Young Naturalists

# Teachers Guide

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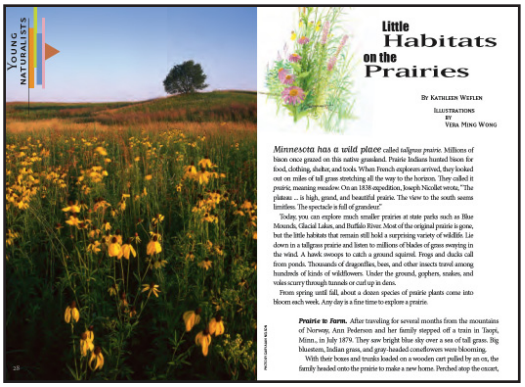
## "Little Habitats on the Prairies" Multidisciplinary Classroom Activities

Teachers guide for the Young Naturalists article "Little Habitats on the Prairies" by Kathleen Weflen with illustrations by Vera Ming Wong. Published in the July–August 2012 *Minnesota Conservation Volunteer*, or visit www.mndnr.gov/young_naturalists/prairie




*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* Minnesota 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

"Little Habitats on the Prairies" takes readers on a tour of Minnesota's prairies. The most common grasses, flowers, and animals are described, as are their evolutionary adaptations for finding food and shelter and for surviving weather and fire events. Illustrations and photos supplement the text.

| | |
|---|---|
| **Suggested reading levels:** | Third through middle school grades |
| **Materials:** | Minnesota prairie map, paper, poster board, colored pencils, crayons, pens, markers, as well as print and online 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) |

**Minnesota Academic Standards Applications:**

"Little Habitats on the Prairies?" may be applied to the following Minnesota Department of Education standards:

**Language Arts**
**Reading Benchmarks**
**Informational Text 3–8**
Key Ideas and Details
Craft and Structure
Integration of Knowledge and Ideas
Range of Reading and Level of Text Complexity

**Writing Benchmarks 3–8**
Text Types and Purposes
Writing Process
Research to Build and Present Knowledge
Range of Writing

**Reading Benchmarks: Literacy in Science and Technical Subjects 6–8**
Key Ideas and Details
Craft and Structure
Integration of Knowledge and Ideas
Range of Reading and Level of Text Complexity

**Writing Benchmarks: Literacy in History/Social Studies, Science and Technical Subjects 6–8**
Text Types and Purposes
Writing Process: Production and Distribution of Writing
Research to Build and Present Knowledge
Range of Writing

**Mathematics**
**Grade 6**
Number and Operation
6.1.1.3; 6.1.2.2; 6.1.3.3

**Science**
**Grade 3**
Structure and Function in Living Systems
3.4.1.1.1; 3.4.1.1.2
**Grades 3 & 7**
Evolution in Living Systems
3.4.3.2.2; 7.4.3.1.3; 7.4.3.2.3
**Grade 4**
Interdependence Within the Earth System
4.3.2.3.1
**Grades 5 & 8**
Earth and Space Science
5.3.1.2.1; 5.3.1.2.2, 5.3.4.1.1; 8.3.4.1.2
**Grades 5 & 7**
Interdependence Among Living Systems
5.4.2.1.1; 5.4.2.1.2; 7.4.2.1.1; 7.4.2.1.2; 7.4.2.1.3; 7.4.2.2.1; 7.4.2.2.2; 7.4.2.2.3

**Social Studies**
**Grades 3, 4, 6–8**
Geography
3.3.1.1.1; 4.3.1.1.1; 6.3.1.1.1; 7.3.1.1.1; 8.3.1.1.1
**Grade 4**
Human Environmental Interaction
4.3.4.10.2
**Grade 6**
Geography
6.3.3.6.1; 6.3.4.10.1
History
6.4.4.20.2

**Arts**
**Grades K–12**
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

Download the map of Minnesota prairies from a century ago and today (files.dnr.state.mn.us/eco/mcbs/prairie_map.pdf). Ask students to examine the map and to discuss what it might illustrate. Keep a list of possibilities on a large piece of paper or poster board that can be displayed while you work on the story. Follow with the KWL strategy (Ogle, 1986) to find out what your students already know (K) about prairie habitats. You might begin by asking small groups to brainstorm their ideas. Then combine the groups' data to make a class list. Repeat step one by asking what students would like to learn (W). As you read and discuss the article you will begin to compile the (L) list, or what they learn while reading the article and related materials and participating in extension activities. Display your K and W ideas on poster board or paper (see Vocabulary preview). See www.teach-nology.com/web_tools/graphic_org/kwl for a KWL generator that will produce individual organizers for your students. KWL gives you the opportunity to introduce interdisciplinary connections you will make during extension activities. If you use the article in science or art class, you may wish to focus your prereading discussion on academic standards that apply for that class.
Another strategy for accessing prior knowledge is a brainstorming web. You may download a printable web at www.teachervision.fen.com/tv/printables/TCR/0743932080_007.pdf.

## 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). Italicized words are not generally included on the list or in the study cards.

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 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

Study questions parallel the story (the answer to the first question appears first in the article, followed by the second, and so on). 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 with an asterisk require varying degrees of critical thinking. For item 5 see Compare and Contrast links under Web Resources below.

## 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 write an essay describing one or more of the main ideas in the article. For example, essays could focus on fire or rainfall. (2) Students may write multiple-choice, true-false, or short-answer questions. Select the best items for a class quiz. (3) Poster presentations may supplement or take the place of essays. Students may work in small groups with each group focusing on a different main idea. (4) Have students complete the main idea and supporting details activity found at www.teachervision.fen.com/tv/printables/scottforesman/Math_2_TTM_25.pdf. You or your students can select main ideas. If you wish to include more than two main ideas, use more than one sheet.

## Extension activities

1. Three Young Naturalists articles from the archives, "Buffalo are Back," "Busy Biomes," and "Chickens That Wear Snowshoes," make excellent companion pieces for "Little Habitats on the Prairies." See Related Articles for links.
2. Contact the Prairie Ecology Bus Center (www.ecologybus.org/index.html) and/or the University of Minnesota Southwest Research and Outreach Center (swroc.cfans.umn.edu/index.htm) to arrange a school program or field trip.
4. Scientific and Natural Areas (SNAs) offer excellent field trip opportunities. See the map at www.mndnr.gov/snas/map.html to find an SNA near your school.
4. Challenge students to create posters illustrating critical features, such as prairie potholes, of the prairie biome of Minnesota. See Web Resources for more information.
5. Check out the excellent lesson plan on prairie insects for fourth grade at www.fws.gov/midwest/PWLC/documents/4thPrairieInsects.pdf.
6. Prairies make an excellent topic for haiku poetry. See www.gigglepoetry.com/poetryclass/Haiku.html.

## Web resources

**Minnesota DNR**
www.mndnr.gov/snas/index.html
www.mndnr.gov/prairierestoration/index.html
www.mndnr.gov/prairies/index.html

**Prairie Chickens**
www.prairiechicken.org
www.allaboutbirds.org/guide/greater_prairie-chicken/id

**Compare and Contrast**
www.readwritethink.org/files/resources/interactives/compcontrast/
www.manatee.k12.fl.us/sites/elementary/samoset/rcccon1.htm
www.readingquest.org/strat/compare.html

**Prairie Ecology**
www.mndnr.gov/eco/prairies.html
www.ecologybus.org/Learning%20Links/links_prairie.html
www.landscope.org/explore/ecosystems/disappearing_landscapes/tallgrass_prairie

**Biomes**
www.mndnr.gov/biomes/prairie.html

## Web resources continued

**Prairie Food Web**
www.kfb.org/ageducation/agedimages/Prairie%20Food%20Chains%20and%20Webs.pdf
(lesson plan for 4-6 grades)

**Animals and Plants of the Prairies**
www.mndnr.gov/animals/index.html
www.blueplanetbiomes.org/prairie.htm
www.enchantedlearning.com/biomes/grassland/prairie.shtml
prairiegardentrust.org/explore/plants-and-animals

**Minnesota DNR Teacher Resources**
www.mndnr.gov/education/teachers/index.html
www.mndnr.gov/dnrkids/index.html

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

## Related Articles

In addition to the related articles listed below, every *Minnesota Conservation Volunteer* article published since 1940 is now online in searchable PDF. See *webapps8.dnr.state.mn.us/volunteer_index* to access hundreds of articles

**May–June 1993**
"Buffalo Are Back"
www.mndnr.gov/young_naturalists/buffalo/index.html (YN article)

**January–February 1996**
"Busy Biomes"
www.mndnr.gov/young_naturalists/biome/index.html (YN article with teachers guide)

**November–December 1998**
"Chickens That Wear Snowshoes"
www.mndnr.gov/young_naturalists/grouse/index.html (YN article)

**September–October 2002**
"The Universe Underfoot"
www.mndnr.gov/young_naturalists/soil/index.html (YN article)

**September–October 2009**
"Retooling Minnesota's Duck Factory"
www.mndnr.gov/volunteer/sepoct09/duck_factory.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.

## Study Questions

Teachers guide for the Young Naturalists article "Little Habitats on the Prairies" by Kathleen Weflen with illustrations by Vera Ming Wong. Published in the July–August 2012 *Minnesota Conservation Volunteer*, or visit www.mndnr.gov/young_naturalists/prairie

Name _____Period _____Date_____

1. Where does the word *prairie* come from, and what does it mean? _____

_____

2. Why has the prairie been compared to the ocean? _____

_____

3. Before settlers moved into Minnesota, how many acres of prairies existed? _____

4. What percentage of native prairies remains? _____

5. Compare and contrast little bluestem and big bluestem grasses. _____

_____

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6. What effect have the Rocky Mountains exerted on the prairies? _____

_____

_____

7. Explain how the *compass plant* got its name. _____

_____

8. Examine the map on pages 32–33. What does it show about Minnesota prairies? _____

_____

_____

_____

9. How are grasses better adapted than trees to life in windy conditions? _____

_____

_____

10. Describe how some prairie animals cope with fire. _____

_____

11. Who was John Weaver, and what did he discover? _____

_____

12. What are prairie potholes? How do they benefit wildlife? _____

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_____

_____

13. What do bull snakes and burrowing owls have in common? _____

_____

14. Why do you suppose prairie meadow mice have so many babies? _____

_____

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_____

15. If you visited Glacial Lakes State Park, what might you discover? _____

_____

16. What percent of its mother's weight does a newborn bison weigh? _____

*Challenge*: Using Emily Dickinson's poem (p. 39) as inspiration, write your own poem about the prairie. _____

_____

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_____

_____

# Study Questions Answer Key

Teachers guide for the Young Naturalists article "Little Habitats on the Prairies" by Kathleen Weflen with illustrations by Vera Ming Wong. Published in the July–August 2012 *Minnesota Conservation Volunteer*, or visit www.mndnr.gov/young_naturalists/prairie

1. Where does the word *prairie* come from, and what does it mean? **Prairie comes from the French word, prairie, which means meadow.**

*2. Why has the prairie been compared to the ocean? **When the wind blew, the grasses rolled like waves.**

3. Before settlers moved into Minnesota, how many acres of prairies existed? **18 million**

*4. What percentage of native prairies remains? **Only 1.3 percent of our native prairies remains.**

*5. Compare and contrast little bluestem and big bluestem grasses. **Answers may vary, but should include: they are both plants, they are both grasses, and they both grow on the prairies. Little bluestem grows on high ground, while big bluestem grows in lowlands. Little bluestem is shorter, is a different color, and has differently shaped seed heads.**

6. What effect have the Rocky Mountains exerted on the prairies? **The Rocky Mountains block moisture. With less rainfall trees do not grow well, but grasses flourish.**

7. Explain how the *compass plant* got its name. **The compass plant's lower leaves point north and south.**

*8. Examine the map on pages 32–33. What does it tell you about Minnesota prairies? **Answers may vary. The map shows that Minnesota prairies are divided into two regions, short grass and mixed grass.**

*9. How are grasses better adapted than trees to life in windy conditions? **Trees often blow down or break in the wind, while grasses just bend over.**

10. Describe how some prairie animals cope with fire. **Bison run away. Burrowing animals, such as gophers, escape underground.**

11. Who was John Weaver, and what did he discover? **John Weaver worked as a botanist in the 1930s. He discovered that grasshoppers actually helped prairie grasses survive drought by cutting leaves, thus lessening the distance for water to travel from roots to leaves.**

12. What are prairie potholes? How do they benefit wildlife? **Prairie potholes are small ponds that migrating birds use for food and shelter.**

13. What do bull snakes and burrowing owls have in common? **They both live part of their lives underground.**

*14. Why do you suppose prairie meadow mice have so many babies? **Answers may vary. Since so many predators depend on mice for food, mice must reproduce frequently to avoid extinction.**

*15. If you visited Glacial Lakes State Park, what might you discover? **An oxcart trail from the 1800s.**

16. What percent of its mother's weight does a newborn bison weight? **5 percent**

**Challenge*: Using Emily Dickinson's poem (p.39) as inspiration, write your own poem about the prairie.

***Question involves critical thinking**

# Minnesota Comprehensive Assessments Practice Items

Teachers guide for the Young Naturalists article "Little Habitats on the Prairies" by Kathleen Weflen with illustrations by Vera Ming Wong. Published in the July–August 2012 *Minnesota Conservation Volunteer*, or visit www.mndnr.gov/young_naturalists/prairie

Name _____Period _____Date_____

1. Male bison may weigh up to _____ pounds.
   A. 1,000
   B. 2,000
   C. 3,000
   D. 4,000

2. Minnesota only has _____ acres of native prairie remaining.
   A. 1 million
   B. 235,000
   C. 10,000
   D. none of the above

3. Gold stem is another name for _____.

4. How are the Great Plains similar to the Serengeti Plains? _____
_____

5. Kettle lake is another name for _____ .

## Minnesota Comprehensive Assessments Answer Key

Teachers guide for the Young Naturalists article "Little Habitats on the Prairies" by Kathleen Weflen with illustrations by Vera Ming Wong. Published in the July–August 2012 *Minnesota Conservation Volunteer*, or visit www.mndnr.gov/young_naturalists/prairie

1. Male bison may weigh up to **B. 2,000 pounds**.

2. Minnesota only has **B. 235,000 acres of native prairie remaining**.

3. Gold stem is another name for **Indian grass**.

4. How are the Great Plains similar to the Serengeti Plains? **Like the Serengeti, the Great Plains were home to large populations of grazing mammals**.

5. Kettle lake is another name for **pothole**.

## Vocabulary

Teachers guide for the Young Naturalists article "Little Habitats on the Prairies" by Kathleen Weflen with illustrations by Vera Ming Wong. Published in the July–August 2012 *Minnesota Conservation Volunteer*, or visit www.mndnr.gov/young_naturalists/prairie

| | |
|---|---|
| **adaptation** | a trait in living things that evolves by means of natural selection |
| **botanist** | a person who studies plants |
| **bison** | a large, humped mammal that roamed the Great Plains, also called buffalo |
| **drought** | extended lack of rainfall |
| **habitat** | the environment in which a plant or animal lives |
| **heritage** | something inherited from the past |
| **hibernate** | sleep through the winter |
| **mammals** | warm-blooded animals that feed their young milk |
| **migrate** | move from one region to another and back |
| **perennial** | plant that lives more than two years |
| **pollinate** | transfer pollen grains from the male to the female part of a plant |
| **predator** | animal that kills and eats other animals |
| **prey** | animals that are killed and eaten by other animals |
| **rodent** | a small, gnawing mammal, such as a mouse or a gopher |
| **subterranean** | underground |

## Vocabulary Study Cards

Teachers guide for the Young Naturalists article "Little Habitats on the Prairies" by Kathleen Weflen with illustrations by Vera Ming Wong. Published in the July–August 2012 *Minnesota Conservation Volunteer*, or visit www.mndnr.gov/young_naturalists/prairie

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 an **adaptation?** | FOLD HERE | **A trait in living things that evolves by means of natural selection** is an |
| A **botanist** is a person who | FOLD HERE | A person who **studies plants** is a |
| **Bison** are | FOLD HERE | **Large, humped mammals that roamed the Great Plains** are |
| A **drought** is an | FOLD HERE | An **extended lack of rainfall** is a |

| | |
|---|---|
| What is a **habitat?** | **The environment in which a plant or animal lives** is called its |
| **Your heritage** is | **Something inherited from the past** is |
| What are **mammals?** | **Warm-blooded animals that feed their young milk** are called |
| To **migrate** is to | To **move from one region to another** is to |
| A **perennial** plant is a | A **plant that lives more than two years** is a |

FOLD HERE

| | |
|---|---|
| To **pollinate** is to | To **transfer pollen grains from the male to the female part of a plant** is to |
| A **predator** is | **An animal that kills and eats other animals** is a |
| A **prey** animal is | **An animal that is killed and eaten by other animals** is called |
| What is a **rodent**? | **A small, gnawing mammal, such as a mouse or a gopher** is a |
| A **subterranean** home is | An **underground** home is |

FOLD HERE

FOLD HERE

FOLD HERE

FOLD HERE

FOLD HERE

FOLD HERE