

TEACHERS GUIDE

TO “SEARCH AND RESCUE, DETECT AND SOLVE”

Multidisciplinary classroom activities based on the Young Naturalists nonfiction story in *Minnesota Conservation Volunteer*, March–April 2017, 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 Naturalist 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. It is the only state conservation magazine to claim the distinction of being financially supported by contributions from 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!

“SEARCH AND RESCUE, DETECT AND SOLVE”

Multidisciplinary classroom activities based on the Young Naturalists nonfiction story in *Minnesota Conservation Volunteer*, March–April 2017, www.mndnr.gov/mcvmagazine



SUMMARY. “Search and Rescue, Detect and Solve” introduces Young Naturalists to the work of conservation officers. Readers are invited along on real-life adventures as these outdoor heroes rescue a man from a swamp and gather clues that help them deduce whether hunters are following the law.

SUGGESTED READING LEVELS. Third through middle school grades

MATERIALS. KWL organizer, paper, poster board, writing materials, print and online research resources

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

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

MINNESOTA ACADEMIC STANDARDS APPLICATIONS. “Search and Rescue, Detect and Solve” 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 6

Geometry and Measurement

6.3.3.1

SOCIAL STUDIES 3,4,5, AND 6

Citizenship and Government

3.1.4.6.1; 5.1.1.1,2; 6.1.1.1.3; 6.1.4.6.3;

Geography

4.3.4.9.1;

History

3.4.1.2.2;

SCIENCE 3, 5, 7, AND 8

Nature of Science and Engineering

3.1.3.2.2;

Life Science

5.4.4.1.1; 7.4.4.1.2; 8.1.3.3.3

ARTS 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 at www.education.state.mn.us. Teachers who find other connections to standards are encouraged to contact *Minnesota Conservation Volunteer*.

PREVIEW. To introduce the topic of conservation officers, you might use a KWL activity. To find out what your students already know (K) about conservation officers, divide the class into small groups to brainstorm their ideas. Give each student a copy of the organizer and encourage each to make notes during the group discussion. Ask what students would like to learn, or what questions they have, about the topic (W). Record their questions on poster board for reference. As you read and discuss the article you will begin to compile the (L) lists, or what they learn while reading the article and related materials and participating in extension activities. 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 pre-reading activity on academic standards that apply for that class.

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 you students and invite them to guess what they think they mean. Tell them you will be reading a story that will help them understand these words so they can use them in the future!

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 frame 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 conservation officers. 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) Posters and presentations are an excellent strategy for allowing students to demonstrate what they have learned.

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. This story tells about two things conservation officers do: help people who are in trouble outdoors and enforce game laws. These are just a few of conservation officers' many responsibilities. Invite students to dig a little deeper and uncover examples of other things conservation officers do. What skills and interests help conservation officers do their jobs well?
2. Invite a conservation officer to speak to your class on topics pertinent to your students (career choices, natural resource law, outdoor safety, etc.).
3. Two of the examples in this story related to enforcing regulations related to deer hunting. Invite students to research and create a display about hunting regulations in Minne-

sota. Why do we have hunting regulations? How can people find out about them? What happens if they break them?

4. Use this lesson as an opportunity for career exploration. What kind of education does a person need to become a conservation officer? What interests and abilities are useful to have? What are the working conditions? What are the challenges and rewards?

5. One of the stories in this Young Naturalists piece describes the work of a conservation officer and her K9 partner. Learn about the use of dogs in law enforcement. What can dogs do that people can't? How does a dog become a K9 partner?

6. Minnesota natural resources laws range from setting hunting seasons to protecting lakes by restricting what lakeshore owners can do. Individually or in groups, identify and research a natural resource-related Minnesota law, exploring its history and purpose and discussing how it helps keep Minnesota natural resources healthy. Alternatively, invite students to propose a natural resource law that doesn't yet exist and conduct a debate for and against it.

7. The resources list below includes some *Minnesota Conservation Volunteer* articles that describe the work of conservation officers (formerly called game wardens) in years gone by. How has the job changed over time? Compare and contrast past and future roles, responsibilities, tools, etc.

WEB RESOURCES

GENERAL TEACHER AND STUDENT RESOURCES

[Minnesota DNR Teachers' Resources](#)

[DNR Kids Page](#)

MINNESOTA CONSERVATION VOLUNTEER ARTICLES

[Stake Out](#)

[To Catch a Poacher](#)

[Our Pioneer Wardens](#)

[For COs, No Patrol is Routine](#)

[The Old Warden Service and How It Grew: 10 Decades Have Brought Changes](#)

[Peace Officers With a Mission](#)

NATURAL RESOURCE REGULATIONS

[Minnesota Natural Resource Regulations](#)

CONSERVATION OFFICER CAREERS

[Minnesota DNR Conservation Officer Careers](#)

[North American Wildlife Enforcement Officers Association](#)

[Minnesota Conservation Officers Association](#)

STUDY QUESTIONS ANSWER KEY

1. What kind of laws do conservation officers enforce? **Laws that protect natural resources.**

2. How did the man lost in the swamp let others know that he needed help? **D. He called 911.**

3. How did a drone help conservation officers rescue a man stuck in a cattail swamp?

The drone hovered over the man in trouble so the officers could tell which direction to travel to find and rescue him.

4. Why did Conservation Officer Salzer ask the lost man to take off his blaze-orange hunting vest? **So they could use it to guide the rescue helicopter to the group.**

5. Why did COs Bertram and Johanson take the three men to jail? **Because they had broken the law by shining.**

6. What clues helped COs Bertram and Johanson ? **E. all of the above**

7. Why is it illegal to shoot a deer from the road? **The article tells us that it's not safe. Students may reasonably conclude that there is too much danger of shooting people who are using the road or the area near it.**

8. How would snow have helped the COs solve the "Follow the Nose" case? **By allowing them to follow the man's tracks to where he was standing when he shot the deer.**

9. What did Brady use to find the shotgun shell? **His sense of smell.**

10. What does it mean to field-dress a deer? **D. cut it open and remove its internal organs**

11. Challenge: The Carlos Avery Management Area covers 25,000 acres. There are 2.5 acres in a hectare. How many hectares does it cover? **10,000** There are 640 acres in a square mile. How many square miles does Carlos Avery Management Area cover? **39**

MINNESOTA COMPREHENSIVE ASSESSMENTS ANSWER KEY.

1. Another name for conservation officer is: **D. A and C**

2. What is a drone? **A small, remote-controlled aircraft**

3. Why did the man stuck in the swamp have trouble telling rescuers where he was? **Because the swampy land had few signs or markers to follow.**

4. Why did COs Keith Bertram and Jeff Johanson stop to investigate a beam of light on their way home from patrol? **Use details from the story to support your answer. It is illegal to use a light to hunt deer more than two hours after sunset. It was 2 in the morning, so the sun had set long before.**

VOCABULARY LIST

encounter discover, run into

jackhammer power tool used to break up rock and concrete

membrane thin, exible sheet of material

pack group of animals

pedipalps leglike structures spiders have near their mouths

pitch how high or low a sound is

sonic related to sound

symphony variety of sounds being made at the same time

tendon rubber-band like body part that helps muscles move other body parts
territorial relating to the place an animal lives and defends from other animals
vertebrate animal with a backbone

vibrate rapidly move back and forth