

TEACHERS GUIDE

TO “TURTLE POWER”

Multidisciplinary classroom activities based on the Young Naturalists nonfiction story in *Minnesota Conservation Volunteer*, November–December 2018, www.mndnr.gov/mcvmagazine.

Minnesota Conservation Volunteer magazine tells stories that connect readers to wild things and wild places. Subjects include earth science, wildlife biology, botany, forestry, ecology, natural and cultural history, state parks, and outdoor life.

Education has been a priority for this magazine since its beginning in 1940. “One word—Education—sums up our objective,” wrote the editors in the first issue. Thanks to the MCV Charbonneau Education Fund, every public library and school in Minnesota receives a subscription. Please tell other educators about this resource.

Every issue now features a Young Naturalists story and an online Teachers Guide. As an educator, you may download Young Naturalists stories and reproduce or modify the Teachers Guide. The [student portion of the guide](#) includes vocabulary cards, study questions, and other materials.

Readers’ contributions keep *Minnesota Conservation Volunteer* alive. The magazine is entirely financially supported by its readers.

Find every issue online. Each story and issue is available in a searchable PDF format. Visit www.mndnr.gov/mcvmagazine and click on *past issues*.

Thank you for bringing Young Naturalists into your classroom!

“TURTLE POWER”

Multidisciplinary classroom activities based on the Young Naturalists nonfiction story in *Minnesota Conservation Volunteer*, November–December 2018, www.mndnr.gov/mcvmagazine.



SUMMARY. Ubiquitous and slow-moving, turtles are among Minnesota’s most easy-to-study animals. “Turtle Power” introduces Young Naturalists to the biology and natural history of turtles and profiles types of Minnesota turtles.

SUGGESTED READING LEVELS. Third through middle-school grades

MATERIALS. KWL organizer; optional resources include internet access, large paper/poster paper, and other print and online resources your media specialist may provide.

PREPARATION TIME. One to two hours, not including time for extension activities

ESTIMATED INSTRUCTION TIME. 30 to 60 minutes, not including extension activities

MINNESOTA ACADEMIC STANDARDS APPLICATIONS. “Turtle Power” activities described below may be used to achieve some or all of the following Minnesota Department of Education standards:

SCIENCE (GRADES 3, 5, 7)

Nature of Science and Engineering (Benchmarks: 5.1.3.2.1)

Life Science (Benchmarks: 3.4.1.1.1, 3.4.1.1.2, 5.4.4.1.1, 6.4.2.1.1; 7.4.3.2.1, 7.4.4.1.2)

ARTS (GRADES 3-8)

Visual Arts: Create: 5.4.2.3.1; 5.7.2.3.1; 5.8.2.3.1

ENGLISH LANGUAGE ARTS (GRADES 3-8)

Reading Benchmarks: Informational Text (Grades 3-8)

Key Ideas and Details (Benchmarks 3.2.1.1; 3.2.2.2; 4.2.1.1; 4.2.2.2; 5.2.1.1; 5.2.2.2; 6.5.1.1; 7.5.1.1; 8.5.1.1)

Craft and Structure (Benchmarks 3.2.4.4, 4.2.4.4., 4.2.6.6; 5.2.4.4; 5.2.6.6, 6.5.4.4; 7.5.4.4)

Integration of Knowledge and Ideas (3.2.7.7; 4.2.7.7; 4.2.9.9; 5.2.7.7; 4.2.8.8; 5.2.8.8; 5.2.9.9)

Writing Benchmarks (Grades 3-8)

Research to Build and Present Knowledge (Benchmarks 3.6.7.7; 4.6.7.7; 5.6.7.7; 6.7.7.7; 7.7.7.7; 8.7.7.7)

Language Benchmarks (Grades 3-8)

Vocabulary Acquisition and Use (3.10.4.4; 4.10.4.4; 5.10.4.4; 6.11.4.4; 7.11.4.4; 8.11.4.4; 6.11.6.6; 7.11.6.6; 8.11.6.6)

Reading Benchmarks: Literacy in Science and Technical Subjects (Grades 6-8)

Key Ideas and Details (Benchmarks 6.13.1.1; 6.13.2.2)

Writing Benchmarks: Literacy in Science and Technical Subjects (Grades 6-8)

Research to Build and Present Knowledge (Benchmark 6.14.7.7)

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

PREVIEW. (1) Invite students to share stories of any experiences they have had with turtles. (2) Use the discussion about past experiences as a springboard for a [KWL activity](#). Divide students into small groups. Within the groups, have students describe what they already know (K) about turtles and what they wonder (W) about turtles. Give each student a copy of the organizer (see www.teach-nology.com/web_tools/graphic_org/kwl/) and encourage each to make notes during the group discussion. As you read and discuss the article you can compile a list of what they learn (L) while reading the article and related materials and participating in extension activities.

VOCABULARY PREVIEW. You can find a copy-ready vocabulary list at the end of this guide. Feel free to modify it to fit your needs. Share the words with your students and invite them to guess what the words mean. Tell them you will be reading a story that will help them understand these words so they can use them in the future! As your students encounter these vocabulary words in the story, you may want to encourage them to infer meaning using context clues, such as other words in the sentence or the story's illustrations. Students also could be encouraged to compare their inferences as to what the words mean with their earlier guesses and with the definitions from the vocabulary list.

You might wish to use the study cards (adapted from [Strategic Tutoring](#)) found at the end of the

[Study Questions](#) for this Young Naturalists feature. On one half of the card, in large letters, is a key vocabulary word or phrase with smaller letters framing the word or phrase in a question or statement. On the other half is the answer to the question or the rest of the statement. Cut along the horizontal line, fold in the middle, and tape or staple, then use like flash cards. We've included a few blanks so you or your students can add new words or phrases if you'd like.

STUDY QUESTIONS OVERVIEW. Preview the study questions with your class before you read the article. Then read the story aloud. Complete the study questions in class, in small groups, or as an independent activity, or use them as a quiz.

ADAPTATIONS. Read aloud to special needs students. Abbreviate the study questions or focus on items appropriate for the students. Adapt or provide assistance with extension activities as circumstances allow.

ASSESSMENT. You may use all or part of the study guide, combined with vocabulary, as a quiz. Other assessment ideas include: (1) Ask students to describe what they learned about turtles. See the "learned" list from your KWL activity. (2) Have students write multiple-choice, true-false, or short-answer questions based on the article. Select the best items for a class quiz. (3) Have students create posters, podcasts, or videos to demonstrate what they have learned. (4) Play Turtle Jeopardy! Invite students to submit questions and answers related to what they have learned about turtles. Format them into a Jeopardy-style game format. Divide the students into teams to play.

EXTENSION ACTIVITIES. Extensions are intended for individual students, small groups, or your entire class. Young Naturalists articles provide teachers many opportunities to make connections to related topics, to allow students to follow particular interests, or to focus on specific academic standards.

1. Learn about reptiles. How are they like other animals? How are they different? What other reptiles besides turtles are found in Minnesota?
2. Explore what traits allow turtles to survive in Minnesota habitats. How are Minnesota turtles different from turtles or tortoises that live in other environments, such as the desert or ocean?
3. Turtles were alive 200 million years ago, at the same time dinosaurs lived. Dig deep and find out what other animals were alive at that time. Have students investigate the fossil record of turtles (When do they first appear in the fossil record? Does the fossil record indicate that turtles changed much or little, relative to other animals?)
4. Explore keratin, the material that makes up turtle shells. What other parts of various animals (including humans) are made of keratin? What traits does keratin have that make it such a useful material?
5. A turtle plays an important role in the Ojibwe story of the origin of North America. In Great Lakes Ojibwe culture, winter was an important time for storytelling. Invite a local

elder or someone familiar with Ojibway culture to share this creation story with your students during one of the winter months. Or invite a local elder to discuss traditional relationships with turtles and other Minnesota wildlife.

6. In addition to the important role the turtle plays in the Ojibway story of creation, turtles are featured in many other cultures' oral traditions. What roles do turtles play or what features of turtles are highlighted in stories from other cultures or countries? How are they symbolized or depicted? Students can create their own artistic work that communicates the role or characteristics of a turtle in the culture or country they researched.

7. According to the International Union for Conservation of Nature (IUCN, 2018), 148 of the 356 known species of turtles and tortoises are threatened. Have students visit the IUCN's Red List website to learn more about the categories used to describe species threatened with extinction and reasons why turtles and tortoises are threatened. Which Minnesota turtle species are threatened? Create a poster featuring listed Minnesota species and how people can help them.

WEB RESOURCES

GENERAL TEACHER AND STUDENT RESOURCES

[Minnesota DNR Teachers' Resources](#)

[DNR Kids Page](#)

GENERAL SPIDER INFORMATION

[Special Delivery \(Young Naturalists article on eggs\)](#)

[Smooth Softshell \(MCV article\)](#)

[Tailing Turtles \(MCV article\)](#)

[Wanted: Rare Turtle Sightings \(MCV article\)](#)

[Why Do Turtles Cross the Road? \(MCV article\)](#)

[Turtles of Minnesota](#)

[Amphibian and Reptile Survey of Minnesota](#)

[Roadways and Turtles: Solutions for Safety \(Minnesota DNR\)](#)

TURTLE CONSERVATION

[IUCN Red List](#)

[Turtles in Trouble](#)

TURTLE CONSERVATION

[Protect Our Turtles \(Minnesota DNR\)](#)

VIDEOS

[Blanding's Turtle](#)

[Cool Science - Turtle Biology 101 - YouTube](#)

[Mystery Doug Could a Turtle Live Outside Its Shell?](#)

[Creature Feature: Snapping Turtles!](#)

RELATED MCV ARTICLES

[Smooth Softshell](#)

[Tailing Turtles](#)

[Wanted: Rare Turtle Sightings](#)

[Why Do Turtles Cross the Road?](#)

STUDY QUESTIONS ANSWER KEY

1. How many turtle species are native to Minnesota? **Nine.**
2. What are three characteristics turtles share with other reptiles? What trait sets them apart? **Like other reptiles, turtles breathe air, have scales, and don't keep a constant body temperature. Their shell sets them apart from other reptiles.**
3. Name two benefits turtles get from basking in the sun. **The sun helps warm them and rid them of leeches.**
4. What do turtles eat? **Fish, insects, crayfish, dead things, plants.**
5. What eats turtles? **Raccoons, skunks, coyotes, and foxes, among others.**
6. Why is it important for a mother turtle to drink a lot of water before she crawls onto land to lay her eggs? **She will need to make urine to moisten the soil in the hole in which she lays her eggs.**
7. The top of a turtle's shell is called a _____ and the bottom is called a _____. **carapace; plastron.**
8. Where do young painted turtles often spend the winter?
 - a. **In their nest**
 - b. on floating logs
 - c. in piles of dead leaves
 - d. in Florida
9. Match the turtle with the trait:

painted turtle – orange, red, and yellow markings

map turtle – has lines on its shell like those on a topographic map

softshell turtle – lies buried in muck with their snouts stuck out

snapping turtle – has strong jaws for biting food

Blanding's turtle – has a bright yellow throat

wood turtle – stomps the ground to attract earthworms

10. Name four threats that are making it hard for wood turtles to survive in Minnesota.

Habitat loss, roads, logging, water pollution

11. According to the article, how does trash hurt a turtle?

a. it makes them sad

b. it attracts raccoons and other animals that might eat them

- c. the smell makes it hard for them to find food
- d. it poisons their water

Challenge: Turtles use armor rather than the ability to move quickly to protect themselves from predators. What other animals can you think of that use a “shelter in place” approach to staying safe? What traits does each have that helps protect them? **Answers will vary but could include snakes and venom, white-tailed deer fawns and camouflage, porcupines and spines, etc.**

MINNESOTA COMPREHENSIVE ASSESSMENTS ANSWER KEY.

1. True or false: Turtles have ears but can't hear. **False. Turtles don't have visible ears, but can sense sound.**
2. One scientist called turtles “one of the greatest success stories in all of nature.” Why? **Turtles have been around for 200 million years and have survived a wide variety of environmental conditions and changes over that period of time.**
3. Name three things you can do to help turtles thrive in Minnesota. **Answers may vary. Some possibilities: move them off of roads, help keep waterways clean, pick up trash, don't keep wild turtles for pets, don't release pet turtles into the wild, protect nests until eggs hatch, send information on Blanding's and wood turtle sightings to the Minnesota Department of Natural Resources.**
4. Why are softshell turtles sometimes called “pancake turtles”?
 - a. **because they are flat like a pancake**
 - b. because they eat pancakes
 - c. because you can use them to make pancakes
 - d. because you can find them in pools of water in the same way you can find pancakes in pools of syrup
5. Where do turtles spend the winter? **Some spend winter on the bottom of a body of water. Some newly hatched turtles winter in their nest. Others winter on land.**

VOCABULARY LIST

cavity hole

crayfish small, lobster-like animal

hinged connected with a device that allows movement

lurk hang out in a secret or hidden way

muck slimy, wet soil or other such material

range the area an animal lives in

snout pointy end of an animal's face

topographic map a map with lines that indicate changes in elevation

vegetation plants

vocal cords a part of the throat that makes sound