Nature NB Program Kits:

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Introduction

■ The activities in this kit will help you introduce concepts like predation and food chains by using birds 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 1-5, with specific curriculum links listed.
■ The activities in this kit are organized to be held in succession, inspired by Joseph Cornell's Flow Learning Model[1].

- ➔ 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 3

Science

- ➔ **200-3** make predictions, based on an observed pattern
- ➔ **201-5** make and record relevant observations and measurements, using written language, pictures, and chart
- ➔ **202-4** construct and label concrete-object graphs, pictographs, or bar graphs

Grade 4

Science

- ➔ **204-3** state a prediction and a hypothesis based on an observed pattern of events
- ➔ **205-5** make observations and collect information relevant to a given question or problem

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

- ➔ **205-7** record observations using a single word, notes in point form, sentences, and simple diagrams and chart
- ➔ **206-2** compile and display data, by hand or by computer, in a variety of formats including frequency tallies, tables, and bar graphs
- ➔ **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 5

Science

- ➔ **204-3** state a prediction and a hypothesis based on an observed pattern of events
- ➔ **205-5** make observations and collect information relevant to a given question or problem
- ➔ **205-7** record observations using a single word, notes in point form, sentences, and simple diagrams and chart
- ➔ **206-2** compile and display data, by hand or by computer, in a variety of formats including frequency tallies, tables, and bar graphs

Grade K - 3

Language Arts:

- ➔ begin to develop, with assistance, some ways to make their own notes (e.g., webs, story maps, point-form notes)
- ➔ create written and media texts using a variety of forms

Grade 4 - 6

Language Arts:

- ➔ experiment with different ways of making their own notes (e.g., webbing, jot notes, matrix)
- ➔ expand appropriate note-making strategies from a growing repertoire (e.g., outlines, charts, diagrams)

Background Information

The objective of this program kit is to introduce your class to the diversity of birds that live in New Brunswick and expand their knowledge on the types of feeding behaviours in local species (birds you see at your bird feeder = herbivore or omnivore, while birds you encounter in wild places can be omnivores and carnivores). Birds fill important roles in the ecosystems they live in. Just like wolves, foxes, and bears, birds can be top predators. By providing a top-down control of prey populations, birds of prey are critical for keeping everything in balance! Some key concepts that will be covered in this education kit are:

- ➔ Birds of New Brunswick
- ➔ Food Chains

- ➔ Predator and Prey Dynamics
- ➔ Overpopulation

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.

Overpopulation: In healthy ecosystems, the number of prey and number of predators needs to be in balance. When one species is overpopulated, it means the ecosystem they live in cannot sustain them; either there is not enough food sources, water, shelter, or space for them, and not enough predators to keep their numbers in balance with their environment.

Activity 1: Hawks and Sparrows (Freeze Tag)

Materials: n/a
Location: indoor or outdoors
Time Required: 20 minutes

Activity Description:
Students will represent either the predators (hawks) or prey (sparrows) in an ecosystem and play rounds of freeze-tag to learn about the predator-prey relationship and to model how the populations of predators and prey change over time.

Instructions:

Line up all students (except 2) at the end of a large area (the “habitat”). These students will be the prey (sparrows). The other 2 students will be the predators (hawks) and will begin in the centre of the habitat.

When the round starts, the sparrows must fly to the other end of the field, while avoiding getting eaten (tagged) by the hawks. If a sparrow is tagged, they freeze until the round is over. Each round of tag represents one year.

A hawk must tag at least one sparrow in order to survive. If a hawk is not able to tag anyone, then they become a sparrow the next round / year (because if a hawk doesn’t eat, it dies and there will be fewer hawks to kill sparrows, which means more sparrows have lived to reproduce and have baby sparrows). Sparrows who were tagged become hawks in the next round / year (because if hawks are able to eat sparrows, they will survive and reproduce to make more hawks).

Additional Follow-up:
Graphing exercise: the teacher can record the data from each round/year and students can complete a follow-up graphing exercise to visualize how the bird population changes over time. Record the number of hawks and sparrows at the beginning of the game and at the end of each round.
Possible areas of discussion: food webs, predation and avoidance, how animal populations can change over time
Question for extension: What other things affect a population besides predation? (e.g. resource availability, disease/illness, migration in or out of the area, weather).

Activity 2: Nest Building

Materials: mud + collected natural elements (e.g. twigs, grass, moss, bark)
Location: Outdoors
Time Required: 30 minutes

Background information:
A nest is something a bird makes during the reproductive / breeding season. After the baby birds have fledged (learned to fly and left the nest), the nest is no longer used by the parent birds. Nests are not “homes” for birds; they are purely a place to keep eggs safe and also act as nurseries for babies!

Activity Description:
Students begin by collecting a variety of natural materials they think would be useful to construct a bird’s nest. Students will then use these materials to weave together a bird’s nest; mud may also be useful to keep the nest materials together. Encourage students to think like a parent bird

when constructing their nest - what type of materials will they need to make the nest comfortable? To make the nest sturdy enough? To make the nest camouflaged or well hidden from predators?

After the students finish the nests, they can discuss how they think their nest will or won't keep eggs / baby birds safe.

Possible follow-up: After students have finished their nests, they can test them in different ways. They can see if they will collect water or if the water will drain away (how would this affect the birds / eggs?) They can leave the nests out and see if they can withstand the wind or other weather.

Activity 3: Birdwatching

Materials: pencil and paper
Location: Outdoors (along a trail if available)
Time Required: 30 minutes

Activity Description:
Take your class on a birdwatching walk around the school grounds or along a nearby trail, if possible. Each student should have pencil and paper, or a journal, to record their observations. Students should be encouraged to draw the birds and note different physical features like colours, shape, spots or lines, so that they can identify the birds later with the help of an identification guide or online bird guide.

During the walk, pay attention to where you are seeing birds and what they are doing. What habitats are you finding them in? You might be seeing different species in different places; for example, you may see pigeons in the parking lot, robins on the lawn, and chickadees in the trees. Talk about why you are observing different birds in different places. Is it to do with what they eat? Where they make their nests? Shelter from the weather?)

Older students can also make predictions about what species they might expect to see (given the season) or how many birds in total they expect to see (based on their past experiences on the school grounds). You can repeat the activity in different seasons and graph / compare the different species or bird abundance observed.

Activity 4: Listening to nature

Materials: Paper and writing utensils
Location: Outdoors
Time Required: 15+ minutes

Activity Description:
Each student can choose their own special spot in nature to sit, listen and reflect. Students can be encouraged to listen to bird song and other nature sounds as they journal.
Some suggestions:

- Students can relax and decompress by enjoying nature sounds and writing how the sounds make them feel, or about their feelings in general.
- Students can listen to bird song and make up a story about the birds. Imagine what the bird is communicating and make up a dialogue.
- Students can learn about onomatopoeia and practice phonetics by trying to write down the sounds birds make (e.g. “chicka-a-dee-dee-dee”, some birds sound like “zee-zoo-zoo” or whistling noises)

Additional Resources

Nature NB’s Bilingual Common Birds of New Brunswick Identification Guide

Nature NB’s Bird Bingo

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.

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