

Birding Expedition

Class Length:

1 hour 15 minutes

Class Size:

12-20 students

Class Location:

Teva Main Building

Materials:

- Binoculars
- Bird Guidebooks
- Hawk feathers and wing samples

Objectives:

- Students will make observations about the habits and habitats of local birds.
- Students will explore how they can support bird populations in their home communities.

Standards:

- *2-LS4-1* Make observations of plants and animals to compare the diversity of life in different habitats.
- *3-LS4-3* Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.
- *3-LS4-4* Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.
- *3-LS3-2* Use evidence to support the explanation that traits can be influenced by the environment.
- *3-LS4-2* Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.
- *5-LS2-1* Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
- *MS-LS2-1* Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
- *MS-LS2-4* Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
- *MS-LS2-5* Evaluation competing design solutions for maintaining biodiversity and ecosystem services.
- *MS-LS4-4* Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.

- *HS-LS2-7* Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.
- *HS-LS4-4* Construct an explanation based on evidence for how natural selection leads to adaptation of populations.

Class Set-Up:

- Set out binoculars around table for each participant.
- Make sure bird feeders are full.
- Divide whiteboard in sections: Food, Shelter/Habitat, Water. Flip board: What do birds need?
- Set field guides to the side to grab when you return from the expedition.
- Put Hawk in white box if taking out during end of class (alternative – participant can be brought outside of her enclosure to view)

Safety Precautions:

- If/when the hawk is in the room, everyone in the room must be sitting down on a stool, with their hands in their lap, and QUIET.

Introduction: (15 minutes)

- Invite the students to come into Teva and grab a seat at one of the tables that has been set out with binoculars.
- Allow 5 minutes for students to play with binoculars and learn how they adjust.
- Ask, using what we know what basic things birds need to survive? Once they've answered the categories of food, shelter, and water flip the board and ask for example of these things and write down ideas.
 - Where might we find birds?
 - How best to see them? (i.e. how to act, sound, etc.)

Go Birding!: (30 minutes)

- Explain that we will be exploring areas where we are likely to find birds and will all move along together with the facilitator on the expedition.
- Form birding buddy groups. No one is to go off on their own and all groups must stay within eyesight of chaperones. However, your group may split off at our various stops to look for birds.
- Lead the students around Tamarack Lake and surrounding areas near bird feeders allowing them to split off into groups.

Field Guides: (10 minutes)

- Return to the class room, collect binoculars, and have students take their seats.
- Have the students pair up and pass out field guides.
- Have the students look through the books for what birds they saw.
- Think, pair, share:
 - Was it male or female?

- What does it eat?
- Where does it live?
- Does it migrate?
- Predator or prey?
- What do you find interesting about this bird?

Raptor Time: (10 minutes)

- If any students have gotten up and moved around since the beginning of the program, ask them to return to their seats and reiterate the importance of being *silent* and *still* while the hawk is in the room.
- Pass around hawk feathers and wing samples.
- After all students have taken a seat and put their hands in their laps, bring the hawk out.
- Give the hawk a minute or two to get used to the group (and vice versa) before taking observations from the group.
- Using what we've learned so far today, what scientific guesses can you make about our bird?
- Explain to the group that this bird IS NOT A PET. We have this bird at Tamarack because we have an official permit from the US Government to take care for this bird after she was hit by a car and could no longer survive in the wild. Why do you think that a bird like this would need to be protected by the federal government? Why wouldn't this bird make a good pet?
- Generally, the federal government protects things that are *very important* to our world, or that need our help. Why would the federal government want to protect hawks and other raptors? Why do you think they are so important? Why do you think raptors might need our help right now?
 - Raptors are important because many of them are apex predators, which means they are the top of the food "chain," and whatever happens to them can create much bigger consequences down the line—over population, etc.
 - Raptors need our help because many of the things we do as humans affect them very deeply. Habitat destruction, unclean water, trapping, pesticides—these things are potentially more devastating for raptors than they are for smaller, more numerous creatures.
- Take time to answer questions about what the hawk's life at Tamarack is like. What does she eat, where does she live, etc.

Debrief: (10 minutes)

- After you've put the hawk away, refocus the group and spend a few minutes debriefing the program.
- What kinds of things do we do as individuals that affect birds? What about our local community? Our state? Our country?
- What could we be doing to make sure the birds in our ecosystems are healthy and safe?
- Where do you think you could go, in your neighborhood/city/area, to look for birds?
- What is one thing that you learned from today that surprised you?