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Ranger Rick®



EDUCATOR'S GUIDE



This guide is designed to complement the August 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

My Penguin Summer

pages 6-13



Learning Links:

Not all penguins spend their time on ice and snow, as the author of this story set out to show. His photos present an up-close view of four species of penguins during summer breeding season in the Falkland Islands.

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- What's your favorite way to spend a summer vacation?
- How do you think the author of this story spent his vacation?

Comprehension Check:

- Who's telling the story? Where is he from?
- Where did the author of this story spend his winter holidays?
- Why was it summer there?
- Describe the author's campsite.
- What were the four species of penguins he watched?
- List three words to describe each of these species.
- Which was the smallest species? The biggest?
- Which species takes showers? Why do they do this?

- Which penguin nests in a burrow?
- Which keeps its egg on its feet?

Critical and Creative Thinking Connections:

- Which of the four penguin species in this story do you like best? Why?
- The author mentions several of his special tricks for taking good photos. What's one of these tricks? Find a photo that illustrates this technique and explain why it does.
- What idea about penguins was the author hoping to change by taking these photos? Did he succeed?
- To describe each penguin species in such detail, the author had to observe them very carefully. Is there anything you know and can describe this well? If not, is there anything you'd like to know this well?

RESOURCES

Penguins by Ann Squire (Children's Press, 2007). Here's a good place to look for more penguin facts and photos.

Mr. Popper's Penguins by Richard and Florence Atwater (Little, Brown, 1992). This classic and truly silly tale about what happens when the Popper family receives a penguin in the mail is guaranteed to get a laugh. It also makes a nice companion to a more serious study of the science of penguins.

➤ www.penguins.cl/falklands.htm Meet the penguins of the Falkland Islands.

➤ www.falklands.net/FloraAndFauna.shtml Learn more about the plants, animals, and habitats of the Falklands.

ACTIVITY IDEAS**Sorting Penguins**

Have students devise ways to compare, contrast, sort, or categorize various penguin species. Here are some techniques to try:

- Fold a sheet of paper in fourths. On each section, describe one of the four penguin species in this story. Include physical characteristics, habitat, nesting strategies, and a drawing of the penguin.
- Expand the study to include other penguin species (17 in all). Students could produce a class field guide to penguins, with each student contributing a page on a different species.
- Find out the sizes of different species and rank them in a size chart.
- Categorize the different species by where they live.
- Group them based on similarities in color and pattern.

TIME:**30 Minutes****MATERIALS:**

**Library/Internet access
to research penguin
species
Paper and pencils**

Points of View

This story is written from a first person perspective. The author, Solvin Zankl, tells his tale firsthand. As students read it, ask them to pay close attention to the perspective and how it affects the way they experience the story. What do they learn about the author from hearing him speak in his own words? How does he share his knowledge of and interest in penguins? Do they feel, as readers, that they are part of the action? Compare this approach with some of the other stories in this issue written from a third person perspective. How would this story be different if it were written from another perspective? Would it be as interesting or as effective?

TIME:**20 Minutes****MATERIALS:****None****How I Spent My Summer Vacation**

Have students write their own first-person account of an adventure—real or imaginary. They could think of an animal they'd love to watch, study, and photograph for several weeks as Solvin did with the penguins. Then they could imagine they really did have a chance to do that and write a series of journal entries about the experience. Alternatively, they could think of an outdoor activity they have actually done (a camping trip, a hike, wildlife watching, fishing, etc.) and write about this. Encourage them to describe not just what they did but also what they thought or felt about it and why. Suggest that they include plenty of details to bring the reader into the action. Then invite students to share their work with the group. Discuss which aspects made the most effective use of the first-person format.

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

Tricky Sticks

pages 20-26

2



Learning Links:

Stick insects eat plants, look like plants to protect themselves from predators, and even have eggs that mimic seeds. These “masters of disguise” also have a number of other amazing survival tricks.

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- Have you ever heard someone say “You are what you eat”?
- What do you think this means?
- Have you ever seen an insect that looks like a stick?

Comprehension Check:

- What kind of animal is this story about?
- What do stick insects eat?
- How do their looks protect them?
- What are some of the other defenses listed in the story?
- Of the stick insects’ defenses, which ones are body parts (physical adaptations), which are behaviors (behavioral adaptations), and which include both?
- How are some stick insect eggs similar to some plant seeds?

- Why is the similarity helpful for the stick insects?
- Where does scientist Jürgen Berger study these stick insects?
- What are some of the challenges he faces?

Critical and Creative Thinking Connections:

- These animals have lots of names: stick insects, walking sticks, phasmids. What would you call them?
- If you were a scientist studying stick insects, what would you want to find out? How would you solve some of the challenges of studying these creatures?
- What are some other animals that get protection from looking like something they’re not?
- Why do you think the author started the story with the saying, “You are what you eat”? Have you ever heard that saying before? What does it mean?

RESOURCES

Walkingsticks by Patrick Merrick (Child’s World, 2007). Learn more about the behavior and life cycle of stick insects around the world.

- www.sandiegozoo.org/animalbytes/t-stick_insect.html Find more amazing stick insect facts and photos at the Web site of the San Diego Zoo, and watch a video clip of how a stick insect moves.

ACTIVITY IDEAS

Sticky Comparisons

Have students look closely at one of the photos of a stick insect—or, even better, use a hand lens to look at a real one. Ask them to list the things that make it seem more like a stick than an insect. Then have them list the things that make it seem more like an insect than a stick. Discuss how this plant mimicry helps the stick insect survive.

TIME:

30 Minutes

MATERIALS:

Live stick insects or photos
Hand lenses
Paper and pencils

Sticky Conversation

If a stick insect and a plant could talk to each other, what might they say? Would the plant be envious that the stick insect can move around? Would it be annoyed at being “copied”? Would the stick insect admire the plant’s perfection? Students can use the [Stick Says student page](#) to structure the dialogue. To extend the activity, they could then use the dialogue as a script for a puppet show or skit.

TIME:

30 Minutes

MATERIALS:

Stick Says student page
Optional: props for skit or puppet show

Hide a Stick

Does camouflage really work to keep insects safe from predators? Engage students in an investigation to answer this question. Scatter an assortment of colored toothpicks or bits of yarn in a grassy area. Be sure there are some green and brown ones in the mix, as well as bright colors such as red, orange, and yellow. Keep track of how many of each color you hide. Then give students a few minutes to find and collect these “insects.” When time is up, sort the “insects” into piles by color and count them. Make a chart that shows how many of each color students found. Which colors were the easiest and hardest to find? Did it depend on the location? Discuss with students how the results relate to camouflage in the animal world. To reinforce the lesson, students could make their own stick insects and hide them for others to find. (Start with a real stick and add pipe cleaners for legs and antennae.) After hiding and searching for them, discuss which ones were “hidden” most successfully and why.

TIME:

45 Minutes

MATERIALS:

Colored toothpicks or bits of yarn
Chart paper and markers
Sticks
Pipe cleaners

Animal Sayings

“You are what you eat” is a common saying. It’s called a figure of speech. Discuss with students the difference between literal and figurative language. Brainstorm some sayings that use animals figuratively, such as “busy as a bee,” “strong as an ox,” and “eager beaver.” For many more examples, see [There’s a Frog in My Throat: 440 Animal Sayings A Little Bird Told Me](#) by Loreen Leedy (Holiday House, 2003). Ask students to explain what qualities of an animal might have led to a particular saying. Have students draw pictures to illustrate some of these familiar sayings, or ask them to devise their own sayings and explain them.

TIME:

30 Minutes

MATERIALS:

Paper and pencils
Art supplies



Stick insects are animals, but they look a lot like plants. They also eat plants. But what if they could talk to plants? What do you think they might say? What would the plants say in reply? Imagine a conversation between a stick insect and a plant, and write it below.

Stick Insect: _____

Plant: _____

Stick Insect: _____

Plant: _____

Stick Insect: _____

Plant: _____

Stick Insect: _____

Plant: _____

Oh, Gross!

pages 28-33

3



Learning Links:

Some animal meals are a little . . . unusual. This story is guaranteed to get students' attention by featuring animals that eat everything from rotting meat to blood to dirt. But it also explains why each of these gross dinners makes good sense for its diner.

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- What's the title of this story?
- What do you think the story is about? Look at the pictures and make a prediction.

Comprehension Check:

- What is the moose eating on the first page of "Oh, Gross!"? Why?
- When does a vampire finch drink blood? Where does it get the blood?
- What is a scavenger?
- How does a river lamprey get its food?
- What's special about the poop that baby hamsters eat?
- Why does the author compare a baby penguin's meal to carry-out food? How is it similar? How is it different?

- What are two reasons parrots eat clay?

Critical and Creative Thinking Connections:

- Did this story gross you out? Why or why not?
- Of all the things in this story, which one is the grossest to you? Which one is the least gross? Why?
- What is it about the foods in this story that makes them gross to us? Who decides what's good to eat and what's not?
- What's the grossest thing you've ever eaten? What's something you would never eat?
- Is there anything you know is good for you that you still think is gross?
- What are three good reasons why the animals in this story eat the things they do?

RESOURCES

Animals Eat the Weirdest Things by Diane Swanson (Henry Holt, 1998). If your appetite for bizarre meals isn't satisfied yet, you'll find lots more to unsettle your stomach here!

ACTIVITY IDEAS**Foods by Category**

Ask students to classify the animal foods in this story according to various criteria. For example, which of the things the animals are eating:

- Give them nutrients or vitamins they can't get anywhere else?
- Protect them from something that could be harmful?
- Use up something that would go to waste?

After they sort according to these categories, have students devise some of their own criteria for classification and sort accordingly.

TIME:**15 Minutes****MATERIALS:****Paper and pencils****Food Around the World**

Different kinds of animals eat very different things. People around the world eat different things, too. Have a discussion—or, better yet, a meal—in which you explore and learn about the foods of many cultures. Students could contribute something from their own heritage for everyone else to sample. Discuss how things that may seem “gross” are simply unfamiliar, and how people who aren't familiar with your favorite foods might find those items unappetizing!

TIME:**60 Minutes****MATERIALS:****Foods from many cultures (or reference materials about them)****Oh, Gross! Part II**

Have students write their own versions of “Oh, Gross!” But, for a new twist, have them write the story for an animal audience about the weird things people eat! They should be sure to explain why people eat these things, in the same way that this story explains the reasons behind the things the animals eat.

TIME:**45 Minutes****MATERIALS:****Paper and pencils****Design a Menu**

Invite students to imagine they run a restaurant that caters especially to the animals in this story. What would they name the restaurant? What kinds of dishes would they serve? Have them design a menu for the restaurant. Encourage them to use creativity to make the meals sound appetizing instead of gross. Catchy names and descriptive details are a winning combination—or a humorous approach could be even more fun.

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

China's VIPs: Very Important Pikas

pages 36-39

4



Learning Links:

The Tibetan Plateau is a tough place to live, especially during its long, cold winters. But plateau pikas make life easier for many of their wildlife neighbors. Pikas are an important food source for some plateau animals, and their abandoned burrows make great shelters for several species.

DISCUSSION QUESTIONS & WRITING PROMPTS

Pre-Reading Questions:

- What do the initials VIP usually stand for?
- What kinds of people come to mind when you think of VIPs?
- What are pikas? What do they look like?
- Why do you think this story calls pikas China's VIPs?

Comprehension Check:

- What is a plateau?
- Where is the Tibetan Plateau?
- Why don't trees grow on the Tibetan Plateau?
- What is a pika?
- Why is life on the Tibetan Plateau hard for plateau pikas? Give three reasons.
- Why are pikas so important to other wildlife on the Tibetan Plateau?

- What other animals depend on them?
- Why have some people been poisoning the pikas?
- Why do some scientists believe pikas are not destroying the area's grasslands?
- How are some of these scientists trying to help?

Critical and Creative Thinking Connections:

- Look at the animals on pages 38-39. What do you think would happen to each one if plateau pikas became extinct?
- Do you agree with the statement: "Little guys don't count"? Why or why not?
- If you were a scientist on the Tibetan Plateau, what things would you want to study about the pikas? How might your findings help them?

RESOURCES

Daughter of the Mountains by Louise S. Rankin (Puffin, 1993). Learn more about life on the Tibetan Plateau in this Newbery Honor book.

Tintin in Tibet by Hergé (Little, Brown, 1975). Set in the Tibetan mountains, this installment of the popular Tintin comic series paints an accurate picture of the region's geography and wildlife.

➤ enature.com/fieldguides/view_default.asp?allSpecies=y&searchText=pika Provides information on two pika species that live in the United States—the American and the collared pika.

ACTIVITY IDEAS

Structured Note-Taking

Within minutes, students forget more than half the material they read or hear in class. Good note-taking can help them retain and recall more of this information, but students need practice to take effective notes. Providing them with a visual framework to complete as they read (or listen) can help. Ask your students to complete the [Take Note! student page](#) as they read "China's VIPs." After they have finished, have them share their notes with a partner, explaining why they selected the information they did. Once students gain some experience with the note-taking frameworks that you supply, they can begin to develop their own visual frameworks.

TIME:

60 minutes

MATERIALS:

[Take Note! student page](#)

Lively Debate

This debate activity promotes creative expression as well as thinking from different perspectives. First, divide the class into three rows. Students in Row 1 are the observers and will take notes during the debate. Ask students in Row 2 to argue this position: The Chinese government should help plateau pikas to survive. And ask Row 3 to take the opposite position. Each student in Rows 2 and 3 should then select a person or animal who supports their assigned position. Every student has three minutes to give the class good reasons to support his or her character's point of view. (For fun, students could assume their character's voice and mannerisms.) Following the presentations, ask the observers to review their notes and then vote for the row that presented the strongest case overall. Have the observers discuss why that group's arguments seemed more persuasive. Then ask the "debaters" to describe what it was like to communicate ideas from their assigned perspective. Was it difficult? Why or why not? What did they learn from this activity?

TIME:

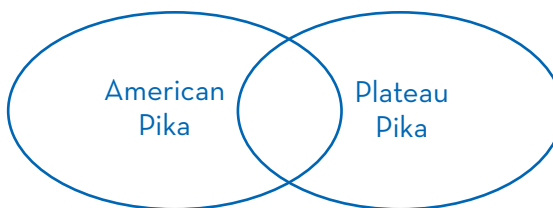
60-75 Minutes

MATERIALS:

Paper and pencils

Pika Cousins

The plateau pika doesn't live in the United States, but two others—the American and collared pikas—do. Ask students to find out how one of these pika species is alike and different from the plateau pika. Information should cover physical features, habitat, behavior, and population growth. Have students draw two partially overlapping circles and label one "American Pika" or "Collared Pika," and the other "Plateau Pika." Characteristics that the two species share should go in the space where the circles overlap. Distinct characteristics should go in the other part of the circles. Visit the Web address listed on the previous page for facts about the two U.S. pikas.



TIME:

30-45 Minutes

MATERIALS:

Paper and pencils
Books/Internet for researching pikas

In Search of Pikas

If you live in the western United States or Canada, you might be able to spot an American or collared pika, or its home, during a hike in the mountains. Visit the web address listed on the previous page to learn the signs. Then go looking!

TIME:

Varies

MATERIALS:

Access to pika habitat
Internet access



Take Note!

As you read "China's VIPs," write down the key information from the story in the chart below. Be prepared to explain why the information you chose is important.

Topic: Plateau Pikas

What problems do pikas face?

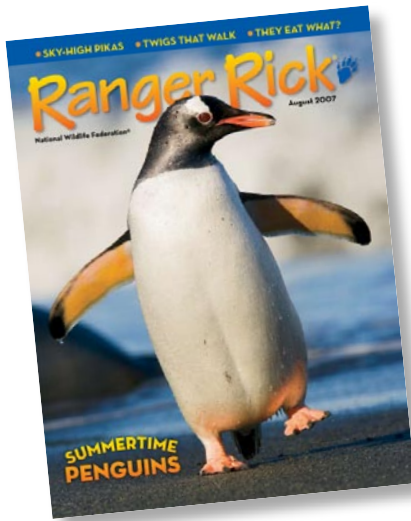
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What causes these problems?

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What can be done to solve the problems?

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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.

SUMMER STUDY

In “My Penguin Summer” on [pages 6-13](#), you read how Solvin Zankl spent a South American summer watching and photographing penguins. Summer vacation’s not over yet—why not choose a local animal for your own study! Find a good place to watch from (or build a blind for stealth), keep a journal of what you see, and take photos of your subjects.

INSIDE VIEW

Take a look at “Welcome to Moleville” on [page 14](#). Then think of another animal that lives underground, in a tree, or in some other hidden place. Draw your own cutaway view of what might be going on inside that animal’s home. Your version could be realistic or, if you prefer, silly like this one.

BUG SAFARI

You read about stick insects in “Tricky Sticks” ([pages 20-26](#)). Now see if you can spot a stick insect yourself! Can you find one, or any other interesting insects to observe?

GROSS OUT

The animals in “Oh, Gross!” ([pages 28-33](#)) sure eat some weird stuff. Have you ever seen an animal eat something gross? Have you ever eaten anything really weird? Why? Was it good? Take turns telling your tales—then write them down and send them to *Ranger Rick*! (See the details under “Whatcha Think” on [page 5](#).)

DRAGON HUNT

This month’s “Fun on the Run” games are all about dragons. Pick one of the “Real-Life Dragons” in the word search on [page 40](#) and use the library or an Internet search to find out more about it. Where would you find one? What does it look like? Can you figure out why it was named after a dragon?

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

NATIONAL 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

- 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

	<i>Penguin Summer</i>	<i>Tricky Sticks</i>	<i>Oh, Gross!</i>	<i>China's Y.I.P.s</i>
	1	2	3	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				