Community Science

Pollinators

Lesson 11: Pollinator Walk

Duration: 60+ minutes **Location:** Outdoor

Overview

In this lesson students will conduct birding in their schoolyard/community looking for and recording the local pollinator species into iNaturalist that they identify through the SEEK by iNaturalist app and guidebooks. Students need to complete the in-classroom lessons,' How to Identify a Species' and 'What is Citizen Science' prior to this lesson.

Learning objectives

By the end of the session, students will be able to:

- Identify one local pollinator species;
- Reflect on the scientific process of collecting and analysing data;
- Understand one or more environmental conditions that threaten bird survival; and
- Understand one or more actions they can take to help local pollinator populations.

Curriculum links

Grade: 6

Science, Trees & Forests

- Identify reasons why trees and forests are valued. Students meeting this expectation should be aware that forests serve as habitat for a variety of living things and are important to human needs for recreation, for raw materials and for a life-supporting environment.
- Describe kinds of plants and animals found living on, under and among trees; and identify how trees affect and are affected by those living things

Social Studies, Citizens Participating in Decision Making

- Analyse how individuals, groups and associations within a community impact decision making of local and provincial governments by exploring and reflecting upon the following questions and issues.
    - How individuals, groups and associations within a community participate in the decision-making process regarding current events or issues (i.e., lobbying, petitioning, organizing and attending local meetings and rallies, contacting elected representatives).

Equipment required

- ☐ Tablets/iPads
- ☐ Observation sheet or nature journal
- ☐ Writing utensil
- ☐ Clipboard (optional)
- ☐ Binoculars
- ☐ Appropriate outdoor clothing
- ☐ Bird flash cards (choose 10+ from the selection) and or pollinator laminated images
- ☐ Clothespins
- ☐ ID guidebooks or pamphlets

Additional information

This hike is focused on finding birds, as birds are a very important species to pollination both locally and around the world. While you may find other pollinators such as bees and butterflies, birds should be your main focus. It is recommended that you use the tablet/iPad app, Merlin Bird ID (downloaded already) to identify bird species that you are unfamiliar with. Find a quick instruction video here or by typing in “Explore Merlin Bird ID App – Essential” into YouTube.com and clicking on the video similarly named.

Students will need to know how to use SEEK by iNaturalist app and binoculars. A basic understanding of climate change and hypotheses would be an asset.

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Lesson plan

Time	Activity	Equipment Needed
10 minutes	Identify the area that you will be taking students. For instance, this can be a stationary observation in the schoolyard or a traveling walk through the community. To ensure that students have something to find, take the provided laminated bird/pollinator images and hang them in your study area. As an option, post a sign requesting all students do not touch or move these images. Gather the students together and ask them the question, are birds pollinators? Are all bird species pollinators? *Birds are pollinators, but not all birds pollinate. For instance, hummingbirds, sparrows, robins and other smaller birds that visit flowers and plants for sources of food. As a result, they spread pollen around and are pollinators as a result. However, other birds such as eagles and osprey do not use plants for food and are not likely to be very good at spreading pollen, so are not pollinators.* Then, introduce that you will be exploring the local area to look for bird species which are likely to be pollinators. Have students create a guess/hypothesis based on their personal experience in their schoolyard/community. How many and what type of pollinator birds do they believe they will find while birding? Write them down and post them in the classroom to revisit after. Frame the day as a bird pollinator field study where they will be attempting to identify as many pollinator birds as possible.	• Paper or white board • Writing utensil • Animal images • Clothespins • ID guides or pamphlets
10 minutes	Create smaller groups of 2-5 students. Within each group, designate and describe the following roles.	• Tablets

	• Observer: will be using the binoculars and their naked eye to look for birds in all different areas (trees, the sky, the grounds, bushes, etc.) • Recorder: will be using the observation sheet or nature journal, clipboard (optional), writing utensil and be drawing or writing down the birds their group observers and 'I Wonder' questions that come up. • Identifier: will be using the ID guide and or tablet/iPad with Merlin Bird ID to help the group identify any birds observed. Depending on your group size and needs, there can be two or more students in each role. As well, students can periodically (every 10 minutes for instance) switch roles so everyone has an opportunity to experience each role and equipment. Also, you can repeat this activity on different days, switching the roles each time you go. Hand out the following equipment: • Binoculars • Writing utensil • Observation sheet or nature journal • ID guidebook or pamphlet • Tablet/iPad • Clipboard (optional) Before leaving, have the group review birding behaviour best practices. For example; • move slowly, • move as a group, • do not make loud sounds, and • create a quiet 'stop, look and listen' hand signal.	• Observation sheet or nature journal • Writing utensil • Clipboard (optional) • Binoculars • Appropriate outdoor clothing

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15+ minutes	Starting birding. If you have selected a travelling field study, then ensure that you have one adult in the front and back. Ideally, you will have one adult per small group to assist with observations, identifications, and recordings. If you have selected a stationary field study, then ensure that groups are sitting together but spaced far enough apart in the study area to reduce chatter. Travelling between stationary groups and providing prompting questions and tips is important to keep group focus. Examples are, '*have you looked in the bushes or trees for birds?', 'while we are waiting for a bird, is there any 'I Wonder' questions you have thought of',* etc. As students sit or walk around, they will encounter the bird cards. Discuss beforehand that students are to observe (but not touch) the images, observe them from 5 m away (you can have a discussion as to how far this is), use their guidebooks and/or tablets/iPads to identify the species, and record the species in their observation sheets or nature journals. This engages students when birds are not being sighted and allows them to practice their birding skills. While birding, que students to look for nests and birds in different areas of the trees/forest. E.g., House sparrows may be in bushes that occupy the shrubbery layer. Magpies may be building their nest in the branches of trees which help to make up the understory.	• Tablets/iPads • Observation sheet or nature journal • Writing utensil • Clipboard (optional) • Binoculars • Appropriate outdoor clothing • ID guide or pamphlets • Animal images • Clothespins

	This will be especially important if you are birding in the spring and summer. Some of these younger birds will look different than their adult life stages, Merlin Bird ID will have images of most birds during this stages, they are labelled as 'immature' or 'juvenile'.	
5 minutes	During the field study, have students individually, in their birding group, or as a class, identify threats to bird survival in their community. Ensure that you focus on how trees and forests are an important part of bird survival in urban environments. (*E.g., birds have less habitat when houses are built on top of forests.)* Write ideas down in the observation sheets or nature journals. Revisit this brainstorm list after the field study. This mini-activity can be done as a birding break activity or facilitated as an on-going 'scavenger hunt' during the field study.	• Observation sheet or Nature journal • Writing utensil
10 minutes	Review real life bird sightings together as a big group (not the laminated images). Curate a class list of pollinating birds seen (make sure they have been seen by at least two individuals and each agrees with the identification). If you are unsure, discuss how you could find out if this bird is a pollinator. *Books, the internet, etc.* Log onto iNaturalist on a tablet (outside, Wi-Fi permitting) or in the classroom (on the smartboard) and submit your birding checklist together as a group.	• Tablet • Smartboard • Computer

15 minutes	Revisit the hypothesis the class made about how many and what type of pollinator birds they would see on the field study. Compare this to the bird list that you curated and either prove or disprove their hypothesis. Some suggested follow-up questions are below.
	• We didn't see as many birds as we hypothesized, why do you think that is?
	  ○ How could we invite more birds to our schoolyard/community?
	• We saw more birds than we hypothesized, why do you think that is?
	  ○ Do you think these birds live here all year long, why or why not?
		• Observation sheet or nature journal
		• Writing utensil

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	Revisit the list of threats and obstacles students wrote down during the field study. (O*utdoor cats, no food, no shelter, not enough trees/bushes, cars, the heat/cold, etc.*) Create a group list on the board then discuss how students can participate in the decision-making process of overcoming these obstacles. Brainstorm ideas on how the students and others can help change those threats/obstacles and help birds. Some suggested follow-up questions are below. • Do you think these threats/obstacles are only in our area, or are they common around the world? (M*any of these problems, like habitat loss and climate changes are happening all around the world and impacting all bird species.)* • If we wanted to see changes in our local habitat/neighbourhood, how would we go about making these changes happen? (*Talk to community association leaders, do some schoolyard changes, make changes in our backyards. Write our Councillor or Mayor, create a petition, attend a protest/rally, etc.*) Share some of the 'I Wonder' questions and observations that the group had (if applicable).	