

Watershed Proposal



Image by Ducks Unlimited Canada.

Specific Learning Outcomes

8-4-17: Identify substances that may pollute water, related environmental and societal impacts of pollution, and ways to reduce or eliminate effects of pollution.

8-4-18: Identify environmental, social, and economic factors that should be considered in the management of water resources.

8-4-19: Use the design process to develop a system to solve a water-related problem.

General Learning Outcomes

8-0-1a: Formulate specific questions that lead to investigations.

8-0-2a: Access information using a variety of sources.

8-0-2b: Develop and use criteria for evaluating information sources.

8-0-4c: Work cooperatively with team members to carry out a plan, and troubleshoot problems as they arise.

8-0-4d: Assume various roles to achieve group goals.

8-0-7g: Communicate methods, results, conclusions, and new knowledge in a variety of ways.

Vocabulary

watershed, continental divide, erosion, wetland, drainage system

Summary

Students will identify an environmental concern that impacts the Lake Winnipeg watershed. They will come up with a realistic solution to address the concern. They will research their idea and explain it in a written proposal.

Materials

- *Projector and computer to present slideshow*
- *Student access to a library and the internet*
- *Writing materials*

Procedure

Warm Up

Begin by reminding students of their recent visit to Oak Hammock Marsh, and ask them what they remember about watersheds. Present the included slideshow, which will provide an overview of their local watershed and look at some of the positive and negative impacts humans have on them.

Activity

The slideshow introduces students to the activity, in which students will research an issue affecting their local watershed, investigating possible solutions to the problem and considering the various social, economic, and environmental factors that affect the issue.

A wetland is an area of land that holds shallow water, with a maximum depth of two metres. The water makes the soil very moist, so plants who need moist soils will grow in and around the water; this is why a wetland can not be deeper than two metres, because otherwise these kinds of plants drown and do not receive enough sunlight. The water moves slowly because there are so many plants that slow the water down, absorbing some of the water like a sponge and filtering it as it moves through.

Human interventions are actions that can have positive and negative affects on an ecosystem.

A watershed, also known as a drainage basin, is an area of land where all water drains to a central point like a lake, river, or stream.

You may choose to have students work individually or in small groups of up to four students. This activity may take several classes of research time to complete, or could be assigned as homework.

Students will research their local watershed, and identify issues present in the watershed. This could include: invasive species, pollution/littering, habitat degradation, recycling, habitat loss, etc.

Once they have chosen their issue, students will research and brainstorm possible solutions. To help them come up with an idea have them answer the following questions:

- What do you like to do?
- What are you passionate about?
- How can you relate it back to your watershed?
- Is your idea realistic? (timeline, price, etc.)
- Who could help make your idea a reality?

Wrap Up

Students can present their findings in a written proposal, approximately 1000 words. Include visuals (video, models, graphics, photos, etc.).

Conclude by reflecting on how a watershed is affected by human interventions both positive and negative.

Extensions:

- *Students could also create an oral presentation of their proposal to present to the class.*
- *The Caring for our Watersheds program provides funding to turn these environmental solutions into reality. For more information on how students can participate, or to book a free workshop in your classroom, see our website: <https://www.oakhammockmarsh.ca/learn/caring-for-our-watersheds/>*

Animal Highlight - the Western Painted Turtle

On the cover of this section, and in the insets you will see pictures of the Western Painted Turtle. The Western Painted Turtle has a wide range throughout the southern portion of western and central Canada from British Columbia to northwestern Ontario.

They inhabit shallow aquatic habitats with slow-moving water, soft bottoms, aquatic vegetation, and abundant basking sites. They occur in a diversity of habitat types, including swamps, marshes, permanent or temporary ponds, creeks, rivers and lakes. Females nest in sandy or gravelly soils in open-canopy habitats with high sun exposure, such as in forest clearings, meadows, shorelines, fields, and the shoulders of roads. The nest sites are typically within 200 m of a water body. Painted Turtles overwinter at the bottom of water bodies or under submerged undercut banks.

To learn more visit: http://www.canadianherpetology.ca/species/species_page.html?cname=Western%20Painted%20Turtle