Ontario's Backyard Birds

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ACTIVITY DESCRIPTION:

A mallard duck swims gracefully in a pond. A black-capped chickadee darts back and forth from a birdfeeder. A flock of Canada geese fly overhead in their familiar V-formation. Most Ontario children are familiar with these scenes, but can they identify these birds by name? What habitats do these birds require? What behaviours are the birds displaying? Birds are a logical starting point when introducing children to Ontario's biodiversity as birds are active, vocal, often brightly coloured, and display a range of interesting behaviours.

Globally, there are over 10 000 identified bird species, but don't let this overwhelm you and your students! Below are five activities to help your young students develop into young birders. In this lesson, students will explore bird classification and use the free Cornell Lab *Merlin Bird ID* app to support bird identification. Students will then have the chance to assess biodiversity in different habitats, design bird feeders to appeal to a specific species, and participate in a citizen science program.

MATERIALS NEEDED:

- Chalkboard or equivalent
- Notebooks
- Digital devices with internet access and built-in cameras
- Supplies and tools to build student-designed bird feeders
- Variety of bird foods

TIME NEEDED:

- Activity 1: 1 class period
- Activity 2: 2 class periods
- Activity 3: 1-2 class periods
- Activity 4: 3 class periods with daily observations
- Activity 5: depends on citizen science project

CURRICULUM CONNECTIONS:

Grade 4: Understanding Life Systems: Habitats and Communities

- 1.1 analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts
- 3.7 describe structural adaptations that allow plants and animals to survive in specific habitats

Grade 6: Understanding Life Systems: Biodiversity

- 2.2 investigate the organisms found in a specific habitat and classify them according to a classification system
- 3.1 identify and describe the distinguishing characteristics of different groups of plants and animals, and use these characteristics to further classify various kinds of plants and animals

TEACHING PROCESS AND CLASS ACTIVITIES:

ACTIVITY 1: CATEGORIZING AND SORTING TYPES OF BIRDS

- Students start by cooperatively creating a list of well-known bird species (preferably ones that everyone in the class will be familiar with). Explain how scientists group birds into categories to better understand their relationships, similarities, and differences. Working in small groups, have the students separate the birds into two to five groups based on criteria that the group considers to be important (eg. colour, size, habitat, diet, etc.). Have the groups compare their different categories.

- <u>For Discussion:</u> What are the strengths and weaknesses of the categories generated by the class? What characteristics might scientists use to classify birds?

- Explain how, using scientific classification, scientists have divided birds into orders (a taxonomic rank used to classify organisms). Show the students some examples of these orders (e.g., songbirds, owls, woodpeckers, ducks etc.). As a group, help the students sort their birds into their proper orders. Dividing birds into groups like this is an excellent skill to learn because printed field guides are divided up by bird group. Mastering this skill will make using guides (print or digital) easier.

ACTIVITY 2: MASTERING THE CORNELL LAB *MERLIN BIRD ID APP*

- The *Merlin Bird ID* app allows users to either take a photo of a bird or follow a step-by-step process to select options based on observed identification features. These two identification options let students practice bird identification by examining key identification features in birds.

- Download the '*Merlin Bird ID* by Cornell Lab' app from your device's app store. The app is free and

compatible with iOS and Android devices. Practice using the app with the following two activities.

- *Activity 2a)* Each student selects a bird (either from a book or from a live observation) and sketches/describes it. Try using the *Merlin Bird ID* app to find the bird's identity using the bird's relevant features. Working with a partner, exchange drawings/descriptions and identify the partner's bird.

- *Activity 2b)* Have the students go outside and use the *Merlin Bird ID* app to photograph and identify birds in their school's neighbourhood.

ACTIVITY 3: VISITING DIFFERENT HABITATS

- Once students have practiced using the *Merlin Bird ID* app, the next step is to explore its value as a scientific tool. Select a variety of local habitats (e.g., the school's playground, a manicured park, or a conservation area). In each habitat, students will observe and identify as many birds as possible using the app. In a field notebook, students record their findings and observations about behaviour, location, weather etc.

- Once back in school, student will generate a master list of all the birds seen in the various habitats.

- For Discussion: Students compare and contrast the birds they saw in the different habitats. Which birds were common to each location? Which habitat had the most species?

What adaptations did you see for each habitat? How have humans impacted these environments? Did this impact bird biodiversity?

- Assessment: Students write a field report detailing the procedure, their findings, and their conclusions about the biodiversity supported in their local habitats and the impact that humans have had.

ACTIVITY 4: FEEDING EXPERIMENT

- Working in groups, students research the habitat requirements, behaviour, and diet of a local bird species that would likely be seen at a bird feeder.

- Students work to design and build a bird feeder to appeal to their specific species.

- Working with the students, find suitable places in the schoolyard to install the bird feeders. Stock the feeders with food the students deem the most suitable.

- With the bird feeders in place, students make daily observations of feeder use. Use the *Merlin Bird ID* app to identify all the birds that make use of the feeder.

- For Discussion: Which bird species were observed at the feeders? Were the feeders successful? Why or why not? How might the feeders be improved? Which food was consumed the most?

- Assessment: Each group creates an advertisement and/or presentation about their feeder as if it were available for sale.

ACTIVITY 5: BECOMING CITIZEN SCIENTISTS

- Once students have mastered the basics of bird observation and identification, they are ready to participate in a citizen science program. By participating in a citizen science program, students will be able to contribute valuable data to aid in bird research and conservation. Programs vary by region, but listed below are three good options.

- 1) Project FeederWatch (https://feederwatch.org/). This project runs from November to April. Over the course of the winter, participants periodically record the birds they see at their feeders.

- 2) The Christmas Bird Count (https://www/birdscanada.org/). This project, started in 1900, is North America's longest-running citizen science project.

- 3) The Great Backyard Bird Count (http://gbbc.birdcount.org/). Launched in 1998, this citizen science project was the first to collect and display online data in near real-time. This project takes place each February.

For more resources and activities about birds or Ontario's biodiversity, please visit the Biodiversity Education and Awareness website at https://biodiversityeducation.ca/.