

# Otter Ponds Demonstration Forest

## A Day in the Woods

For more information about the forest, visit [nswooa.ca/otter-ponds/](http://nswooa.ca/otter-ponds/) Questions? Call Andy Kekacs toll free at 1-855-NS-WOODS or write to [andy.nswooa@gmail.com](mailto:andy.nswooa@gmail.com).

### Relevant Grade 4 Curriculum

#### Science 4

##### **Life Science: Habitats** (p. 13)

Students will be expected to:

- *Habitats and Populations*
  - identify questions to investigate the types of plants and/or animals at a local habitat using the terms habitat, population, and community (104-6, 204-1)
  - examine and investigate, using various methods and questions, local habitats and their associated populations of plants and animals (204-6, 302-1)
  - identify their own and their families' impact on habitats and describe how personal actions help conserve habitats (108-3, 108-6)
  
- *Behavioural and Structural Features of Animals That Enable Them to Survive in Their Habitat*
  - compare the external features, behavioural patterns, structural, and/or behavioural adaptations for an animal to survive a particular habitat, real or imagined (204-3, 300-1, 300-2, 302-2)
  
- *Structural Features of Plants That Enable Them to Survive in Their Habitat*
  - describe how scientists' knowledge of plant growth has led to agricultural and technological innovations and the impact on local and regional habitat issues (105-1, 106-4, 108-1)
  
- *Food Chains*
  - classify organisms and draw diagrams to illustrate their role in a food chain (206-1, 302-3)
  - predict how the removal of a plant or animal population affects the rest of the community and relate habitat loss to the endangerment or extinction of plants and animals (301-1, 301-2)

### Activities for Grade 4 Students

The Science 4 curriculum materials include a large number of activities that are appropriate for a field trip to Otter Ponds, notably Activities 1-4, 13, 15, and 17-19. In addition, we offer the following ideas for your class:

#### **Atlantic Canada Science Curriculum: Science Grade 4 Curriculum**

- **Activity 5: Observing Our Habitat** (p. 124)
  - *Once students have reached their habitat(s) have them use their hoops or metric tape measures to define their area. Groups should begin recording their observations. Each group should take a digital picture of their area and of anything they cannot identify. They can then use this picture as a reference back at school. Samples of plants, soil, etc., could be brought back to the school*

for further analysis. The soil samples could be used for more detailed observations using the Intel Microscope.

- **Curriculum Outcome:** Students will be expected to examine and investigate, using various methods and questions, local habitats and their associated populations of plants and animals (204-6, 302-1)
- **Activity 11: The Rotting Log** (p. 135)
  - Written as an indoor activity, but could easily be adapted for outdoors
  - Students should be instructed to take care while exploring the log so they do not injure or destroy the living things. Students should keep a record of the types and quantity of living things they find.
- **Activity 20: Loss of a Habitat** (p. 148)
  - This learning experience will provide students with the opportunity to examine human impact on living organisms in a habitat. Students should be given the opportunity to relate this activity to local habitats. When and where possible, students should be given the opportunity to observe first-hand what happens when a forest fire, hurricane, or other natural disaster destroys a natural habitat.
  - **Curriculum Outcome:** Students will be expected to predict how the removal of a plant or animal population affects the rest of the community and relate habitat loss to the endangerment or extinction of plants and animals (301-1, 301-2).

#### Science 4/Science 5 Handbook for Teaching Combined Classes

- <http://www.ednet.ns.ca/files/curriculum/Science4&5CombWEB.pdf>
- **Activity 31: A Focused Field Trip** (p. 63)
  - Prepare for a focused field trip to a local water habitat (e.g., pond, lake, stream, river, marsh) within your community. While at the habitat, have students collect samples of plants and animals that are no longer living. In the classroom, have students examine the specimens using the Intel Play microscope. Research and illustrate a healthy animal living in this habitat, and record the data on Activity Sheet 4: What I Want to Find out about My Habitat, Atlantic Canada Science Curriculum: Grade 4, pages 122–123.
  - **Curriculum Outcomes:** Students will be expected to:
    - identify their own and their families' impact on habitats and describe how personal actions help conserve habitats (108-3, 108-6)
    - identify questions to investigate the types of plants and/or animals at a local habitat using the terms habitat, population, and community (104-6, 204-1)
    - examine and investigate, using various methods and questions, local habitats and their associated populations of plants and animals (204-6, 302-1)

#### Ducks Unlimited Wetlands Education Program, Wetland Ecosystems 1

- <http://www.ducks.ca/assets/2012/06/Grade4-6teacher.pdf>
- **Lesson 3: Wetland Zones and the Cycle of Life** (p. 5)
  - Organize a field trip to a wetland in your area. Have the students use their field trip sheet on page ii of the student journal. Identify some plants and animals found in different zones at the

wetland site and describe the life cycle of these plants and animals. Refer to lesson three in the student journal, pages 7 to 9.

- **Curriculum Outcomes:** Students will be expected to examine and investigate, using various methods and questions, local habitats and their associated populations of plants and animals (204-6, 302-1)

## Focus on Forests

### • Food Forest

- <http://www.focusonforests.ca/lessons/index.php/junior/5>
- Outdoor activity focusing on introducing students to the concepts of producers, decomposers, herbivores, omnivores and carnivores.
- *Through interactive activities, students will come to understand the importance of trees and the inter-connectedness of species contained within the forest food web.*
- **Curriculum Outcomes:** Students will be expected to:
  - *classify organisms and draw diagrams to illustrate their role in a food chain (206-1, 302-3)*
  - *predict how the removal of a plant or animal population affects the rest of the community and relate habitat loss to the endangerment or extinction of plants and animals (301-1, 301-2)*

### • Forest Connections

- <http://www.focusonforests.ca/lessons/index.php/junior/5>
- Demonstrate how features of the forest ecosystem are connected and how changing one thing will impact others.
- *Forest ecosystem composition, structure and function will be examined.*
- **Curriculum Outcomes:** Students will be expected to:
  - *identify their own and their families' impact on habitats and describe how personal actions help conserve habitats (108-3, 108-6)*
  - *predict how the removal of a plant or animal population affects the rest of the community and relate habitat loss to the endangerment or extinction of plants and animals (301-1, 301-2)*

### • Seed Collections

- <http://www.focusonforests.ca/lessons/index.php/junior/15>
- Take class on a 'seed hunt' to collect various different kinds of seeds in the forest and take them back to the classroom to examine them. Discuss similarities and differences and how seeds travel.
- **Curriculum Outcome:** *compare the external features, behavioural patterns, structural, and/or behavioural adaptations for an animal to survive a particular habitat, real or imagined (204-3, 300-1, 300-2, 302-2)*

### • Seed Forecasting

- <http://www.focusonforests.ca/lessons/index.php/junior/20>
- Visit a forest in the spring and look for evidence of how trees produce seed (look for signs of flowering). Compare flowering on coniferous vs. deciduous trees. What will the seeds from these flowers look like?
- Collect seeds in the fall and test their viability (float test, cut test).

- **Shelter Me**
  - <http://www.focusonforests.ca/lessons/index.php/junior/20>
  - A schoolyard habitat and a forest habitat will be investigated and compared, as well as the species found in each location.
  - **Curriculum Outcomes:** Students will be expected to:
    - identify questions to investigate the types of plants and/or animals at a local habitat using the terms habitat, population, and community (104-6, 204-1)
    - examine and investigate, using various methods and questions, local habitats and their associated populations of plants and animals (204-6, 302-1)
  
- **Stumped**
  - <http://www.focusonforests.ca/lessons/index.php/junior/25>
  - The importance of tree stumps and decaying logs to the forest community will be explored.
  - **Curriculum Outcome:** Students will be expected to examine and investigate, using various methods and questions, local habitats and their associated populations of plants and animals (204-6, 302-1)

#### **Natural Resources Education Centre, A New Forest: The Next Generation**

- <http://novascotia.ca/natr/Education/NREC/lessons/new-forest/intro2.asp>
- Covers basic information about trees and their basic needs.
- Set up five different stations in a forest for students to explore:
  - #1 Soil; #2 Space; #3 Seeds; #4 Shelter and Sunlight; and #5 an activity which gives students blindfolds and has them find a particular based on their other senses.
- **Curriculum Outcome:** examine and investigate, using various methods and questions, local habitats and their associated populations of plants and animals (204-6, 302-1)

#### **Four Corners School of Outdoor Education, Distant Destinations**

- <http://www.fourcornersschool.org/lesson-plans/item/134-distant-destinations>
- Much of the lesson is not relevant for Nova Scotian students, but there are parts about how to use a compass that would be. Students could do some compass work in OPDF while doing other activities.

#### **Canadian Wildlife Federation, Project WILD Activity Guide**

- <http://cwf-fcf.org/en/discover-wildlife/education/for-educators/project-wild.html>
- **Microtrek Scavenger Hunt** (p. 20)
  - Students go outside on a “scavenger hunt for wildlife”
  - **Curriculum Outcome:** Students will be expected to examine and investigate, using various methods and questions, local habitats and their associated populations of plants and animals (204-6, 302-1)
  
- **Tracks!** (p. 53)
  - Students make plaster casts of animal tracks.
  - Students will be able to identify common animal tracks.
  - **Curriculum Outcome:** Students will be able to examine and investigate, using various methods and questions, local habitats and their associated populations of plants and animals (204-6, 302-1)

- **Water Plant Art** (p. 62)
  - *Students will be able to identify a variety of aquatic plants.*
  - *Students create artwork from pressed aquatic plants.*
  - **Curriculum Outcome:** *Students will be able to examine and investigate, using various methods and questions, local habitats and their associated populations of plants and animals (204-6, 302-1)*
  
- **Animal Poetry** (p. 85)
  - *Each student or group of students will be able to recognize and experience the inspirational value of wildlife.*
  - *Students go outside to imagine themselves as animals, and then write poems.*
  - **Curriculum Outcome:** *Possible links to Grade 4 English Language Arts curriculum*
  
- **Seed Need** (p. 95)
  - *Students will be able to: 1) explain how seeds are carried by animals; and 2) evaluate the importance of wildlife in contributing to ecological systems, based on this example of seed dispersal.*
  - *Students gather seeds by going outside and wearing socks over their shoes.*
  - **Curriculum Outcome:** *compare the external features, behavioural patterns, structural, and/or behavioural adaptations for an animal to survive a particular habitat, real or imagined (204-3, 300-1, 300-2, 302-2)*
  
- **Environmental Barometer** (p. 98)
  - *Students will be able to: 1) observe and count wildlife in an area; 2) discuss why the wildlife is or is not present; and 3) consider ways in which the presence of wildlife can be seen as an indicator of environmental quality.*
  - *Students go outside to observe and count or estimate wildlife in an area; do the same in another setting to compare findings; and—optionally—make a school “environmental barometer”.*
  - **Curriculum Outcomes:** *Students will be expected to:*
    - *examine and investigate, using various methods and questions, local habitats and their associated populations of plants and animals (204-6, 302-1)*
    - *compare the external features, behavioural patterns, structural, and/or behavioural adaptations for an animal to survive a particular habitat, real or imagined (204-3, 300-1, 300-2, 302-2)*
  
- **Riparian Retreat** (p. 105)
  - *Students will be able to: 1) describe habitat characteristics of riparian areas; 2) identify animals that inhabit them; and 3) state the importance of riparian areas to wildlife and humans.*
  - *Awareness of a riparian zone is created through the use of guided imagery and art work.*
  - **Curriculum Outcomes:** *Students will be expected to examine and investigate, using various methods and questions, local habitats and their associated populations of plants and animals (204-6, 302-1)*
  
- **Water Canaries** (p. 109)
  - *Students will be able to: 1) identify several aquatic organisms; 2) assess the relative environmental quality of a stream of pond based on indicators of pH, water temperature, and the presence of a diversity of organisms.*

- *Students investigate a stream or pond using sampling techniques.*
- **Curriculum Outcomes:** *Students will be expected to examine and investigate, using various methods and questions, local habitats and their associated populations of plants and animals (204-6, 302-1)*
- **The Thicket Game** (p. 137)
  - *Students will be able to: 1) define adaptation in animals; and 2) generalize that all animals make some adaptations in order to survive.*
  - *Students become “predator” and “prey” in a version of “hide and seek”.*
  - **Curriculum Outcome:** *Students will be expected to compare the external features, behavioural patterns, structural, and/or behavioural adaptations for an animal to survive a particular habitat, real or imagined (204-3, 300-1, 300-2, 302-2)*
- **Marsh Munchers** (p. 172)
  - *Students will be able to identify a food web in a salt marsh.*
  - *Students will use body movement and pantomime to simulate the feeding motions of marsh animals and identify their interconnectedness in a food web.*
  - **Curriculum Outcome:** *Students will be expected to classify organisms and draw diagrams to illustrate their role in a food chain (206-1, 302-3).*
- **The Edge of Home** (p. 177)
  - *Students will be able to identify the characteristics of ecotones or overlapping ecosystems in wildlife habitat in or near their communities.*
  - *Students explore the concept of ecotones by visiting places where habitats overlap.*
  - **Curriculum Outcomes:** *Students will be able to:*
    - *examine and investigate, using various methods and questions, local habitats and their associated populations of plants and animals (204-6, 302-1)*
    - *compare the external features, behavioural patterns, structural, and/or behavioural adaptations for an animal to survive a particular habitat, real or imagined (204-3, 300-1, 300-2, 302-2)*
- **Oh Deer!** (p. 206)
  - *Students will be able to: 1) identify and describe food, water, and shelter as three essential components of habitat; 2) describe the importance of good habitat for animals; 3) define “limiting factors” and give examples; and 4) recognize that some fluctuations in wildlife populations are natural, as ecological systems undergo a constant change.*
  - *Students become “deer” and components of habitat in a highly involving physical activity.*
  - **Curriculum Outcome:** *Students will be expected to examine and investigate, using various methods and questions, local habitats and their associated populations of plants and animals (204-6, 302-1)*