal tracks quiz—see if you can match the footprints with the animals that made them.

[berkeley.edu/news/media/releases/2002/08/26\\_gecko.html](http://berkeley.edu/news/media/releases/2002/08/26_gecko.html) Snowshoes and swim flippers aren't the only inventions inspired by animal feet. Check out this new gecko-foot glue!

## ACTIVITY IDEAS

### Whose Feet Are These?

Line up two index cards and draw an animal so that its body is on one card and its feet on the other. Make a whole set of different animal cards, shuffle them, and have students match bodies with feet. Ask them to explain why the feet they chose are the right ones and how the animal uses them. Alternatively, students could make their own sets of cards or create books with top and bottom pages that turn independently. Suggest that they use the cards or book to invent a game to play with their families or with younger students.

#### TIME:

**30 Minutes**

#### MATERIALS:

**Index cards**  
**Art supplies**

### Foot Gear

Collect an assortment of foot gear—or pictures of foot gear—such as snowshoes, swim flippers, soccer cleats, running shoes, winter boots, crampons (spikes for climbing on ice), etc. Discuss how these items change our feet so that it's easier to do certain things. Ask students to match each item with one or more animals whose feet work similarly. For example, the camel's wide feet act like snowshoes to keep it from sinking into the desert sand. Snowshoe hares, lynx, and ruffed grouse also have large feet that help them stay on top of deep snow. After students complete the matching, challenge them to design a brand new kind of fun or useful foot gear inspired by an animal example.

#### TIME:

**30 Minutes**

#### MATERIALS:

**Foot gear (see suggestions in activity)**

### Feet in the Wild

Take a walk outdoors (or visit a local zoo) and investigate animal feet for yourselves. How many different kinds of animals can you spot? What kinds of feet do they have? How are they using them while you're watching? How else might they use them at other times? Use the [Find the Feet student page](#) to help focus students' investigations. Then discuss how the feet you saw compare with the ones you read about in the *Ranger Rick* story.

#### TIME:

**30-60 Minutes**

#### MATERIALS:

**Find the Feet**  
**student page**  
**Pencils**

### Talented Toes

After reading about all the ways animals use their feet, why not see how many different ways we can use ours? Set up a series of stations where students can try to accomplish a variety of tasks with their feet, such as:

- Pick up a pebble or dried bean with your toes and put it in a dish.
- Put a pencil between your toes and try to write your name.
- Walk up and down an inclined board.
- Climb up a pole or rope using your feet and hands to grip it.
- Run or hop through an obstacle course.
- Jump as far or as high as you can.
- Kick a ball through an opening between two cones.
- Dig a hole in the sand using only your feet.

Afterward, discuss what human feet are best suited to do, and how they compare with the other animals' feet highlighted in this story.

#### TIME:

**45-60 Minutes**

#### MATERIALS:

**Objects for stations, such as:**  
**Dried beans**  
**Shallow dishes**  
**Pencils & paper**  
**Inclined board**  
**Pole or rope**  
**Ball**  
**Cones**  
**Sandbox**

How many animal feet can you find? As you see each of the following things, check it off on your list and write or draw what you saw.

Look for an animal with:

---- No feet

---- Two feet

---- Four feet

---- Six feet  
or more


Look for an animal using its feet to:

---- Run

---- Swim

---- Hold on to  
something

---- Climb

---- Get Food

-----  
(your own idea here)


# Bundles of Babies

pages 14-17

2



## Learning Links:

**Orphaned baby bats get special care at the Tolga Bat Hospital in Australia. This brief account would lead nicely into an investigation of 1) how mother bats take care of their babies, or 2) how people assist many kinds of wildlife through rehabilitation programs.**

## DISCUSSION QUESTIONS & WRITING PROMPTS

### Pre-Reading Questions:

- Look at the picture on pages 14-15. What seems to be happening? What do you predict this story will be about?
- Have you ever found a wild animal that needed help? What did you do?

### Comprehension Check:

- What kind of bats is this story about?
- What country do they live in?
- During a certain time of the year, what problem do the bats face?
- How do the people at the Tolga Bat Hospital take care of the orphaned baby bats?

- How do they take care of the sick adult bats?
- Describe how the bats are returned to the wild when they're ready.

### Critical and Creative Thinking Connections:

- Why does this story end by saying, "We hope we don't see you again!"?
- What do you think would happen if people didn't take care of these bats?
- Why is it important that places like the Tolga Bat Hospital exist? (Do you think just anyone should try to care for sick or orphaned wild animals?)
- Do you think humans have a responsibility to take care of other animals in situations like this? Why or why not?

## RESOURCES

**Amazing Bats** by Seymour Simon (Seastar, 2005). A clear and engaging book of bat facts illustrated with photographs of many bat species.

**Outside and Inside Bats** by Sandra Markle (Walker Books, 2004). Describes the physical characteristics and behavior of bats in a fun, photo-filled format.

**ER Vets: Life in an Animal Emergency Room** by Donna Jackson (Houghton Mifflin, 2005). A behind-the-scenes look at how veterinarians handle animal emergencies. Just the thing for aspiring vets!

[www.tolgabathospital.org](http://www.tolgabathospital.org) See pictures and learn more about the Tolga Bat Hospital and its patients here.

## ACTIVITY IDEAS

### Hand-Wings

Bats belong to the order *Chiroptera*, a name that means “hand-wing.” Direct students’ attention to the picture of the flying bats on pages 16-17. Can they see where the name comes from? A bat’s wing is a thin membrane stretched between long finger bones. Its thumb, a small claw at the top of the wing, is used for climbing and grasping. Have students stretch out their own arms, thumbs pointing upward and fingers extended as the bats are doing in the photo. Ask them to imagine what it would be like to have hand-wings as bats do. Students who find this interesting might like to investigate how bats fly, and how they’re similar to and different from other fliers (birds, insects). For more information about the very different wing structure of birds compared with bats, see [science.howstuffworks.com/bat1.htm](http://science.howstuffworks.com/bat1.htm).

#### TIME:

15 Minutes

#### MATERIALS:

Internet access  
(optional)

### Is Your Mama a Mammal?

Bats are mammals. In fact, one out of every four mammal species is a bat! Although they’re the only mammals that fly, bats have many things in common with every other mammal. Divide students into small groups and provide each group with a selection of mammal names or photos (bat, dog, cat, human, monkey, elephant, rabbit, dolphin, etc.). Have groups discuss and agree on a list of characteristics all the animals share. Can they identify each of the following? Mammals: a) have hair or fur, b) have four limbs, c) breathe air, d) are warm-blooded, and e) drink milk from their mother as babies. (Students may find it helpful to consider some non-mammals for contrast.) Finally, ask students to think about the “Bundles of Babies” story in light of what they now know about mammals. Why does being orphaned cause big problems for baby bats? (*They depend on their moms for milk and warmth and can’t survive on their own.*)

#### TIME:

30 Minutes

#### MATERIALS:

Paper and pencils

### Going Batty

Find out what kinds of bats live near you by checking in a field guide or at [www.enature.com](http://www.enature.com). How many species live in your area? What do they eat? Do they face any threats like those of the Australian bats? After you’ve done your research, go bat-watching! Head outdoors one evening at dusk and see if you can spot bats flying overhead. What are they doing? How does their flight compare with the flight of birds? Can you tell when they catch an insect?

#### TIME:

45 Minutes

#### MATERIALS:

Library/Internet  
access  
Outdoor access

### Rehabilitation Station

Wildlife rehabilitators are people who take care of injured and orphaned birds of prey and other wild animals. Contact a local nature center to find out if any are at work in your area. If so, invite one of them to speak to your group or, if possible, arrange to visit the facility. This could provide students with a fascinating glimpse of wildlife, as well as an opportunity to find out about a volunteer opportunity or career they may want to consider. Encourage students to make a list of questions for the speaker and summarize what they learned afterward.

#### TIME:

60 Minutes +

#### PREPARATION:

Contact a wildlife  
rehabilitator to  
schedule a  
presentation



# The Making of Hoot

pages 21-24  
plus poster pull-out

3



## Learning Links:

*In Hoot, young people stand up and make a difference for wildlife. A glimpse behind the scenes of the movie, an interview with a burrowing owl, and plenty of ideas for watching and helping wildlife where you live will have you and your students fully prepared to enjoy this entertaining tale.*

## DISCUSSION QUESTIONS & WRITING PROMPTS

### Pre-Reading Questions:

- Can kids make a difference for wildlife? What do you think?
- In your opinion, is it ever OK to break a rule (or even a law) to stand up for something you believe in? Explain your answer.

### Comprehension Check:

- What animal does the action in *Hoot* revolve around?
- What is the problem that the characters in the story try to resolve?
- Behind the scenes of the movie *Hoot*, how did the owls learn their role?
- Why are burrowing owls in trouble? What can people do to help them?

### Critical and Creative Thinking Connections:

- Why did the makers of this movie need special permission to use real burrowing owls in the film? Do you think these kinds of regulations are necessary?
- On page 23, you read what the three main actors had to say about making this movie. Based on their comments, which one would you say is most like you? Why?
- If you could spend a day on the set of *Hoot*, what scenes would you want to see? What questions would you ask the actors and crew?
- Are there any conflicts in your community between people and wildlife? Would you be willing to take a stand on any of these issues?

## RESOURCES

**Hoot** by Carl Hiaasen (Knopf, 2004). Read the book that started it all! This could make a fun read-aloud—just preview it first to be sure it's right for your students.

**Owls** by Gail Gibbons (Holiday House, 2005). Here's an overview of North America's owls and their fascinating habits and characteristics.

[www.walden.com/hoot](http://www.walden.com/hoot) Learn more about *Hoot* at the Web site of Walden Media. Includes teaching tools and other useful information.

[birds.cornell.edu/programs/AllAboutBirds/BirdGuide/Burrowing\\_Owl\\_dtl.html](http://birds.cornell.edu/programs/AllAboutBirds/BirdGuide/Burrowing_Owl_dtl.html) Get your burrowing owl facts from the Cornell Lab of Ornithology.

[nwf.org/nationalwildlifeweek](http://nwf.org/nationalwildlifeweek) Find lots of fun things to do to celebrate National Wildlife Week (April 22-30)—including tips for a burrowing owl Wildlife Watch if you live in owl territory.

## ACTIVITY IDEAS

### Hoot and Holler

Hey, how about reading *Hoot*? Or seeing the movie? Afterward, engage students in a discussion about the story. How did Roy and his friends get involved in the situation with the burrowing owls? Although they were “just kids,” why did they think they could make a difference? What contributed to their success? How does this story make you feel? Angry, hopeful, overwhelmed, inspired to do something? Brainstorm possible actions students could take to follow up on these feelings. *Ranger Rick* would love to hear about your *Hoot* discussion! Tell us what you and your students thought by sending a letter to Ranger Rick; 11100 Wildlife Center Dr.; Reston, VA 20190 or e-mailing [rick@nwf.org](mailto:rick@nwf.org).

#### TIME:

Variable

#### MATERIALS:

*Hoot* book or a movie theater visit (*Hoot* opens April 21, 2006)

### Owl Post

After students read Ranger Rick's interview with Carl, one of the movie-star burrowing owls, have them follow up with some writing. They could:

- Write a “fan mail” letter to Carl asking him more questions about burrowing owls. Then look up the answers and compose his reply.
- Write a journal entry from Carl's point of view about one of his days on the set and what he's looking forward to doing when the filming is over.
- Write a postcard to Carl from some of his western relatives about what they thought when they saw him in the movie. (A drive-in, perhaps?) Were they proud? Worried he'd be too famous to talk to them anymore? How are their lives different from his? What do they hope will happen as a result of the film?

#### TIME:

30 minutes

#### MATERIALS:

Paper and pencils  
Dear Carl student page (optional)

### Prowlin' for Owls

Burrowing owls live in Florida and throughout much of western North America. If you live in one of these places, see if you can spot one! At [nwf.org/nationalwildlifeweek/watch.cfm](http://nwf.org/nationalwildlifeweek/watch.cfm) you can get instructions for planning an owl watch. Even if burrowing owls don't live nearby, you can still find lots of interesting wildlife. Take a night hike and listen for other kinds of owls, do the wildlife scavenger hunt on the poster insert, or join the official Wildlife Watch and see how many of the featured animals you can find.

#### TIME:

1-2 hours

#### MATERIALS:

Binoculars  
Field guides

### Hands-On Habitat

You've learned about some threats facing burrowing owls and some things people are doing to help them. Now come up with a project you could do to help wildlife where you live! Have students brainstorm potential projects (see the list on the poster insert for ideas) and then agree on a course of action. As much as possible, let them take the initiative to plan the procedure, procure materials and equipment, and carry out the work, offering guidance to keep the experience positive. Then give them the credit they deserve for a job well done! For more ideas on how to get involved in environmental service projects in your community, and if you'd like to register your project with Youth Service America, visit [nwf.org/nationalwildlifeweek/rebuild.cfm](http://nwf.org/nationalwildlifeweek/rebuild.cfm).

#### TIME:

Variable

#### MATERIALS:

As needed depending on the project you choose

Most movie stars get lots of fan mail. Do you think the burrowing owls in *Hoot* have overflowing mailboxes? After you read “Ranger Rick Meets a Star” on the poster insert, write a postcard to Carl below. Ask him some questions you have about burrowing owls. Then imagine his response and write it on the other postcard.

A rectangular postcard template with a green border. A vertical line on the left side separates the address area from the message area. In the top right corner, there is a dotted rectangular box for a stamp. Below the stamp box, there are three horizontal lines for writing the message.

A rectangular postcard template with a green border, identical in layout to the one above. It features a vertical line on the left, a dotted stamp box in the top right, and three horizontal lines for writing the response.

## Me and My Mama

pages 26-33



### Learning Links:

**Hippos are hugely impressive, and with help from young Harry, you'll get all the facts . . . plus some attitude to keep it real!**

## DISCUSSION QUESTIONS & WRITING PROMPTS

### Pre-Reading Questions:

- When you think *hippopotamus*, what comes to mind?
- Which of the following would you guess does not describe a hippo: a) super sprinter, b) sleepy mud-wallower, c) fierce fighter, d) salad muncher? (Answer: they all do!)

### Comprehension Check:

- Where do hippos live?
- Hippos are big animals! Explain just how big a full-grown hippo can be.
- Do hippos move fast or slow?
- Are hippos solitary or social?
- What are three ways hippos protect themselves from the strong African sun?
- How are hippos adapted to life in the water?

- Why do hippos fight?
- What do hippos eat?

### Critical and Creative Thinking Connections:

- Harry Hippo obviously thinks a lot of his mama. Find three things he says that show his admiration.
- In what ways does Harry depend on Mama?
- How do you depend on your mom and the other adults in your life? What have you learned from them? What do you still need to learn?
- According to the author of this story, hippos are important to the other animals that share their habitat. Explain why that is. Predict what would happen if hippos disappeared.
- What fact from this story did you find most interesting or surprising?

## RESOURCES

**Hippos** by Sally M. Walker (Carolrhoda Books, Inc., 1998). Still have questions about hippos? Find the answers here in this thorough and well-researched book.

[www.nationalgeographic.com/kids/creature\\_feature/0009/hippos.html](http://www.nationalgeographic.com/kids/creature_feature/0009/hippos.html) Get your hippo facts at National Geographic's Creature Feature.

[www.thebigzoo.com/Animals/Hippopotamus.asp](http://www.thebigzoo.com/Animals/Hippopotamus.asp) Watch and listen to some hippo clips at Zoobooks' "Big Zoo."

[www.npr.org/templates/story/story.php?storyId=4754996](http://www.npr.org/templates/story/story.php?storyId=4754996) Owen, a baby hippopotamus orphaned in the December 2004 tsunami, found an unlikely new "mom" in Mzee, an ancient giant tortoise. Read the whole story here!

## ACTIVITY IDEAS

**Hippo Who?**

*Hippopotamus* is quite an amusing word to say. Just for fun, ask students to make up a poem or song using it—or make one up as a group. By the way, any guesses about where the word comes from? (*It's from two Greek words, hippos and potamos, and means "river horse."*)

**TIME:****15 Minutes****MATERIALS:****Paper and pencils****Hippopotamalogy**

The author of this story uses a number of comparisons to help readers understand just how large and impressive hippos are. *A hippo weighs as much as two cars. A 7-year-old could stand up inside a hippo's mouth. A hippo's canines can be as long as your arm.* Have students make a list of these analogies and then draw pictures to illustrate them. Later, have them make up their own analogies to describe something they learned about hippos.

**TIME:****30 minutes****MATERIALS:****Paper and pencils****Art supplies****Math, Hippo Style**

Challenge students to put numbers to the comparisons in this story.

- Just how fast can a human sprinter run?
- How much does the average car weigh? Multiply by two and compare it with the average weight of a hippo.
- How many students would it take to equal the weight of one hippo?
- How tall is the average 7-year-old? Once you determine approximately how wide a hippo's mouth can open, look around the room and estimate what other objects would fit inside. Then take measurements to confirm.

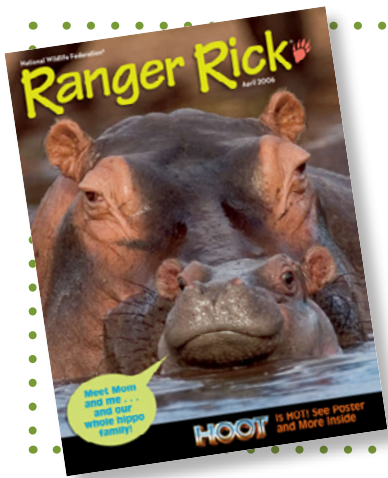
**TIME:****30 Minutes****MATERIALS:****Library/Internet access****Paper and pencils****Ruler****Who's Your Mama?**

Ask students to describe the perspective from which "Me and My Mama" is written. Who's telling this story? (*Harry, a young hippo.*) What do you learn about his "personality" as you read? (*He's a little sassy, but he's obviously proud of his mom!*) Ask students to think of some things they admire about *their* moms. Have them write their own "Me and My Mama" story describing her special traits and talents. Mother's Day is coming up next month, and a neatly written final draft, illustrated with drawings or photos, would make a lovely gift!

**TIME:****60 Minutes****MATERIALS:****Paper and pencils****Hippos and Habitat**

Tape a large sheet of paper to a wall and set students free to turn it into a hippo habitat. Encourage them to use the information in the story to plan their design and the photos to inspire their art. The mural should show the landscape, the places where hippos spend their time, how they get from one place to another, and some of the other animals that share their habitat. Have students make some cardboard cutout hippos and add a loop of tape to the back of each one so that they can move the hippos around within the habitat. When the mural is complete, discuss the role that hippos play in keeping their habitat healthy.

**TIME:****60 Minutes****MATERIALS:****Big sheet of paper****Art supplies**



# 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!*

## SAY HELLO TO HOOT

Read about the making of the movie *Hoot* on [pages 21-24](#). Then take a family excursion to see the movie, or curl up and read the book aloud together. Pollute? Uproot? No . . . Hoot!

## ONE WILD WEEK

It's a week to go wild! [National Wildlife Week](#) is [April 22-30](#). Want some great ideas for how to celebrate? Plan a family project to make your community a better place. Read some great books. Get out and watch wildlife where you live. You'll find everything you need at [nwf.org/nationalwildlifeweek](http://nwf.org/nationalwildlifeweek).

## WEATHER WATCHING

Spring is a perfect time for playing in the wind and watching the clouds. Read the tips for weather watching on [page 36](#). Then head outside with some bubbles and your imagination to give it a try.

## INCREDIBLE JOURNEYS

After you read about Emily the cat's adventure in "The Buzz" ([page 37](#)), write a story about an adventure one of your pets has had. Don't have pets? Or your pets have all led quiet, peaceful lives? That's OK—make up a wild tale about the grand adventure they just might have someday!

## HIPPO HOORAY

Harry Hippo knows his mama's the best. Can your mom open her mouth so wide a kid could stand up inside? Probably not, but we'd bet she's pretty special in her own way. Tell her why, and give her a big hip hippo hooray! ("Me and My Mama," [pages 26-33](#))

*For more interactive family fun, be sure to visit [www.nwf.org/kids](http://www.nwf.org/kids)*

# NATIONAL EDUCATION STANDARDS

NATIONAL SCIENCE EDUCATION STANDARDS

## Science as Inquiry

- K-8 Abilities necessary to do scientific inquiry
- K-8 Understandings about scientific inquiry

## Life Science

- K-4 Characteristics of organisms
- K-4 Life cycles of organisms
- K-4 Organisms and environments
- 5-8 Structure and function in living systems
- 5-8 Reproduction and heredity
- 5-8 Regulation and behavior
- 5-8 Populations and ecosystems
- 5-8 Diversity and adaptations of organisms

## Earth & Space Science

- K-4 Properties of Earth materials
- K-4 Objects in the sky
- K-4 Changes in earth and sky
- 5-8 Structure of the Earth system
- 5-8 Earth's history
- 5-8 Earth in the solar system

## Science & Technology

- K-4 Abilities to distinguish between natural and human objects
- K-8 Abilities of technological design
- K-8 Understanding about science and technology

## Science in Personal and Social Perspectives

- K-8 Personal health
- K-4 Characteristics and changes in populations
- K-4 Types of resources
- K-4 Changes in environments
- K-4 Science and technology in local challenges
- 5-8 Populations, resources, and environments
- 5-8 Natural Hazards
- 5-8 Risks and benefits
- 5-8 Science and technology in society

## History and Nature of Science

- K-8 Science as a human endeavor
- 5-8 Nature of science
- 5-8 History of science

ENGLISH LANGUAGE ARTS

- 1 Reading for perspective
- 2 Understanding the human experience
- 3 Evaluation strategies
- 4 Communications skills
- 5 Communications strategies
- 6 Applying knowledge
- 7 Evaluating data
- 8 Developing research skills
- 9 Understanding and respecting diversity
- 10 Developing English competency
- 11 Participating in literary communities
- 12 Using language for oneself

	1 Neat Feet	2 Baby Bats	3 Hoot	4 Hippos
K-8 Abilities necessary to do scientific inquiry	■	■	■	■
K-8 Understandings about scientific inquiry	■	■	■	■
K-4 Characteristics of organisms	■	■	■	■
K-4 Life cycles of organisms	■	■	■	■
K-4 Organisms and environments	■	■	■	■
5-8 Structure and function in living systems	■	■	■	■
5-8 Reproduction and heredity	■	■	■	■
5-8 Regulation and behavior	■	■	■	■
5-8 Populations and ecosystems	■	■	■	■
5-8 Diversity and adaptations of organisms	■	■	■	■
K-4 Properties of Earth materials	■	■	■	■
K-4 Objects in the sky	■	■	■	■
K-4 Changes in earth and sky	■	■	■	■
5-8 Structure of the Earth system	■	■	■	■
5-8 Earth's history	■	■	■	■
5-8 Earth in the solar system	■	■	■	■
K-4 Abilities to distinguish between natural and human objects	■	■	■	■
K-8 Abilities of technological design	■	■	■	■
K-8 Understanding about science and technology	■	■	■	■
K-8 Personal health	■	■	■	■
K-4 Characteristics and changes in populations	■	■	■	■
K-4 Types of resources	■	■	■	■
K-4 Changes in environments	■	■	■	■
K-4 Science and technology in local challenges	■	■	■	■
5-8 Populations, resources, and environments	■	■	■	■
5-8 Natural Hazards	■	■	■	■
5-8 Risks and benefits	■	■	■	■
5-8 Science and technology in society	■	■	■	■
K-8 Science as a human endeavor	■	■	■	■
5-8 Nature of science	■	■	■	■
5-8 History of science	■	■	■	■
1 Reading for perspective	■	■	■	■
2 Understanding the human experience	■	■	■	■
3 Evaluation strategies	■	■	■	■
4 Communications skills	■	■	■	■
5 Communications strategies	■	■	■	■
6 Applying knowledge	■	■	■	■
7 Evaluating data	■	■	■	■
8 Developing research skills	■	■	■	■
9 Understanding and respecting diversity	■	■	■	■
10 Developing English competency	■	■	■	■
11 Participating in literary communities	■	■	■	■
12 Using language for oneself	■	■	■	■