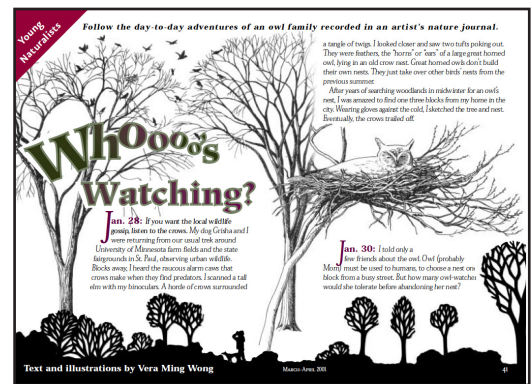


Teachers Guide

Prepared by **“Whoooo’s Watching?” Multidisciplinary Classroom Activities**
 Jack Judkins,
 Curriculum

Connections Teachers guide for the Young Naturalists article “Whoooo’s Watching?” Written and illustrated by Vera Ming Wong. Published in the March–April 2001 *Minnesota Conservation Volunteer*, or visit www.mndnr.gov/young_naturalists/owladventures
 Minnesota

Young Naturalists teachers guides are provided free of charge to classroom teachers, parents, and students. This guide contains a brief summary of the article, suggested independent reading levels, word count, materials list, estimates of preparation and instructional time, academic standards applications, preview strategies and study questions overview, adaptations for special needs students, assessment options, extension activities, Web resources (including related Conservation Volunteer articles), copy-ready study questions with answer key, and a copy-ready vocabulary sheet and vocabulary study cards. There is also a practice quiz (with answer key) in Minnesota Comprehensive Assessments format. Materials may be reproduced and/or modified to suit user needs. Users are encouraged to provide feedback through an online survey at www.mndnr.gov/education/teachers/activities/ynstudyguides/survey.html.



New digital archives: All *Minnesota Conservation Volunteer* articles published since 1940 are now online in searchable PDF format. Visit www.mndnr.gov/magazine and click on *past issues*.

Summary

“Whoooo’s Watching?” is the compelling story, in a naturalist’s journal, of the struggles of a pair of great horned owls to raise two owlets near the state fairgrounds in St. Paul. Readers will learn about the owl’s reproduction, from egg incubation through fledging, and predator/prey relationships.

Suggested reading levels:

Fourth through eighth grades

Total words:

1,403

Materials:

Paper, poster board, pencils, pens, markers, owl pellets (See Web resources for supplies and materials.), print/video resources your media specialist may provide.

Preparation time:

One to two hours, not including time for extension activities

Estimated instructional time:

One or two 50-minute class periods (not including extensions)

“Whoooo’s Watching?”—Teachers Guide

Minnesota Academic Standards Applications:

“Whoooo’s Watching?” may be applied to the following Minnesota Department of Education standards:

Language Arts

I. Reading and Literature

- A. Word Recognition, Analysis and Fluency
- B. Vocabulary Expansion
- C. Comprehension
- II. Writing
 - A. Types of Writing
 - B. Elements of Composition
 - C. Spelling
 - D. Research
 - E. Handwriting and Word Processing

III. Speaking, Listening and Viewing

- A. Speaking and Listening
- B. Media Literacy

Science

Grades 3, 5, 7

4. Life Science

Grades 3 and 5: 1. Structure and Function in Living Systems

Grades 5 and 7: 2. Interdependence Among Living Systems

Grade 7: 4. Human Interactions with Living Systems

Social Studies

Grades 4–8

V. Geography

D. Interconnections: The student will describe how humans influence the environment and in turn are influenced by it. (1. Students will recognize changes over time in nearby landscapes, resulting from human occupation.)

Arts

Grades K–8

- 1. Artistic Foundations: Visual Arts
- 2. Artistic Process: Create or Make: Visual Arts
- 3. Artistic Process: Perform or Present: Visual Arts
- 4. Artistic Process: Respond or Critique: Visual Arts

Current, complete Minnesota Academic Standards are available at www.education.state.mn.us. Teachers who find other connections to standards are encouraged to contact *Minnesota Conservation Volunteer*.

Preview

Your preview will depend on how you apply the content to the standards. For example, if you are reading the article in science you may ask students to survey the article. Examine the illustrations. Use the **KWL** strategy (Ogle, 1986) to find out what your students already know (**K**) about the birds in the article, what they would like to learn (**W**), and eventually what they learned (**L**) while reading the article and related materials, and through participating in extension activities. You might begin by asking small groups to brainstorm their ideas. Then combine the groups’ data to make a class list. Display your **K** and **W** ideas on poster board or paper (see Vocabulary preview). Add to your **L** list as you read and discuss the article. See www.teach-nology.com/web_tools/graphic_org/kwl for a KWL generator that will produce individual organizers for your students. Individual organizers may be useful as students read the article for answers to **W** questions. KWL also gives you the opportunity to introduce interdisciplinary connections you will make during extension activities.

If you use the article in an art class, you may wish to focus your prereading discussion on the author-artist’s technique in blending pictures with text.

“Whoooo’s Watching?”—Teachers Guide

Vocabulary preview

See the copy-ready vocabulary list included in this guide. You may wish to modify the list based on your knowledge of your students’ needs or the subject you are teaching. Pretesting vocabulary individually, in small groups, or with your entire class can be an effective vocabulary preview strategy. You may then post-test at the conclusion of this activity (see Assessment section below).

You may wish to use the study cards found at the end of this guide. Cut along the horizontal line; fold in the middle and tape or staple. Study cards (see *Strategic Tutoring*, Hock, Deshler, and Schumaker, 2000) can be applied to any subject area. On one side of the card, in large letters, write a key word or phrase that students are expected to know. In smaller letters frame the word or phrase in a question or statement. On the other side of the card, in large letters, write the answer to the question. Finally, in smaller letters, frame the answer in a question or statement. Blanks are provided to allow you or your students to add new words or phrases.

Study questions overview

Preview the entire guide with your class before you read the article. You may wish to read the story aloud and complete the study questions in class, in small groups, or as an independent activity. The questions may be assigned as homework, depending on the reading ability of your students. Inclusion teachers may provide more direct support to special needs students (see Adaptations section). The study questions may be also used as a quiz. Note: Items 11, 12, 13, and 16 and the Challenge require varying degrees of critical thinking.

Adaptations

Read aloud to special needs students. Abbreviate the study questions or highlight priority items to be completed first. If time allows, remaining items may be attempted. Peer helpers, paraprofessionals, or adult volunteers may lend a hand with the study questions. With close teacher supervision, cooperative groups can also offer effective support to special needs students, especially for extension activities.

Assessment

You may use all or part of the study guide, combined with vocabulary, as a quiz. Other assessment ideas include: (1) Students may retell the story in an essay. Require a beginning, middle, and end. You may also require a minimum number of words. (2) Students may submit multiple choice, true-false, and short answer questions. Teachers may then select the best items for a class quiz. (3) Poster presentations may depict one or more scenes from the story. Students may work in groups or individually. (4) Ask students to tell the story from the perspective of the owls, the crows, or the peregrine falcon. Students may work in groups.

Extension activities

1. Invite a DNR nongame wildlife specialist to visit your classroom. See www.dnr.state.mn.us/eco/nongame/index.html.
Another resource for teachers in the Twin Cities metro area is the University of Minnesota Raptor Center. Field trips and speakers may be arranged at www.cvm.umn.edu/raptor/learn/home.html. Or check with a nature center or environmental learning center in your area to see if they provide raptor programs.
2. Students may learn more about the bird species in this article at the DNR Birds of Minnesota Web site (www.dnr.state.mn.us/birds/index.html).
3. Visit a state park near you. Ask a naturalist to work with you to design a program to enrich your students’ understanding of the species in the article.
4. In the mid 20th century DDT nearly caused the extinction of the great-horned owl and may other birds of prey. Students may learn more about DDT at www.energyclassroom.com/index.php?id=30&page=Power_&_Wildlife#owls. How do present-day environmental threats, such as mercury, loss of habitat, or wind turbines affect owls? See Web resources for sites to get students started.

“Whoooo’s Watching?”—Teachers Guide

Extension activities continued

5. Encourage students to make a list of the birds, mammals, and other animals that live in their city or town. Urban wildlife is an active area of study in wildlife management. Students may keep a nature journal of wildlife in their neighborhoods. See Web resources for more information.
6. Dissect owl pellets and catalog the contents. See Web resources. This works well as a partners activity.

Web resources

Great horned owls

www.energyclassroom.com/index.php?id=30&page=Power_&_Wildlife#owls5intl
www.owlpages.com/owls.php?genus=Bubo&species=virginianus
www.allaboutbirds.org/guide/Great_Horned_Owl/id

Owl pellets

www.kidwings.com/owlpellets/flash/v4/index.htm
www.biologycorner.com/worksheets/owlpellet.html
www.hometrainingtools.com/owl-pellet-dissection-project/a/1244/
www.hawkquest.org/TA/XL/Pellet.pdf

Peregrine falcons

www.energyclassroom.com/index.php?id=30&page=Power_&_Wildlife
www.allaboutbirds.org/guide/Peregrine_Falcon/id

Crows

www.allaboutbirds.org/guide/American_Crow/id
www.animaldiversity.ummz.umich.edu/site/accounts/pictures/Corvus_brachyrhynchos.html

Urban wildlife

www.enviroliteracy.org/article.php/603.html
www.science.howstuffworks.com/urban-wildlife-info.htm

Raptor Center

www.cvm.umn.edu/raptor/

Mercury poisoning

www.michigan.gov/dnr/0,1607,7-153-10370_12150_12220-26953--,00.html
www.mercury-poison.com/fish_list.htm

Habitat loss

www.fws.gov/birds/documents/HabitatLoss.pdf
www.hsus.org/wildlife/issues_facing_wildlife/habitat_loss_and_fragmentation/

Wind generator effects on birds

www.science.howstuffworks.com/wind-turbine-kill-birds.htm
www.abcbirds.org/conservationissues/threats/energyproduction/wind.html

Teacher Resources

www.mndnr.gov/education/teachers/index.html

*Note: All Web sites were active at the time of this guide’s publication. However, some may no longer be active when this guide is accessed.

“Whoooo’s Watching?”—Teachers Guide

Related articles

Related *Minnesota Conservation Volunteer* Young Naturalists articles are available online at www.mndnr.gov/volunteer/articles/index.html, including:

September–October 1992

“Awesome Owls” (YN article)

www.dnr.state.mn.us/young_naturalists/awesomeowls/index.html

November–December 2003

“Land Use: A Bird’s Eye View”

www.dnr.state.mn.us/volunteer/novdec03/birdseyeview.html

January–February 2004

“The Nature of Feathers” (YN article with teachers guide)

www.dnr.state.mn.us/young_naturalists/feathers/index.html

January–February 2006

“Minnesota Profile: Great Gray Owl”

www.dnr.state.mn.us/volunteer/janfeb06/mp.html

“A Storm of Owls”

www.dnr.state.mn.us/volunteer/janfeb06/owl_storm.html

March–April 2006

“The Hole Story” (YN article with teachers guide)

www.dnr.state.mn.us/young_naturalists/cavity_nesters/index.html

July–August 2008

“Burrowing Owl”

www.dnr.state.mn.us/volunteer/julaug08/mp.html

March–April 2009

“Where the Wild Things Are”

www.dnr.state.mn.us/volunteer/marapr09/thisissue.html

“Wildlife in the City”

www.dnr.state.mn.us/volunteer/marapr09/city_wildlife.html

July–August 2009

“The Cunning Colonist”

www.dnr.state.mn.us/volunteer/julaug09/coyotes.html

References

Hock, M.F., Deshler, D.D., and Schumaker, J.B. *Strategic Tutoring*. Lawrence, Kan.: Edge Enterprises, 2000.
Ogle, D.S. K-W-L Group Instructional Strategy. In A.S. Palincsar, D.S. Ogle, B.F. Jones, and E.G. Carr (Eds.), *Teaching Reading as Thinking: Teleconference Resource Guide*, pp.11–17. Alexandria, Va.: Association for Supervision and Curriculum Development, 1986.

“Whoooo’s Watching?”—Teachers Guide

Study Questions

Teachers guide for the Young Naturalists article “Whoooo’s Watching?” Written and illustrated by Vera Ming Wong. Published in the March–April 2001 *Minnesota Conservation Volunteer*, or visit www.mndnr.gov/young_naturalists/owladventures

Name _____ Period _____ Date _____

1. What clue did the author use to discover the great horned owl nest? _____

2. Why was the owl in another bird’s nest? _____

3. The author told only a few people about her discovery. Why? _____

4. Why do you suppose the owls selected this particular nest site? _____

5. What can an owl pellet tell about the owl it came from? _____

6. How does the male owl help the female owl? _____

7. How long does it take for an owlet to hatch? _____

8. What did the author do to upset the owls? _____

9. What happened that told the author she and her dog were too close to the nest? _____

10. How much does an adult great horned owl weigh? _____

11. Do you think a great horned owl could kill an animal that weighed 7 pounds and carry it back to its nest?

_____ Why or why not? _____

12. Why do you suppose female great horned owls are larger than males? _____

13. How did the storm affect the owlets? _____

14. Why do you think the Raptor Center advised the humans to leave the owlets alone? _____

15. Why was the peregrine falcon attacking the owl? _____

16. About how old were the owlets when they began to hunt for themselves? _____

17. Why will the owlets have to find a new place to live? _____

Challenge: Beginning with January and ending with October, select the most important event the author observed each month. Justify your answers. _____

Study Questions Answer Key

Teachers guide for the Young Naturalists article “Whoooo’s Watching?” Written and illustrated by Vera Ming Wong. Published in the March–April 2001 *Minnesota Conservation Volunteer*, or visit www.mndnr.gov/young_naturalists/owladventures

1. What clue did the author use to discover the great horned owl nest? **She heard crows sounding the alarm that a predator was near.**
2. Why was the owl in another bird’s nest? **Great horned owls do not build their own nests.**
3. The author told only a few people about her discovery. Why? **She was afraid that if too many people came to see the nest the owls would leave.**
4. Why do you suppose the owls selected this particular nest site? **There was plenty of food nearby.**
5. What can an owl pellet tell about the owl it came from? **What the owl is eating.**
6. How does the male owl help the female owl? **The male brings food for the female and owlets.**
7. How long does it take for an owlet to hatch? **From 26 to 35 days.**
8. What did the author do that upset the owls? **She tried to photograph the owls with a large lens.**
9. What happened that told the author she and her dog were too close to the nest? **The female owl attacked the author’s dog.**
10. How much does an adult great horned owl weigh? **From 3 to 4 pounds.**
11. Do you think a great horned owl could kill an animal that weighed 7 pounds and carry it back to its nest? Yes, no, or maybe. Why or why not? **Owls can carry about twice their weight, so it would depend on how much the owl weighed.**
12. Why do you suppose female great horned owls are larger than males? Answers will vary. **Females must produce eggs and incubate the eggs. Larger body mass might be an advantage.**
13. How did the storm affect the owlets? **It blew the nest out of the tree, and separated one owlet from its parents.**
14. Why do you think the Raptor Center advised the humans to leave the owlets alone? **As long as the parents can protect the owlets there is no reason for humans to intrude.**
15. Why was the peregrine falcon attacking the owl? **Great horned owls prey on peregrine falcon chicks.**
16. About how old were the owlets when they began to hunt for themselves? **About three months.**
17. Why will the owlets have to find a new place to live? **The territory where the parent owls live can only support one family of owls.**

Challenge: Beginning with January and ending with October, select the most important event the author observed each month. Justify your answers. **Answers will vary. Challenge students to focus on primary details, such as, January - nest discovered; February - eggs may have hatched; March - owlets observed for the first time.**

Minnesota Comprehensive Assessments Practice Items

Teachers guide for the Young Naturalists article “Whoooo’s Watching?” Written and illustrated by Vera Ming Wong. Published in the March–April 2001 *Minnesota Conservation Volunteer*, or visit www.mndnr.gov/young_naturalists/owladventures

Name _____ Period _____ Date _____

1. Bull’s-eye might be used as another name for what type of agate?

- A. fortification agate
- B. eye agate
- C. water-level agate
- D. circular agate

2. The Agate and Geological Center is located in

- A. Duluth
- B. Moose Lake State Park
- C. Lake Bemidji State Park
- D. Pipestone Monument

3. Are Whoooo’s Watching? prospecting? Why or why not?

4. Rock tumblers are used to

- A. locate large Lake Superior agates.
- B. separate agates from other rocks.
- C. polish rocks.
- D. identify agates.

5. What two minerals are responsible for the Lake Superior agate’s reddish color?

- A. iron and chalcedony
- B. iron and silica
- C. iron and silver
- D. iron and gold

“Whoooo’s Watching?”—Teachers Guide

Minnesota Comprehensive Assessments Answer Key

Teachers guide for the Young Naturalists article “Whoooo’s Watching?” Written and illustrated by Vera Ming Wong. Published in the March–April 2001 *Minnesota Conservation Volunteer*, or visit www.mndnr.gov/young_naturalists/owladventures

1. A great horned owl attacked **C. the author’s dog.**
2. The Raptor Center told the author’s neighbor to **C. leave the owlet alone.**
3. This article proves that **B. careful observation can reveal amazing stories.**
4. Why do you think the owls chose to raise their young in the city? **Answers will vary. There was a good food source. Perhaps there was less competition from other owls or predators.**
5. How does an owl’s vision differ from a human’s vision? **D. A and C**

“Whoooo’s Watching?”—Teachers Guide

Vocabulary

Teachers guide for the Young Naturalists article “Whoooo’s Watching?” Written and illustrated by Vera Ming Wong. Published in the March–April 2001 *Minnesota Conservation Volunteer*, or visit www.mndnr.gov/young_naturalists/owladventures

cacaphony	unpleasant noise
cylindrical	tube-shaped
ecology	study of organisms and the environment
fledge	become capable of flight
habitat	home environment
incubate	sit on eggs to keep them warm
predator	animal that eats other animals
raptor	bird of prey
regurgitate	bring up from the stomach
talon	a hooked claw

“Whoooo’s Watching?”—Teachers Guide

Vocabulary Study Cards

Teachers guide for the Young Naturalists article “Whoooo’s Watching?” Written and illustrated by Vera Ming Wong. Published in the March–April 2001 *Minnesota Conservation Volunteer*, or visit www.mndnr.gov/young_naturalists/owladventures

Cut along the horizontal lines, fold in the middle and tape or staple. Blanks are provided to allow you or your students to add new words or phrases.

What is a
cacaphony?

FOLD HERE

An
unpleasant noise
is a

What is a
cylindrical
shape?

FOLD HERE

An object that is
tube-shaped is

What is
ecology?

FOLD HERE

The **study of organisms**
and the environment
is called

To **fledge** is to

FOLD HERE

To **become**
capable of flight is to

“Whoooo’s Watching?”—Teachers Guide

What is a
habitat?

FOLD HERE

An **organism’s
home environment**
is its

To **incubate**
is to

FOLD HERE

To **sit on eggs to keep
them warm** is to

A
predator
is an

FOLD HERE

An **animal that eats
other animals** is a

A
raptor
is a

FOLD HERE

Another name for a
bird of prey is a

To
regurgitate
is to

FOLD HERE

To **bring up from
the stomach** is to

“Whoooo’s Watching?”—Teachers Guide

What is a
talon?

FOLD HERE

A **hooked claw**
is a

FOLD HERE

FOLD HERE

FOLD HERE

FOLD HERE