



Nature NB Program Kits:

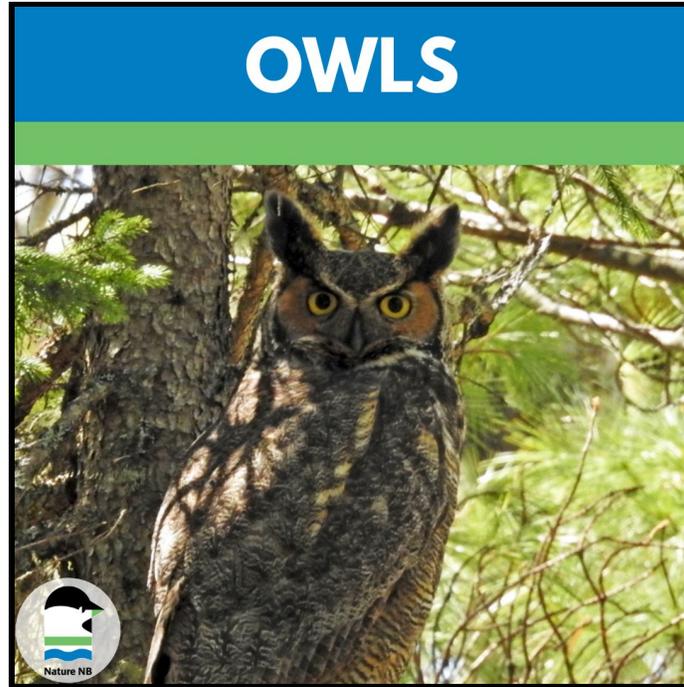


Table of Contents

[Introduction](#)

[Program Curriculum Links](#)

[Activity 1: Kick-the-Can, Owl Style](#)

[Activity 2: Owls and Crows](#)

[Activity 3: Snow Owls](#)

[Activity 4: Build an Owl](#)

[Contact Us!](#)



Introduction

- The activities in this kit will help you introduce concepts like adaptations, predation, and food chains by using owls as a model.
- The kit is written primarily for New Brunswick educators. The information and activities in this kit are tailored to the level of grades K-4, with specific curriculum links listed.
- The activities in this kit are organized to be held in succession, inspired by Joseph Cornell's Flow Learning Model¹.
 - A game to rid some energy
 - An activity using physical senses
 - A direct experience with nature to awaken love/ importance
 - A quiet, focused reflection activity.

With that said, each activity works as a stand alone, so feel free to pick and choose the activities that fit best with your classroom.

Program Curriculum Links

Grade 1

- **1.2.1** describe how plants and animals meet their needs in a given environment

Grade 2

- **2.1.1** describe growth and development of familiar animals during their life cycle

Grade 4

Science

- **300-1** compare the external features and behavioural patterns of animals that help them thrive in different kinds of places
- **302-2** describe how various animals are able to meet their basic needs in their habitat
- **302-3** classify organisms according to their role in a food chain

Grade K - 3

Language Arts:

- begin to develop strategies for prewriting, drafting, revising, editing, and presenting

¹ [Flow Learning Model](#): Step 1: Awaken Enthusiasm Step 2: Focus Attention Step 3: Direct Experience Step 4: Share Inspiration



- use writing and other forms of representing to convey meaning (communicating messages, recounting experiences, expressing feelings and imaginative ideas, exploring learning)
- use writing and other forms of representing for a variety of functions

Visual Arts

- **K-2.2.3** using a variety of materials, visually communicate stories, ideas, and experiences
- **K-2.4.4 & 3.6.3** use descriptive language to talk about their own work and that of their peers
- **3.1.3** visually communicate stories, ideas, and experiences, using a variety of materials
- **3.7.3** make choices and decisions about tools and materials in the creation of art objects

Grade 4 - 5

Language Arts:

- create written and media texts, collaboratively and independently, in different modes (expressive, transactional, and poetic) and in a variety of forms
- develop a range of prewriting, drafting, revising, editing, proofreading, and presentation strategies
- experiment with language, appropriate to audience, purpose, and form, that enhances meaning and demonstrates imagination in writing and other ways of representing
- make language choices to enhance meaning and achieve interesting effects in imaginative writing and other ways of representing

Background Information

Introduce your class to the animal adaptations and behaviours using owls as a model species. Owls fill important roles in the ecosystems they live in. Just like wolves, foxes, and bears, owls can be top predators. By providing a top-down control of prey populations, owls are critical for keeping everything in balance! Some key concepts that will be covered in this education kit are:

- Food Chains
- Predator and Prey Dynamics
- Adaptations

Key terms to be defined:

Food Chain: A food chain is made up of the biotic (living) elements in an ecosystem, and represents the transfer of energy from one animal to another. Just like us, animals need to eat to survive, and it is helpful to scientists to record what kind of interactions are happening when animals eat. At the bottom of a food chain is always a primary producer (plants), and each step passes on energy to the next. We use food chains to visually illustrate what's happening in an



ecosystem because it is behaviour that all animals share. No matter how big or small, everyone has to eat!

Predator: A predator is an animal that hunts and eats another animal as food. Predators can be carnivores (animals that eat animals) or omnivores (animals that eat animals and plants). Predators often have special behaviours and adaptations to their bodies to help them be more successful while hunting their next meal.

Prey: A prey animal is hunted and eaten by a predator. Often, prey species are herbivores (animals that eat plants). Herbivores have no adaptations to hunt other animals, so they eat plant material (from the bottom of the food chain). It is important to keep in mind that some animals aren't at the very bottom, or at the very top of the food chain. Instead, they're found somewhere in the middle- meaning they are predators in some cases and prey in others.

Adaptation: A physical feature or behaviour that helps a living thing to survive in its environment. Some examples are: 1) animals with colours that blend into the environment (camouflage), 2) carnivores having sharp teeth to eat meat, 3) prey (like deer) living in herds / groups for added protection against predators, 4) animals that put on weight in the autumn and hibernate during the winter, 5) animals that grow longer fur in the winter.

Nocturnal: Awake and active at night. Many animals are nocturnal, including owls, bats, raccoons, foxes, skunks, and cats.

Activity 1: Kick-the-Can, Owl Style

Materials: milk or water jug filled with rocks and sealed at the top

Location: outdoors, preferable with trees or other hiding spots

Time Required: 15+ minutes

Activity description:

Students will represent either the predator (owl) or prey (mice or other owl prey as decided by the class). The students will play rounds of kick-the-can to learn about the predator-prey relationship and owl biology.

Owl biology:

Introduce the basics of owl biology before playing the game.

- Owls are predators, meaning they hunt and eat animals to survive. The animals that are hunted are called prey. Owls prey on small animals like mice, snakes, frogs, weasels, bats, shrews, and small birds.
- Owls (like other birds) have beaks and do not have teeth so they can't chew their food. They tear off pieces of larger prey and they swallow small prey whole.



Nature NB Program Kits: Owls

- Because they swallow a lot of prey whole, they end up swallowing a lot of fur, feathers, claws, and bones. These things cannot be digested!
- Owls have two stomachs.
 - The first one is more similar to our stomach. It makes stomach acids and different enzymes; these are things that help break down the soft parts of the food, like the skin, muscle, and fat.
 - The second one is called the **gizzard**. It does not make any acids or enzymes and does not break down food. It acts like a filter to collect all the things that can't be digested (like fur and bone). The gizzard is a very muscular stomach, and squeezes all the fur, bone, teeth, feathers, and claws into a pellet. It's like a trash compactor!
 - A few hours after eating, the owl will **regurgitate** (throw up!) the owl pellet, kind of like a hairball that a cat might regurgitate! If you cut open an owl pellet, you can find all the bones of the animals the owl ate!
 -

Note to educator: Nature NB has owl pellet dissection kits available on occasion. Contact us for more information.

Instructions:

This game is very similar to traditional kick-the-can.

Determine the boundaries and decide on an area to be the owl's stomach (aka the can). The student who is "IT" will be Owl (the predator). The rest of the players will be the mice (or other owl prey as desired).

Owl will stand by the jug and count while the mice/prey run and hide within the boundaries of the game. After Owl is done counting, they can start hunting prey! Owl's goal is to tag as many prey as possible while protecting the jug. If tagged, the prey go to the owl's stomach (stand by the jug).

If one of the (not-tagged) prey gets to the jug and kicks it, all of the tagged prey are freed! (In other words, the owl has regurgitated their pellet!) When the prey kicks the jug, they shout KICK-THE-CAN and the game starts over with a new Owl. Alternatively, the game ends when the Owl manages to tag all the prey.

Activity 2: Owls and Crows

Materials:

- Pylons, ropes, or other markers
- List of true/false questions



Location: Outdoors or indoors with large running area

Time Required: 15+ minutes

Background information:

The idea for this game stems from how owls and crows react to each other. Owls are nocturnal (active during the night) and hunt alone, while crows are diurnal (active during the day) and form groups. However, when owls and crows meet, they react very aggressively towards each other. Owls have been known to hunt crows who are out at night and crows have been known to circle and harass owls who are out in the day.

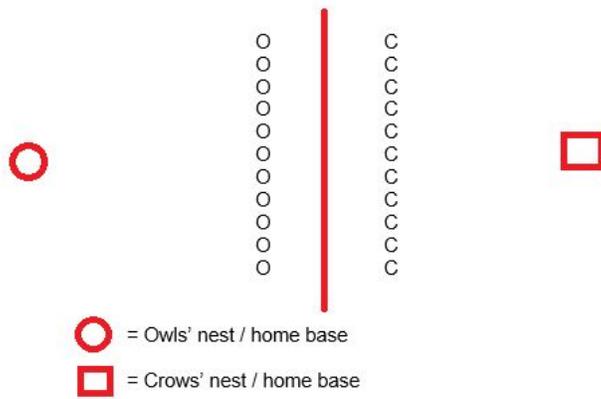
Activity Description:

Students will run toward one end or the other of the area, depending on the answer to a true-or-false question. They will try to either tag members of the opposite team, or escape being tagged and reach their “nest”, or home base.

This activity is great as a form of review for any subject.

Instructions:

Use a rope or pylons to form a line and then separate students into team Owl and team Crow. Each team will start on one side of the line and face each other, a few feet back from the line. Set up a marker to act as each team’s “nest” or home base, a least a few meters behind each team. See the diagram below for game set-up.



Read out a true-or-false question. If the question is true, Owls chase the Crows; the Owls run forward and the Crows turn around to try to get to their nest before they are tagged. Any Crow that is tagged joins the other team as an Owl. If the question is false, Crows chase the Owls; the Crows run forward and the Owls turn around to try to get to their nest before they are tagged. Any Owl that is tagged joins the other team as a Crow. Repeat with as many questions as desired.



Possible follow-up:

The number of owls and crows probably changed over the course of the game. Describe how these changes might mimic real-life population dynamics?

i.e. If owls catch crows (or other prey), they will have a better chance to survive and have more owl babies, therefore more owls!

**This activity has been summarized & adapted from Joseph Cornell's book "Sharing Nature With Children" (1998).*

Activity 3: Snow Owls

Materials: none

Location: Outdoors with snow

Time Required: 15-30 minutes

Background information:

Owls have excellent hearing. Some owls can even hear voles and mice running under the snow in the winter and will swoop down towards the noise, capturing the prey through the snow. This leaves behind a distinctive owl wing print, which can sometimes look like snow angels.

Activity Description:

Instead of snow angels, make snow owls! Students can use their hands or whole bodies to make an owl print similar to these:



Have students invent (or write) a story that goes along with their snow owl. What kind of prey was the owl hunting? What kind of owl was it? Was the owl successful or did the prey get away? What contributed to the prey getting eaten or escaping? Try writing the story from each perspective (predator and prey).



Activity 4: Build an Owl

Materials: Natural materials, collected by students

Location: Outdoors

Time Required: 20 minutes

Background information:

Owls have very distinct features that make them easy to recognize and distinguish from other birds. Most of these features have to do with special adaptations the owl needs to survive. These adaptations are specific to the owl's way of life: as a predator who hunts at night.

Owl features:

1. Big eyes - Owls have big eyes because they are nocturnal and hunt in the dark. Their big, round eyes collect and absorb as much moonlight as possible. They can see much better in the dark than a human can!
2. Forward eyes - Owl eyes are close together and forward on the head. This creates better binocular vision, meaning owls have great depth perception and can accurately estimate how far away a prey is.
3. Talons - Owls have long, sharp claws called talons. These are used to catch and hold onto prey.
4. Hooked beak - Owls have a sharp, hooked beak that they can use to tear flesh from their prey.
5. Facial disc - Some feathers of the owl's face make a concave disc (concave means curves inward, like a bowl). This disc helps funnel sounds to the owl's ears, giving them the best hearing in the bird world. Some owls can even hear rodents *under* the snow!
6. Serrated feathers - Owl wing feathers are serrated; they have a jagged, tattered, "fluffy"-looking edge instead of a smooth edge like in other birds. This decreases the sound made when flapping their wings. Owls are silent flyers and prey often won't hear them coming!

Activity Description and Instructions:

Students will use natural materials to create an owl mosaic. This can be done as a class working together to make one owl, or individually or in small groups each making their own owl.

If creating one owl as a class, go on a short walk together to collect the materials needed to make your owl. If working individually or in groups, give students time to collect materials within your boundaries. Before collecting materials, remind them of the owl features they need to create: e.g. big eyes, hooked beak, long talons, fluffy feathers.

Possible follow-up:



Nature NB Program Kits: Owls

Discuss adaptations in other animals and create natural mosaics of them as well.

Discuss the adaptations that an owl's prey has to avoid being eaten. (e.g. good sense of smell, can move or change direction quickly, avoidance / hiding behaviours)

Contact Us!

If you've used our program kits we would love to hear from you! Please email programs@naturenb.ca with feedback on your experience.

This program kit was developed with generous funding by:



Natural Sciences and Engineering
Research Council of Canada

Conseil de recherches en sciences
naturelles et en génie du Canada

