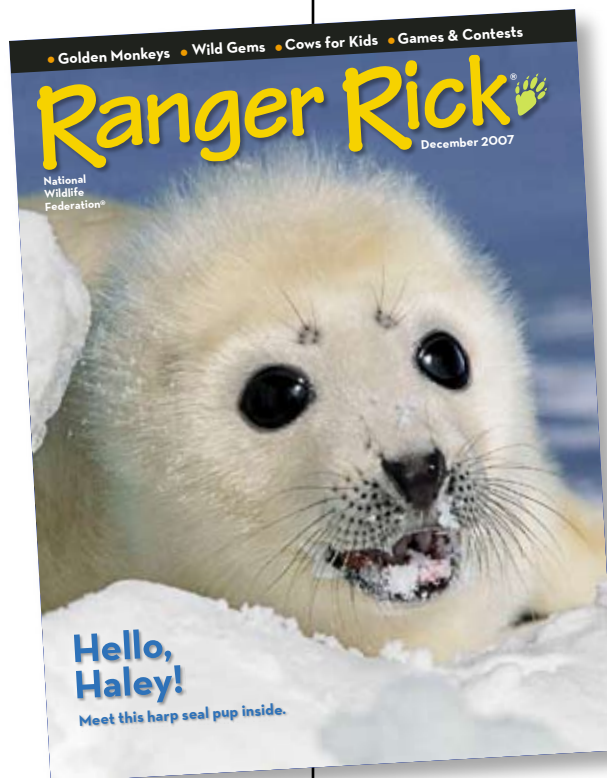


DECEMBER 2007

Ranger Rick®



EDUCATOR'S GUIDE



This guide is designed to complement the December 2007 issue of National Wildlife Federation's *Ranger Rick*® magazine.





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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/backyard. 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

At Home on the Ice

pages 6 - 10



Learning Links:

Harp seals spend their lives on sea ice and in the chilly northern seas. Cold-weather adaptations, such as thick fur, blubber, and rich milk (to help pups gain weight quickly), allow the seals to survive in this extreme habitat.

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- Look at the photo on pages 6-7. Would you want to take a nap here?
- Why do you think this seal is comfortable napping on the ice?

Comprehension Check:

- What kind of animal is this story about?
- What's the word for a baby seal?
- Describe the place where Haley lives.
- What are two things that help Haley stay warm?
- In what time of year was Haley born?
- How fast does Haley gain weight? Why is this important?

- How long does Haley spend with her mom?
- Why do seal pups need to grow up so fast?

Critical and Creative Thinking Connections:

- Humans have very long childhoods compared to those of harp seals. Would you rather grow up faster or slower than you are growing now? Why?
- Why do you think harp seals migrate rather than stay in one place all year?
- Why are scientists worried that global warming might endanger harp seals?
- What are some other animals that depend on sea ice to survive?

RESOURCES

Seals by Wayne Lynch and John McGee (Northword, 2002). Get lots more facts and photos of harp seals and their relatives in this book, with sections on habitat, diet, behavior, and raising young.

- www.globio.org/rr/seals Visit Globio for more kid-friendly information about seals.
- www.climateclassroom.org Global warming is affecting harp seals' Arctic home. Find tips and resources for talking about global warming with your students at National Wildlife Federation's Climate Classroom Web site.

ACTIVITY IDEAS

Extreme Habitat

Harp seals live in an extreme environment of cold temperatures, ever-changing ice, and chilly seawater. Engage students in a discussion about how the seals can survive there. What are their adaptations for keeping warm? For finding food? Then ask students to think of some other extreme environments. (For example, deserts, high mountains, deep sea.) What are the challenges of living in each of these environments? What adaptations do the animals there have? Divide students into small groups and assign each group a different environment to research. Then have each group present what they have discovered to the rest of the class.

TIME:**60 Minutes or more****MATERIALS:****Library/Internet access**

Harping on Math

Students should recall from the story that harp seal pups get fat—really fast! Use the [Seal Graph student page](#) to take a closer look. First ask students to review the text to find Haley's weight at birth, the rate at which she gains weight, and the number of days she spends with her mother. Then have them make a line graph showing her weight each day from birth until her mother leaves. When their graphs are complete, ask them to predict what will happen to her weight (and how that would be reflected in the graph) in the days following her mother's departure. As an extension, students could also research how quickly some other baby mammals gain weight and plot this information on the graph for comparison.

TIME:**30 Minutes****MATERIALS:****[Seal Graph student page](#)**

Science on the Ice

Scientists are worried that global warming and its effects on sea ice will spell trouble for harp seals. But exactly what kind of trouble—and how much—are still in question. Ask students to imagine that they are scientists who want to find out more about how harp seals are coping with global warming. Explain that scientists often need to write a research proposal to seek approval and funding to carry out their research. Have students create a short proposal with the following three sections: 1) What specific question do you hope to answer? 2) How will you investigate this question? 3) What equipment and personal gear will you need for your investigation? This is a difficult task, but the process is sure to get students thinking!

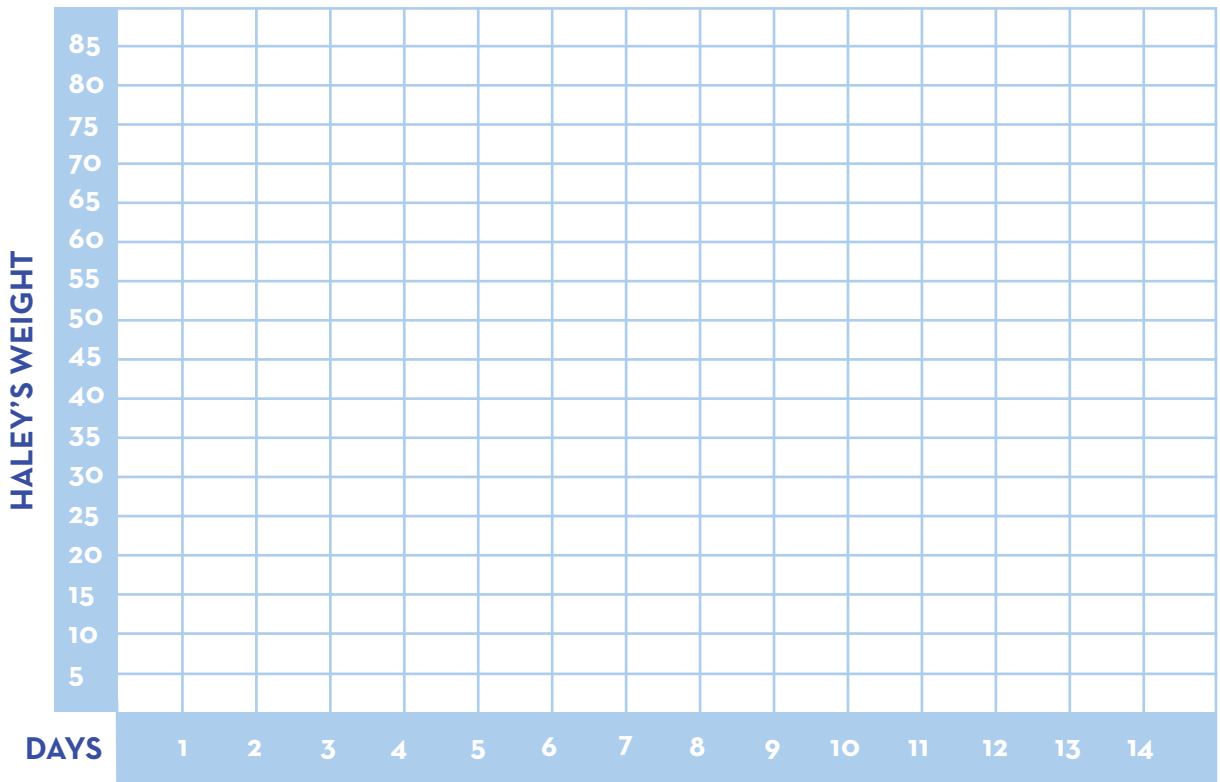
TIME:**60 Minutes****MATERIALS:****Paper and pencils**



Part ONE. After you read “At Home on the Ice,” answer the following questions about how fast the baby harp seal, Haley, grows.

1. How much does Haley weigh when she is born? _____
2. How many days does she spend with her mom? _____
3. How many pounds does she gain each day? _____

Part TWO. Use the information above to make a line graph of Haley’s weight from the time when she is born to the time her mom leaves.



Part THREE. Why do baby harp seals need to gain weight so quickly?

How Do You Spell Hope?

H-E-I-F-E-R

pages 16 - 19

2



Learning Links:

Livestock animals can change people's lives for the better in a big way. The kids in this article all benefit from the work of Heifer International. Their stories will prompt students to think about the role of animals in our lives and also about how people's circumstances differ around the world.

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- Are animals important in your life? In what ways?
- How would your life be different without any contact with or products from animals?

Comprehension Check:

- How did the arrival of cows at Ionut's orphanage make life better for him?
- What does the group called Heifer International do? Why do they do it?
- What kinds of animals does Heifer give to people?
- Name at least five things people use their Heifer animals for.
- How does Heifer help people make the most of the animals they receive?
- How would you explain the article's title?

Critical and Creative Thinking Connections:

- If you could meet one of the kids from this story, who would it be? What questions would you ask him or her?
- The lives of the kids in this story probably seem very different from yours. What are some of the differences?
- What are some things you might have in common with these kids?
- While you may not have cows, sheep, goats, pigs, or bees at your house, animals do provide a lot of things that make your life better. What are some of the benefits you get from animals?
- When you toss a pebble into a pond, waves ripple out in all directions. How is this a metaphor for what happens when someone in a community receives a gift from Heifer?

RESOURCES

- www.heifer.org Check out the Web site of Heifer International to find out more about their work, explore other stories about the people who benefit from it, and see how you and your students can get involved if you choose. Be sure to check out "Field Video" under "Our Work" to see some success stories firsthand.

ACTIVITY IDEAS**Heifer Letter**

Ask students to imagine that they could write a letter to one of the kids featured in this story. Begin with a discussion about how your students' lives differ from these kids' lives. Then ask them to think of some things they might have in common. Hand out the [Heifer Letter student page](#) and have students compose a letter with help from the prompts included there.

TIME:**30 Minutes****MATERIALS:**[Heifer Letter student page](#)**This is the Cow . . .**

A big part of the success of Heifer International is the “pass-along value” of the gifts. Families that receive animals give offspring to other members of the community, thus widening the circle of benefits. Investigate this pass-along value by creating a cumulative story with students (in the style of “This is the house that Jack built.”). For instance, you might begin your tale with “This is the cow that came to stay...” and move on to “This is the milk that came from the cow...” and “This is the baby who drank the milk...” Have fun with it! Once it's written, perform it as a skit or puppet show.

TIME:**30 Minutes****MATERIALS:****Chalk board or
chart paper****Gifts That Keep Giving**

It's the season of giving. If your students are inspired by the work of Heifer International, perhaps they would like to find a way to contribute. They could organize an event in which they raise money to purchase a gift animal—a flock of chickens, a hive of bees, or even a share of a goat, a sheep, a cow, or a water buffalo! They could make something to sell, prepare and serve a meal, or provide services such as raking leaves, shoveling snow, or walking dogs. Visit www.heifer.org for details and lots of other creative fundraising ideas (such as the “Read to Feed” program in which students collect pledges to read books).

TIME:**Variable****MATERIALS:****Internet access****Other items vary
by project**



Heifer Letter

In “How Do You Spell Hope? H-E-I-F-E-R,” you met some kids from around the world who received animals from Heifer International. In the space below, write a letter to one of the kids featured in the story.

Dear _____

I liked reading about you in *Ranger Rick* because _____

Your life is different from mine in some ways. For example, _____

I think we might have some things in common, though. For example, _____

Here is something that I think you would like to know about me. _____

I would like to know more about you. I was wondering _____

Your friend, _____

China's Golden Monkeys

pages 22 -27

3



Learning Links:

In the cold mountains of central China live some of the rarest monkeys in the world. They've toughed out life in these mountains for thousands of years. These days, however, loggers and poachers are posing even bigger threats.

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- Look through the monkey photos on pages 22-27. What's so unusual about these monkeys?
- How are they like other monkeys?

Comprehension Check:

- Where do golden monkeys live? Describe their habitat. [Note: If possible, help your students locate Sichuan Province (in central China) on a map. Most golden monkeys live in this area.]
- How are golden monkeys equipped for cold weather?
- How else do golden monkeys stay warm in their cold mountain habitat?
- What do golden monkeys eat during the summer?
- What do they eat during the winter?
- Why is it important for golden monkeys to have very sharp teeth?

- How do they protect themselves from predators such as wild cats and dogs?
- What are two ways people are making life harder for golden monkeys?
- What are people doing to try to save the golden monkey?

Critical and Creative Thinking Connections:

- What would be some other good names for the golden monkey?
- Look at the photo of the golden monkey dad and his offspring on pages 22-23. How do they look alike? How are they different? Why do you suppose the offspring are a different color?
- Why is family life so important to golden monkeys?

RESOURCES

Monkeys of Asia and Africa by Patricia A. Fink Martin (Children's Press, 2000) Discover more about golden monkeys and about some of their relatives that live in Asia and Africa.

- magma.nationalgeographic.com/ngexplorer/0701/articles/mainarticle.html Read about biologist Cristina Mittermeier's encounter with golden monkeys in the mountains of central China.

ACTIVITY IDEAS

Shrinking Habitat

During the past 40 years, China's golden monkeys have lost a third of their mountain forest habitat to pastures, villages, and roads. Here's a way to demonstrate the effects of such a loss. When students are out of the classroom, rope off about a third of the room. Hang a sign on the rope that reads: "Keep out! This area will be cleared for pasture land." Once your students return, do not allow them to enter the roped-off area. Tell those who can no longer occupy their seats to sit in the larger part of the room. When everyone is seated in the larger area, discuss the crowding and loss of desks/chairs. Then ask students what they think happened when the golden monkeys' habitat began to shrink. Now rope off an additional small area of your classroom (if possible, one that encompasses a cloakroom where students store their lunches or a sink or water fountain.) Hang a sign on the rope that reads: "Keep out! This area will be cleared to make a road." Have students whose desks are in the newly roped-off area move to the crowded area of the room. Ask the class about this new situation. Discuss how students feel about the overcrowding as well as about possible loss of food and water. Then ask: How do you think shrinking habitat is affecting the golden monkeys' survival?

TIME:

20 Minutes

MATERIALS:

Ball of rope or string
Scissors
Paper
Marker
Tape

More Monkey Business

The golden monkey is just one of more than 130 monkey species. For information about other monkey species, visit globio.org/rr/monkeys. Once you've accessed this Web page, print out the photos of other monkey species that you find there. Ask students to compare and contrast photos of these monkeys with those of the golden monkeys in the *Ranger Rick* article. As a class, read the online article aloud. Discuss other ways monkey species are alike and different. If possible, organize a class field trip to a nearby zoo to see some of these monkeys firsthand.

TIME:

45 Minutes or more

MATERIALS:

Access to the Internet
and a color printer

Monkeying Around with Language

As a class, brainstorm a list of common phrases that include the word monkey. Here are some possibilities:

- Monkey see; monkey do.
- More fun than a barrel of monkeys.
- Monkeying around.
- Monkey wrench.
- Monkey business.
- I'll be a monkey's uncle.

Ask each student to choose a "monkey phrase" and illustrate it on a sheet of paper. Display students' creations on a bulletin board and have fun identifying the phrase each illustration represents.

TIME:

30-45 Minutes

MATERIALS:

Art paper
Crayons or markers

Nature's Jewels

pages 32 - 37

4



Learning Links:

The natural world creates many beautiful objects. This story highlights several made by living or once-living things: quartz and opal in petrified wood, amber from ancient forests, and pearls from oysters.

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- What are some things from nature that you think are beautiful?
- Where do they come from?

Comprehension Check:

- What is petrified wood?
- What are some of the minerals and gemstones it can contain?
- Describe the gemstone called opal.
- Where does amber come from?
- How is amber like a “time capsule”?
- How do scientists use amber?
- What else do people do with amber?
- How do pearls form?

- Describe a “perfect” pearl. Then describe some of the other ways pearls can look.
- How do people “grow” pearls?
- What is mother-of-pearl?
- What does the word *iridescent* mean? Name some things that are iridescent.

Critical and Creative Thinking Connections:

- What are some words you would use to describe the “jewels” pictured in this story? Why do we think of these objects as beautiful?
- “Beauty is in the eye of the beholder.” Have you ever heard this saying? What does it mean to you?
- What are some other objects from nature that you personally find beautiful?

RESOURCES

Firefly Guide to Gems by Cally Oldershaw (Firefly Books, 2004). If you can't visit an exhibit of minerals and gems at a local museum, here's the next best thing—a field guide to the many beautiful jewels created by nature.

➤ www.amnh.org/exhibitions/pearls/ This Web site on pearls from the American Museum of Natural History has lots of fascinating information to explore.

ACTIVITY IDEAS

Mineral Quest

Check out some of the objects mentioned in this story firsthand. Bring in samples if you have jewelry or other items made from any of them. Or take students on a trip to a local natural history museum and visit the mineral collection to see these and many other jewels from nature. Ask students to recall how each object is formed as they get a close-up view.

TIME:
Variable
MATERIALS:
Access to a mineral collection

In the Eye of the Beholder

Why are the items in this story beautiful to us? Engage students in a group discussion on this topic. Here are some questions to get them started:

- What do quartz, opal, amber, and pearls have in common?
- What words would you use to describe them?
- What other objects from nature are beautiful to you? Why?
- What happens to objects that people find beautiful?

TIME:
30 Minutes
MATERIALS:
None

Beauty Unmasked

Have students investigate other natural objects that are used to add beauty to our lives. The gems in this story all came from living or once-living things. What are some other kinds of jewelry or decorations that come from living things? (For instance, ivory, coral, wood, bamboo, nuts, beans, shells, feathers.) What about non-living sources? (Other gems such as rubies and diamonds, metals such as gold and silver.) Where do these things come from? How are they turned into the objects we're familiar with? Are there any problems caused by people wanting lots of these objects? Ask each student to choose one object and write an explanation of what it is and where it comes from, similar to the descriptions in the *Ranger Rick* story.

TIME:
60 Minutes or more
MATERIALS:
Library/Internet access
Paper and pencils

Nature Names

Point out to students that the words *opal*, *amber*, and *pearl* are all used as names for girls. Ask them why they think that is. Then ask them if they can think of more names that come from gems or other things in nature. Have fun brainstorming and divide your list into categories such as flowers (Rose, Lily, Daisy), gems (Ruby, Jasper), seasons (Summer, Autumn), and features or phenomena (Dawn, Sky, Brook, Forest). You could also look at name books or Web sites to see what names from other cultures and languages have origins in the natural world. Conclude by having students choose their own "nature names." Ask them to explain why they chose the name and how it is significant to them.

TIME:
Variable
MATERIALS:
Chart paper or chalk board
Library/Internet access (optional)



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. You can extend the learning and fun at home with these engaging family activities.

PHOTO OPPORTUNITIES

Did you see the photo contest winners in “Your Best Shots” on [page 5](#)? If your family is photographically inclined, spend a winter day taking pictures of some of the special natural areas where you live. Everyone can help scope out subjects and find the best camera angles. It’s sure to be a fun day—no matter how the pictures turn out. But if you get some good ones, you could make prints and give them as holiday gifts or compile them into a one-of-a-kind calendar just in time for the new year.

FOR THE BIRDS

Get a close-up look at “A Wreath for the Birds” on [pages 12-13](#). Then make one of your own. Have fun collecting seeds, fruits, and other items, decorating the wreath, and finally watching the birds that come to enjoy it.

HOPEFUL “TAILS”

Were you inspired by “How Do You Spell Hope? H-E-I-F-E-R” on [pages 16-19](#)? Check out the Web site of Heifer International for more stories of kids, families, and communities who have benefited from gifts of livestock. Go to www.heifer.org, click on “Our Work,” and then on “Field Video” to watch some heartwarming video clips.

BEAUTY FROM NATURE

Does anyone in your family have jewelry made from opal, amber, or pearls—the objects pictured in “Nature’s Jewels” on [pages 32-37](#)? If so, take a close look at it as you read about what it is and how it formed. Or visit a natural history museum and check out the rock and mineral displays to see lots more of these beautiful natural creations.

IN THE TIME OF ICE

This month’s “Fun on the Run” games ([pages 38-41](#)) are all about Ice Age animals. Play along to find out what mammals lived during this time. You might be surprised!

For more interactive family fun, be sure to visit 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

	Harp Seals 1	Heifer 2	Golden Monkeys 3	Nature's Jewels 4
Science as Inquiry				
Life Science				
Earth & Space Science				
Science & Technology				
Science in Personal and Social Perspectives				
History and Nature of Science				
English Language Arts				