

Wildlife Ecology-Birding

Age Group: 6th grade

Time: 20 minutes

Materials:

- Journal
- Pens/pencils
- Field Guides
- Binoculars
- Field Hand Scope
- List of Local Birds
- Sheet of bird silhouettes

Prep in advance:

- Make copies of list of local birds & silhouette sheet.

Description:

Students will spend 10 minutes in the field, observing birds' sounds and behaviors.

Objectives:

Students will be able to.....

- Understand the fascinating and unusual world of birds.
- Know how to use binoculars and a hand scope.
- Document bird observations
- Experience bird watching and observe bird behavior.

Environmental Education Guidelines:

- Questioning & Analysis
- Knowledge of environmental processes and systems
 - The living environment: Organisms, populations and communities, systems and connections.
 - Environment and society: Places

Major Life Science Themes:

- Ecosystems
- Living/non-living things
- Populations
- Animal relationships
- Diversity

Safety:

- General garden safety:
 - stay on the paths,
 - ask before you eat,
 - stay within sight of an adult

Instructional Sequence:

Directions & Equipment (*5 minutes*)

- Gather materials and check for proper outdoor gear.
- Describe or Review Birdwatching DIRECTIONS:
 - Define observation boundaries.
 - Explain that the entire 10 minutes should be used for observation and recording. Leader should be silently wandering around observation area to answer questions – students should silently signal to a leader if they need assistance, but stay in place waiting for the leader to come near.
 - Demonstrate signal for the end of the 10 minutes (An obvious bird call).
 - Activate your senses (especially hearing).
 - Walk silently to observation place.

Observation (*10 minutes*)

- Introduce some basics of bird watching:

- How to use binoculars, a field guide, listening to sounds, habitats.
- Give all students:
 - List of local birds.
 - Sheet with the silhouettes of types of birds.
- Instruct the students to use the worksheets to help ID birds, checking off what birds they see on their field experience.
- Instruct students to:
 - Spread out and stop when they see or hear signs of a bird.
 - When a bird is heard or found, follow that bird the whole time to observe its behavior.
 - Listen and watch for a few minutes before recording anything
 - Look for other birds or animals that are around and possibly influencing the bird's behavior
 - Watch for patterns in behavior. Does the bird always return to the same spot on the ground, the same branch in the tree? Does the bird have anything in its mouth? What kind of sounds is it making? Silent? All different calls? All the same song?
 - Every time you begin writing, start with your name, date and time. Next, write down observations. For example: What size is the bird? Is it still or active? Describe the area that it is occupying. Option to draw the bird or a place that it is frequently using. If you have found any other signs of bird, feathers, nest, etc. Draw or note what you find.
 - Option to make a sound map. Mark an "X" for where you stand in the center of a blank page. Write or draw around the "X" to show where sounds are coming from. Begin with all the bird sounds that you can hear and then note other sounds. How are the birds responding to other sounds in the place?
 - When you hear the signal, find the leader and return quietly with the group to share observations and turn in notes.
- Lead students into the field.

Sharing observations & Closure (5 minutes)

- Gather group into a sharing circle.
- Ask each student to report one observation.
- Instruct students to turn in their journals and return materials to their proper place.

Assessment/Evaluation:

Have students write in their journals about what they observed in the field, draw a picture of the bird they saw, etc.

Additional/Optional Activities

- "What makes a bird a bird?"

Wings

Feathers (light weight)

Warm blood

High metabolism

Air sacs - complex respiratory system

Strong, large heart

Lay eggs instead of carrying offspring

Have a bill rather than teeth

No bladder or urethra

- *Flight demonstration*

Have a student stand on a chair and try to fly. Why doesn't it work and what is needed? Give the student a pair of wings (cardboard with tissue) and ask them to try again. Still doesn't work. Why? It has been found that an average size adult would need a 280-foot wingspan to get off the ground. What kind of muscle would it take to move a 140-foot wing? How would our skeleton have to change?

Have students keep a tally of how many different birds they see. The tally should include field marks, habitat, calls, behaviors, and food items eaten. On a piece of graph paper they could very simply sketch out the territory of their particular bird and record its activity. If possible, look for bird tracks in the mud. Remember, different birds for different seasons..

At any site, it is important to stress quiet viewing. When you return, have the students compare lists. Some may have been more observant than others. Some may identify birds better. A summary activity could be to have students build their own nests, after having observed different kinds of bird homes. It brings home just how complex nests are.

- *Closure*

- Review what was learned during the class.
- Find out what new and interesting things the students now know about birds.
- Discuss the fact that bird watching is an easy activity to do anywhere and all you need is binoculars and a field guide.
- What do we learn from birds?

A good story is the one about the miners who took parakeets with them into the mines. As long as the birds sang and chattered, the miners were safe. If the Parakeets quit singing and began to die, the miners knew to get out right away because the levels of a colorless, odorless, deadly gas called methane were too

high. Much lower levels of methane can affect parakeets than humans. (Methane is created from decaying plants in places where there is little oxygen.)

- Build-a-Bird (similar to the Pre-Class activity)

The props used for this demonstration emphasize how well adapted the bird is to flight and its lifestyle. During the activity it is effective to pass around samples of each body part (different types of wings, feathers, and feet). Have the students name the parts and adaptations as much as possible.

Feathers - Use a sweatshirt cut up into strips but still retaining its shape.

Demonstrates that feathers are used for insulation and flight. Pull out some good examples of tail feathers, breast feathers, and demonstrate the differences between owl feathers and hawk or raven feathers.

Wings - Use a cape or make wings out of cardboard and tissue paper. Talk about how large the wing must be relative to the body size and weight, and the muscles it takes to lift them. This is a good time to talk about the strong skeleton, keeled breast bone and hollow bones.

Beak - A cut out of a beak that ties around the head works well. Beak size and shape are a function of food size and beak use. A beak used for killing and ripping meat is going to be different in morphology than a beak used for finding and shelling seeds. This is a good time to pass around various bird skulls to show the variety of beak morphology. Pull out an oriole's nest and ask them what the beak of this bird looked like.

Feet - A good set up for the feet are cardboard anklets with tongues and four sticks taped to the tongues to represent claws/talons. Point out the various uses for feet and how shape and size are related to this. A duck has webbed feet for moving about in the water (phalaropes actually swim). A woodpecker has two toes in the back and two in the front, for more stability on the vertical tree trunk. Birds of prey have large talons for carrying prey items and killing/catching their prey. Pass around different birds feet to demonstrate. (See *Birds of Prey* write-up for more)

Heart - A large red poster board heart to hang around the neck is sufficient. The bird has a large strong four chambered heart, is warm blooded, has a high metabolism and good respiratory system to help out in flight. It takes a lot of energy to fly. The turkey vulture is a good example of a bird that conserves energy well.

Eyesight - A set of binoculars are perfect. Explain the sharpness of some birds eyesight, the different amounts of rods and cones, and why. Demonstrate with a couple volunteers the difference between binocular and monocular vision.

Songs/Calls - A birdcall puts the final touches on our bird (or taped bird songs if you have them). The birdcall is one way a bird communicates (they also use body language). A bird may have a different call for attracting a mate, for territorial defense, for protecting their young etc. We can identify different birds by their birdcalls. The meadowlarks, nighthawks, screech owls and the red-winged blackbird are a few easy ones.

A good wrap-up to this activity is to present the video "Our time has come". This video features the flight of a Bald Eagle as it hunts for fish. It is a great visual example of the specific use of each body part, esp. the tail, the talons, and the sharp eyesight.

- Bird Beak Banquet

This activity is especially effective for younger groups. The objective is to demonstrate how a bird's beak is specifically adapted in size and shape to their main food items. To do this, the students are presented with a variety of utensils representing various beak shapes and sizes. They are also presented with a selection of foodstuffs that can be equivalent to the diet of a large variety of birds. Using the different utensils on the various food items the students should be able to identify which utensils work best with each type of food.

MATERIALS

toothpicks	raisins
tongs	peanuts
pipettes	honey in small jar
spoon	spaghetti
strainer	chunks of meat
tweezers	water with uncooked oatmeal
scissors	sand with sunflower seeds
other various utensils	other various food stuffs

Have the students sit around a large table each with their own bowl. Pass out the utensils, one to each student. Explain what is going to happen and what they have to do. Then present the foodstuffs. After a short while have them pass around the different utensils so that they get a good sampling. Then conclude with a discussion on which foods were easiest to pick up with which beaks and which bird each beak might represent in real life.

- Foot Race

This activity is to demonstrate the different uses for different types of feet. The activity consists of a relay between two teams of birds, the ducks and the storks. The "ducks" must run with flippers on to represent webbed-feet and the storks use stilts to represent long legs. Before the race begins talk about feet and what they are used for. Ducks use theirs to move through the water, birds of prey use theirs to catch small animals, woodpeckers use theirs to stand on tree trunks easily, etc. So the foot of a bird is as specific to its use as the beak is to its food item.

Divide the group into two, half with the flippers and half with the stilts (#10 cans with rope used for handles). Set the beginning and the end points and say the word go! This activity is fun for kids who are tired of birding and being quiet.

- Migration Headache

See Project Wild for further details. As in “Pit-Stop Migrators,” the group is again role-playing migratory birds. This time, the bird they represent will be a nonstop migrator like the Black Poll Warbler. Birds that do not make pit stops must gain enough body mass to get them all the way to their destination. This means gaining up to 50% of their normal weight! Set up the index cards in two rows, about 50 feet from each other. Make sure there are enough cards for one student per card, per row. Ask the students to find a habitat in Oregon (stand on one card, all in the same row). Explain that they will be migrating to Mexico, and they are to find a suitable habitat once they arrive. On your command, have them run to the other line. The index cards will have different colored numbers on them. When they have all found habitat, call out a color and number (red #2). Any student standing on that habitat has died, and is to come forward. Explain that the habitat was unsuitable, and remove all like cards from the playing field. Reincarnate the dead bird(s) as Kestrels (predators). Have the Kestrel stand off to the side between the two lines, facing away. When the birds try to migrate back to Oregon, they have to avoid being tagged by the Kestrel. All birds that get eaten by the Kestrel, become a Kestrel themselves. Next time you call out a color and number, have those students become cats. Not only will cats eat Warblers, they will eat Kestrels as well! Send the cats to the opposite side of the playing field. Birds that are tagged by cats, become cats. Continue to play until your songbird population is drastically reduced. You may also add a third predator group, an even more destructive animal...human! Discuss results, and what we can do to stop this trend.

- Paper Wings

Make paper airplanes to demonstrate different wing shapes. Use different paper types and thicknesses. Have throwing contests, and then discuss why one went farther than another. Do all birds want to glide well? What would the wing of a bird who wanted to fly quickly look like? What about birds like penguins that "fly" underwater? What about birds like ostriches, emus and kiwis that do not fly at all?

- Bird Feeders

Depending on how much time you have, either build bird feeders and/or houses, repair any that need repair or restock the birdseed. The instructor may want to touch upon why feeders and houses are helpful in urban areas. Also, if one has a bird feeder, make sure they are well stocked, especially during the winter, since birds become dependent on the feeders.

- Journal exercise
 1. Write down the names of some of your favorite vegetables and in what dishes you like to eat them. (plain, in soup, fried, in salad, etc.)
 2. Next pick a vegetable and write it so that it becomes an acronym for you. For example, if I were to pick SQUASH, I might write S = silly, Q = quick

- Teambuilding – “Obstacle Course”

Object: To build trust, make new friends, have fun and learn teamwork skills.

Game objectives: To get a blindfolded team member through/past the obstacles without touching any of them.

Procedure: Create a visual boundary with a rope or backpacks and fill the space with benches, hoops, boards, water bottles, someone with their arms out or whatever is around. The only people allowed in the course have blindfolds on, the only way to get someone safely through is with verbal communication. There are a couple ways to lead this activity; either one person goes through with the entire group helping that one person, or the group is divided into buddies and each buddy tries to get their buddy through. With one person, the team discovers that they need to allow one person to give directions at a time. With the buddy version, trust is built and everyone participates.

- Bird Scavenger Hunt

This activity is designed to encourage the actual sightings of a bird without the need to identify it to validate the sighting. The objective is to sight as many birds and bird activities as possible. Using a checklist of bird behaviors and typical places they are seen, kids will find they are able to actually see a fair bit of bird activity. Everyone will need Binoculars or a set of binoculars for a pair of students. Scavenger Hunt cards:

Flying	fence post
Sitting	branch
Preening	ground
Feeding	telephone line
Territorial display	building

The cards should contain specifics for the place you intend to do this activity, for example: volleyball net, lapidary, the office, the water at the willows.