

Lesson: Feathers in the Forest

Topic/Essential Question: How do trees provide food and homes for birds?

Unit: "Why Are Trees Terrific?" Kindergarten Environmental Literacy



Content Standards:

- Science 3.0 Life Science F. Ecology 1. Describe ways animals and plants interact with each other and their environment, e.g. birds nesting in trees, deer eating plants, bees pollinating flowers, spiders eating insects, etc.
- Foundation for EL Standards 2.0 Interaction of Earth's Systems, 3.0 Flow of Matter and Energy, and 4.0 Populations, Communities, and Ecosystems.

Length of Lesson: 30 minutes (*This lesson is split into two 15 minute activities that are taught simultaneously. The group splits in half for the lesson and swaps after their first activity.*)

Student Outcome: The student will describe how birds use trees for food and homes.

Knowledge of the Learner:

- Prerequisite Knowledge, skills and processes: trees and animals are living things with basic needs; listening, observing, following instructions
- Student needs, interests, previous learning: These will vary among students.
- Conceptual difficulties: observing non-living (taxidermied) birds to understand what living things do
- Differentiated: The instructor may pace the lesson according to the responses and participation of the students.

Knowledge of Content:

- Content knowledge for instructor: Provided in the text of the lesson.
- Vocabulary: Forest, habitat, forest floor, leaf litter, cavity
- Resources:

Taxidermy birds:

<i>Robin</i>	Bird wings and tails	Audubon plush birds
<i>Wild Turkey</i>	Hand rakes	Tweeters
<i>Great Blue Heron</i>	Clay	Bird seed
<i>Woodpecker</i>	Rake	Bird feeders
<i>Great Horned Owl</i>	Pine needles	Nest pictures
<i>Cormorant</i>	Branches	Hand wipes
	Woodpecker picture	Table

Pre-Assessment: During the opening at the beginning of the field trip, Camp Woodlands staff will invite students to share what they have learned at school about trees including trees as living things, trees as plants, parts of tree, and what is a forest.

Activity A: Bird Observation and Nest Activity

Set Up Before Students Arrive:

1. Set up taxidermy birds on picnic table (*Set up inside Tee Pee if it's raining.*)
2. For the robin's nest activity, place pine needles in the bucket on the table where students will be able to reach them. Break the clay into medium chunks and roll into balls, one for each student and place in one Ziploc bag so the clay does not dry out (*Woodlands staff will set up table and inform you of group numbers.*)
3. For the turkey nest, rake leaves into as many piles as there are students plus one for the instructor (*Woodlands staff will inform you of group numbers.*)
4. For the heron nest, make a flat pile of branches about 3 feet across on the ground, like a platform. Gather other branches and place them in a separate pile that the students will use to add to their nest.

Motivation/Warm-up:

1. Have students sit at the table. Ask them **NOT** to touch the birds.
2. Welcome students to the activity and introduce yourself.
3. Ask students how would they recognize or know if something is a bird:
 - a. What body covering do they have? *Feathers. (Allow students to feel the bird tails and wings.)*
 - b. What kind of mouth do they have? *A beak.*
 - c. What body parts help them move? *Wings and feet. (Note: Not all birds fly, penguins and ostriches, for example.)*
 - d. How are baby birds born? *They hatch from eggs.*
4. Inform the students that they are going to learn how birds use trees for food and homes.

Procedure:

1. Explain to the students that these are forest birds. Ask students, "What is a forest?" *A place where there are a lot of trees.*
2. Assist students in naming each bird. (*see "Bird Fact Sheet for Instructors" for more details*)
3. Invite students to play a guessing game with you. Give these instructions: "I want you to listen carefully while I read a description of a bird. Give a 'thumbs up' when you think you know which bird it is, but don't call out the name. When I'm done reading, I'll call on someone who can tell me what bird it is."
4. Read the descriptions one at a time. Allow students to respond after each description. Through *observation* and the *process of elimination*, the students should be able to match each bird to its description.

- “Many people don’t think of me as a forest bird because I like to wade in the water and catch fish to eat. That’s why I have long legs and long toes. But I need trees because I make my nest of sticks high in the treetops. I am a . . .” **Great Blue Heron.**
- “I am a very large forest bird. I spend a lot of time walking around and looking for food on the ground like acorns, other nuts and seeds. But I like to sleep or “roost” in a tree at night. When it’s time to lay eggs, I make a nest in the leaves on the ground. I’m a . . .” **Wild Turkey.**
- “My webbed feet help me swim and my hooked beak helps me catch fish. I build my nest in trees, on rocks or on the ground. I am a...” **Cormorant.**
- “I am a good tree climber. I climb up and down trees looking for bugs to eat. With my strong, pointy beak I can peck a hole into a tree and make a nest inside. I am a . . .” **Woodpecker.**
- “I am a forest hunter. I have big, sharp claws called “talons” that I use to catch mice and other forest animals. My big eyes help me hunt at night. I like to find a cozy hole in a tree that I can nest in. My “horns” on my head are really feathers. I am a . . .” **Great Horned Owl.**
- “I love to eat worms and berries! I make a nest of mud and grass. My nest is shaped like a bowl. I make my nest in a hidden place on a tree branch. I am a . . .” **Robin.**

5. Invite students to try making the bird nests listed below with you.

**At each nest, tell the students that they have been transformed from kindergarteners into the bird of the nest they are building. For example, “You all have been transformed from kindergarteners into robins.” Do this for the heron and turkey nests as well.*

Robin Nest

- a. Show students a picture of a robin’s nest. Explain that a robin builds a bowl-shaped nest of grass, pine needles and mud. Invite the students to try to make one. Explain that they will not keep the nests because other students will reuse the materials. The instructor should do this along with the students so they can see what they are supposed to do.
- b. Explain that a robin begins building its nest with dry grass or pine needles. Have each student take a small handful of pine needles from the center of the table and put it in front of them. Ask students, “Where do the pine needles that robins use to make their nests come from?” *Pine trees.*
- c. Explain that a robin also adds mud to its nest. Explain that students will use the clay as mud. Have students take their ball and press it into a pancake.
- d. Have students take their clay pancake and cup it in their hands, tell them to use their thumbs to form it into a bowl.

- e. Now have students add their pine needles to their clay bowl to make it soft for the eggs.
- f. Have students compare their robin's nest to the picture. Ask them if they think a robin is a good nest builder.

**Between groups, have chaperones take apart nests by pulling the pine needles off the clay to be reused and roll each piece of clay back into a ball and place it back in a Ziploc bag on the table.*

Heron Nest

- a. Show the students the pictures of heron's nests. Explain that a heron builds a nest of branches high in the treetops. They gather large sticks to build a base (*bottom*) then add smaller sticks. Ask students, "Where do the branches that the herons use to build their nests come from?" *Trees*.
- b. Show students the nest made of large sticks.
- c. Invite students to take turns adding branches to the nest.
- d. Encourage students to take turns standing on the nest at the end and assist them by holding their hands.

**You do not have to take the new heron nest apart before the next group. Just have the next group move the branches to a new location (not far), making their nest and repeat for the next group and so on.*

Wild Turkey Nest

- a. Show students a picture of a turkey nest. Explain that a turkey forms a nest with the leaves on the ground by scratching with its feet and wiggling its body down into the leaves. Ask students, "Where do the leaves come from that turkeys use to make their nests?" *Trees*.
- b. Have each individual student stand next to a pile of leaves.
- c. Invite students to take turns stepping into the center of the leaf pile and using their feet to create a shallow bowl shape.
- d. When the nests are complete, have students squat over their nest and "**Gobble**" like a turkey.

**Between groups, have students use their feet to put leaves into piles again.*

Assessment: Have students name some forest birds. Ask students, "How do birds use trees?" *For nesting materials, place to build their homes and food.*

Activity B: Bird Habitat Hike

Set up before students arrive:

1. Place Audubon plush birds and tweeters on the picnic table.
2. Put hand rakes on the trail (*Woodlands staff will help choose a location.*)
3. Place the picture of the “Life-sized” Pileated Woodpecker near dead logs on the trail (*Woodlands staff will help.*)

Motivation/Warm-up:

1. Have students sit at the table.
2. Welcome students to the activity and introduce yourself.
3. Explain to the students that today they are going on a bird habitat hike to look and listen for birds. Ask students, “What is a habitat?” *Place where an animal lives.* Ask students, “What type of habitat are you in?” *A forest.*
4. Have students sit quietly, close their eyes and listen for birds. Ask them to raise their hands when they hear a bird.
5. The instructor will hand out a plush bird to each student, but tell the students NOT to squeeze them yet. Once the birds have been handed out tell the students that they are going to listen to each bird one at a time to hear what they sound like by squeezing the bird (*This is the bird’s song.*)
6. After each student has had a turn, ask the students, “Did all of the birds sound the same?” *No.* “Why do birds sing?” *To communicate.*
7. Show the students a tweeter. Ask them what it sounds like. *A bird.* Show the students how to use the tweeters and explain they are used to attract birds. Then hand each student one to take on the hike (Collect them at the end of the lesson.) Students should only use the tweeters if the instructor says, “It’s tweeter time!”

Procedure:

1. Take students on a bird walk. Remind them to walk quietly so they don’t scare away the birds. Tell them to look for birds as well.
2. At various points on the trail, have students do the following activities:
 - **Search for nest cavities:** Explain that some birds build their nests in holes or “cavities” in trees. Have students look for holes in trees where birds might make a nest. Show students the log with the cavity made by a woodpecker.
 - **Explore the forest floor** (*Depends on weather*): Explain to the students that some birds search on the forest floor (*ground*) for food. Some birds eat seeds from the ground. Some eat insects and other small creatures from the ground. Have students look for seeds, insects and small creatures on the ground, hand lenses can be used. Let them use hand rakes to search under the leaf litter (*leaves on the ground*), too.
 - **Stop at the log to observe the birds on the feeders:** *Use tweeters to attract birds.* Don’t let students stand too close to the feeder or the birds will not visit, have them stay behind the fallen log. Use the poster to help identify any birds the students may see.

- **Explore a fallen log:** Explain that this is a tree that has died and fallen down. Explain that some birds like woodpeckers search on logs for insects or other living things to eat by pecking with their beaks at the wood (*This helps break the log into soil, show students the soil.*) Ask students to find small, round holes that insects such as ants, bees or beetles may have made. Ask students to look for large, irregular holes that woodpeckers may have made searching for insects to eat. Show the students the picture of a pileated woodpecker, a Camp Woodlands resident. Have students make a woodpecker sound by knocking on the log.
- **Search for berries or other fruit:** Explain to the students that some birds eat berries or other forest fruits. Have students look for these on trees and bushes. Remind them not to pick or eat anything off of trees or bushes.

Assessment: Ask students, “What kind of foods do birds eat in the forest?” *Insects, worms, seeds and berries.* Ask students, “Where do birds make their homes in the forest?” *In trees, tree cavities or on the forest floor.*

Bird Fact Sheet for Instructors

What bird is this?	Home	Food
Robin	Makes nest in tree branches. Uses grass, twigs and mud.	Favorite foods are earthworms and berries.
Woodpecker	Nests in cavities (holes) it finds in dead trees. Some woodpeckers make their own tree holes.	He climbs on tree trunks to find his favorite food: insects.
Wild Turkey	Makes a nest of dead leaves on ground. Sleeps up in trees for safety. This is called "roosting."	Walks around on the ground eating acorns, nuts, seeds, fruits from trees.
Owl	May nest in a hollow tree.	Why does he have such sharp claws and beak? Hunts other forest animals. Hunts at night. Perches in a tree and look for prey. Swoops down very quietly and catches prey with long talons (claws). Eats mice, rabbits, other birds. They are the only animal that regularly eats skunks.
Heron	Makes a nest out of sticks in the tops of tall trees.	Why does he have such long legs and toes? Long legs for wading. Long toes to keep from sinking in the mud. Stands or walks in the water to catch fish, snakes, frogs and other things with its long beak.

Cormorant	Makes a nest out of sticks, grass and seaweed atop trees close to the water or on top of rocks.	Why is the upper bill shaped like a hook? Helps catch prey. Eats almost all fish and a wide variety, over 250 different kinds have been reported.