

**Wildlife Prairie State Park
Feathered Friends
Teacher's Packet**

Grades 3-4

Abstract

Birds play an important role in the environment, as do all organisms. They help pollinate flowers, spread seeds in their droppings, and eat pest insects. They are also an important indicator of the quality of a habitat. Although they have many common characteristics, birds are a very diverse group of animals.



Addresses State Goal Requirements

Goal 1: Read with understanding and fluency.

Goal 11A: Know and apply the concepts, principles and processes of scientific inquiry.

Goal 12A: Know and apply concepts that explain how living things function, adapt and change.

Goal 12B: Know and apply concepts that describe how living things interact with each other and with their environment.

Objectives

Students will learn the characteristics of birds, and will be able to distinguish the type of food it eats by its bill, different uses for different types of feet, and distinguish between different nests.

Students will learn about the family lives of birds including singing, finding a mate, nest building and raising the young.

Students will learn how birds affect our lives and the ways we affect theirs.

The goal of all environmental education programs at Wildlife Prairie State Park is to help students become environmentally knowledgeable, skilled, dedicated citizens who are willing to work individually and collectively toward achieving and maintaining a dynamic equilibrium between the quality of life and the quality of the environment.

Wildlife Prairie State Park Feathered Friends Student Preparation

Before coming to Wildlife Prairie State Park, please familiarize your class with the following vocabulary words. In addition, students should participate in at least one pre-trip activity.

- 1) **Organism:** any living creature.
- 2) **Properties:** identifiable characteristics (color, size, texture, warm blooded, etc.).
- 3) **Habitat:** the place where an organism usually lives.
- 4) **Bird:** an egg laying organism with feathers and has a beak and claws.
- 5) **Field Marks:** marks on a bird's body that help us identify it species (colors, body shape, stripes, leg type and beak type).
- 6) **Predator:** An animal that hunts and eats other animals.
- 7) **Prey:** an animal that is caught and eaten by another animal.
- 8) **Adaptation:** a behavior, physical feature, or other characteristic that helps an animal survive and make the most of its habitat. For example, ducks have webbed feet that help them swim.
- 9) **Down:** soft feathers next to the body that provide insulation.
- 10) **Migration:** seasonal movement from one region to another to take advantage of some situation (warmth, food supply, etc.). For example, a hawk may migrate from southern Canada to Central America for the winter.
- 11) **Preen:** to clean, straighten, and fluff the feathers.

Wildlife Prairie State Park
Feathered Friends
Pre-Trip Activity

Fill the Bill

It would be impossible for a hummingbird to gobble up a mouse. And it would be just as impossible for a hawk to slurp up some nectar from a flower. Each type of bird has a special beak and tongue adapted to eating a certain type of food. In this demonstration your group can find out which beaks are best for tearing, scooping, cracking and picking by going to different stations you've set up and trying to find out which tools go with which types of "food."

First talk about some different bird beaks to get the students thinking about how beaks help birds survive. Here are some examples of birds and beaks you can talk about:

- ❖ **Hummingbirds** have long hollow beaks that they use to probe flowers for nectar. The beak protects the tongue, which slurps up the nectar.
- ❖ **Woodcocks, Cranes, and Snipes** have long beaks that they use to probe for worms, crustaceans and other small creatures in mud and water.
- ❖ **Cardinals, Sparrows, Grosbeaks, and Finches** have very short, conical beaks. These beaks are very strong and can crack open tough seeds.
- ❖ **Pelicans** have long sharp beaks they use to scoop up fish and other aquatic creatures,
- ❖ **Herons and Egrets** have long sharp beaks that they use to spear fish, frogs, crayfish and other small aquatic creatures.
- ❖ **Nighthawks, Whip-poor-wills, Swifts, and Swallows** have large, gaping mouths that act like nets to trap insects. These birds catch insects on the wing.
- ❖ **Warblers and Vireos** have small, sharp, pointed beaks for picking insects from leaves, logs, twigs and in flight.
- ❖ **Hawks, Owls, Eagles and Vultures** have strong hooked beaks that they use to tear meat into bite-size chunks.
- ❖ **Flamingos** have a large grooved beak that allows them to filter small crustaceans from the water.

After having tested the food samples, test the students by asking them to match the beak adaptation to the drawings by comparing bill and descriptions.

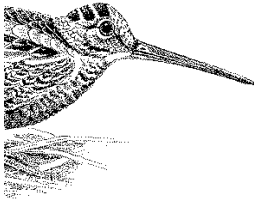
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Adapted with permission from *Nature Discovery I: "Illinois Birds."*

Developed by the Wildlife Prairie State Park Education Department, 1994

**Wildlife Prairie State Park
Feathered Friends
Pre-trip Activity**

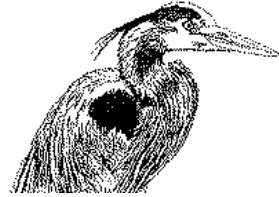
Fill the Bill



1) _____



2) _____



3) _____



4) _____



5) _____



6) _____



7) _____



8) _____



9) _____

BEAK ADAPTATIONS

Fish-eating beak: long, slim, strong, and pointed to reach into the water and to grasp slippery creatures.

Insect-catching beak: small sized beak that can open wide to grab insects in flight.

Water and Mud-sifting beak: wide and shallow; comb-like strainers on edges filter out bits of food in water.

Chisel beak: sturdy and sharply pointed to chisel into wood; accompanied by an extremely long, barb-tipped tongue to pull insects and insect eggs out of tunnels in bark or wood.

Insect and Fruit-eating beak: narrow and pointed to grab insects or reach fruits, and slightly arched to crack seeds; larger than an insect-eating beak but shorter than a fish-eating beak; sleeker and longer than a seed-eating beak.

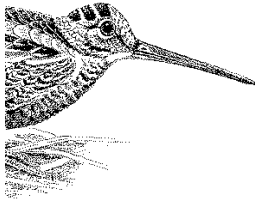
Preying beak: stout, sharp and sharply hooked to tear the flesh of animals.

Probing beak: thin and long to reach insects and other small animals buried in sand or mud.

Filter beak: large and curved with grooves and comb-like filter for sifting out crustaceans from water.

**Wildlife Prairie State Park
Feathered Friends
Pre-trip Activity**

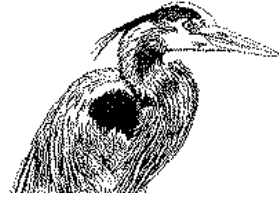
Fill the Bill: TEACHER'S COPY



1) Probing beak (Woodcock)



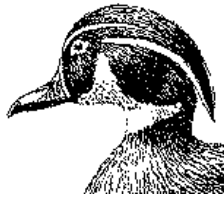
2) Insect/Fruit-eating beak (Meadowlark)



3) Fish-eating beak (Great Blue Heron)



4) Preying beak (Bald Eagle)



5) Water/Mud-sifting beak (Wood Duck)



6) Chisel beak (Nuthatch)



7) Seed-eating beak (Cardinal)



8) Fish-eating beak (Kingfisher)



9) Filter beak (Flamingo)

BEAK ADAPTATIONS

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Wildlife Prairie State Park
Feathered Friends
Pre-trip activity

Feet Are Neat

One good way for students to understand how birds are adapted to live in their habitats is for them to take a look at bird feet. In different ways, bird feet come in a lot of different shapes and sizes.

Ask your group to think of some of the ways birds use their feet. They use them for walking, perching, swimming, running, climbing and grabbing. Then talk about some of the different kinds of feet different birds have. Here are some examples:

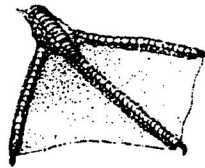
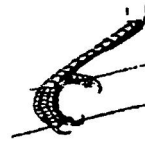
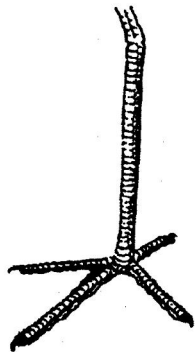
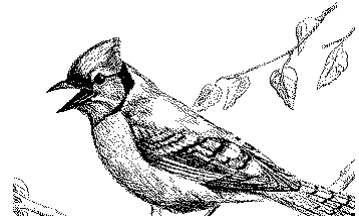
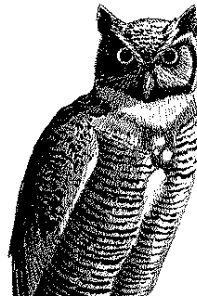
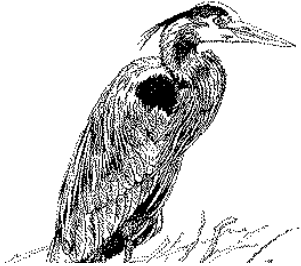
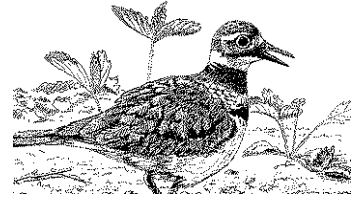
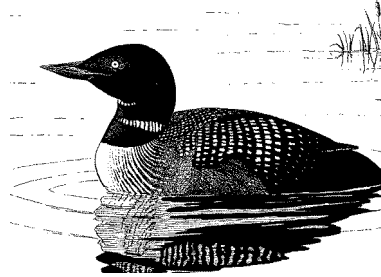
- ❖ **Climbers:** Woodpeckers have two toes in front and two toes in back for climbing up and down tree trunks.
- ❖ **Graspers:** Hawks, Owls and other birds of prey have large curved claws, called talons, which dig into their prey and help them hold onto it in flight.
- ❖ **Perchers:** Robins, Mourning Doves, and most songbirds have three toes that face forward and one long hind toe that helps them grip their perches tightly.
- ❖ **Runners:** Killdeer have three toes (instead of four, and all their toes point forward for fast running.

- ❖ **Scratchers:** Chickens, Pheasants and other larger land birds have rake-like toes for scratching in the soil. Some have fringes for easy snow walking.
- ❖ **Swimmers:** Ducks, Coots, and other swimmers use their feet as paddles.

Next pass out copies of the next page to the group and have them try to figure out which birds go with which feet. Then pass out lumps of clay or modeling dough and have everyone make a model of bird feet. When they're finished, have each person draw a picture of his or her bird on a piece of white cardboard or stiff white paper, color it and tape pip cleaner legs to the cardboard. (To make each leg, have them twist two pipe cleaners together). Then they can push the legs, with the bodies attached, down into the feet.

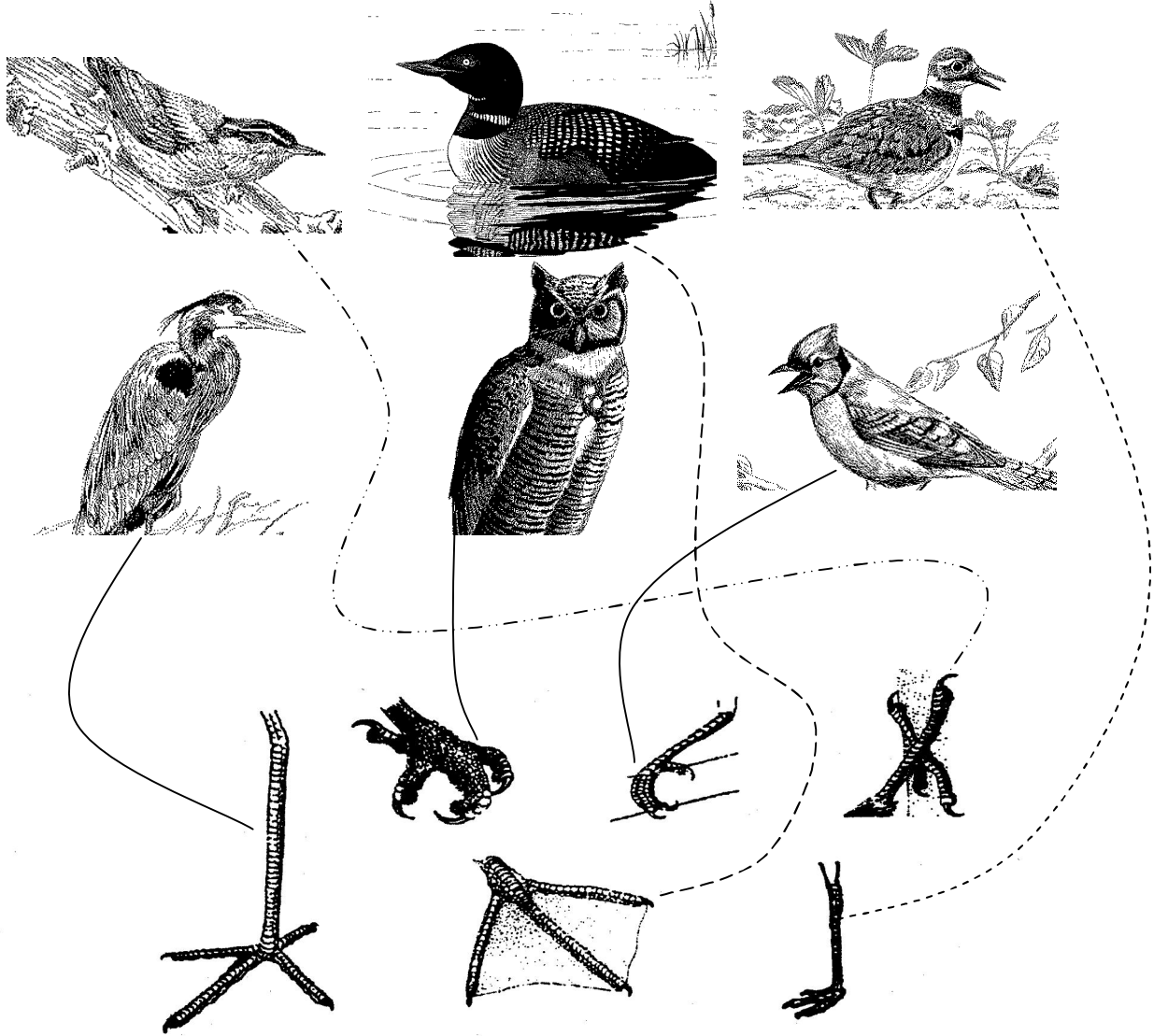
Wildlife Prairie State Park
Feathered Friends
Pre-trip Activity

Match The Feet



**Wildlife Prairie State Park
Feathered Friends
Pre-trip Activity**

Match The Feet: TEACHER'S COPY



Wildlife Prairie State Park

Feathered Friends

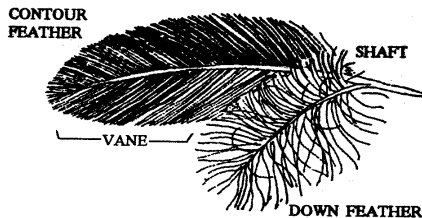
Pre-trip Activity

Feather Features

Birds are the only animals in the world with feathers. In this demonstration, your students can learn the parts of a feather and how feathers help a bird fly and stay warm. Explain that there are two main types of feather: contour feathers, which are found on the bird's body, wings, and tail; and down feathers, which are fluffier and lie close to the bird's body, under the contour feathers.

It is illegal to collect most feathers in the wild, so the best bet for obtaining feathers may be a poultry farm or a craft store. Down feathers and contour feathers along with magnifying glasses, a little baby oil, and some water will be needed in the feather section of the center. Remind students to wash their hands after touching feathers.

- 1) Ask the students to separate the feathers into the two main types of feathers:
 - Down feathers, the soft, fluffy feathers found close to the bird's body.
 - Contour feathers, found on the bird's body, wings and tail.



Children can tell the difference between a wing feather, where the shaft is to one side of the vane, and a tail feather, which has the shaft in the middle

- 2) Examining a contour feather with a magnifying glass and identify:
 - Shaft: the stiff center tube.

- Quill: the hollow end of the shaft.
- Vane: the rest of the feather.
- Barbs: hundreds of skinny hairs coming off the shaft.
- Barbules: tiny hooks and rolled edges found on the barbs that "zip" together.

- 3) Feathers damage easily and birds must repair them so they are able to fly well. To repair a feather, a bird pulls the feather gently through its beak to "zip up" any barbules that have pulled apart. Students can repair or *preen* a contour feather like a bird does by holding the shaft in one hand and rubbing a finger and thumb of the other hand up the feather.
- 4) Preening or feather care is very important for birds. Preen glands found on most birds' backs provide oil to rub over their feathers. This keeps the feathers waterproof, flexible, and in good condition. Test to see if a feather is waterproof by spraying a few drops of water on the feather. If the water does not run right off, rub a little baby oil on the feather. Spray again and see how the water runs off when the feather has a coating of oil. The oil makes it waterproof.
- 5) Down feathers keep a bird warm... just like thermal underwear! Demonstrate this fact by filling two small jars with warm water. Wrap one of the jars in a feather pillow and place the other jar on the table. After one hour feel the jars. The water in the jar wrapped in the feather pillow stays warmer—just as a bird stays warmer when covered with downy feathers.

Wildlife Prairie State Park
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Pre-trip Activity

Classroom Aviary

Plan your own colorful classroom aviary using the reproducible birds found on the next page. Place a small dead tree branch in a large flowerpot filled with sand. Ask the students to color and cut out one of the birds reproduced on tag board. Use books from the library to show correct coloration when coloring the birds. Attach the birds to the branch by sliding the branch through the slit in the birds' feet. Write the name of each bird on a small piece of paper and place it next to the bird on the branch. A great way to learn the names of birds!

Name That Bird!

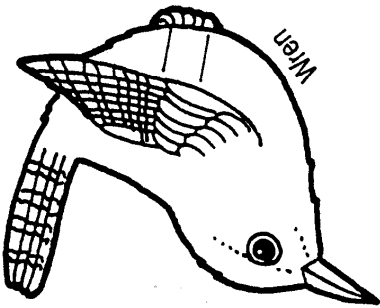
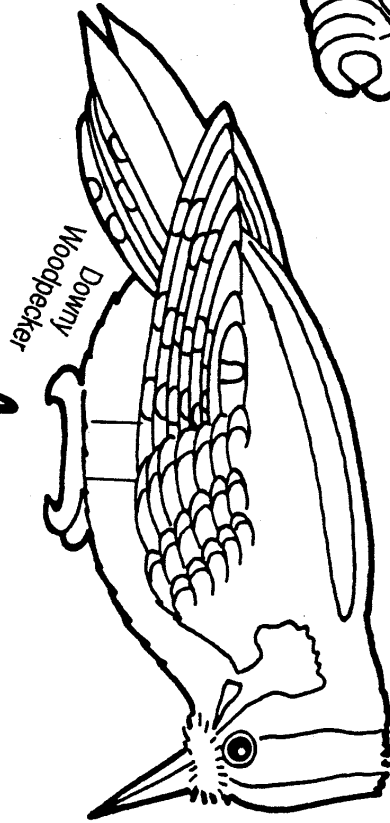
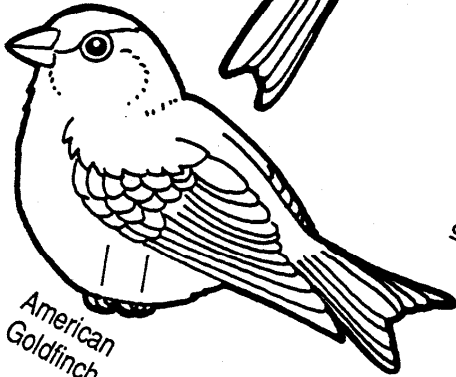
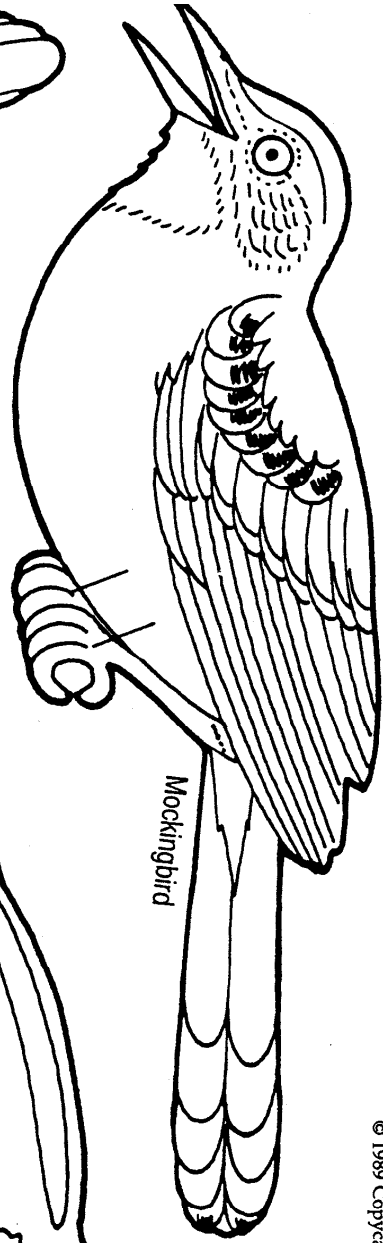
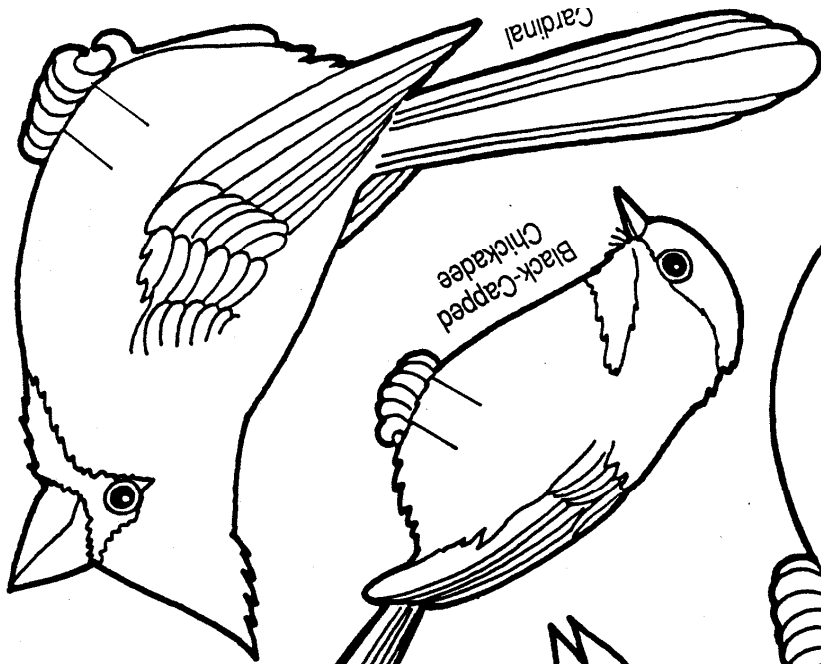
Have fun using the birds in the classroom aviary. Remove the labels from each bird and replace the name with a number. Add a few fictional or fun birds like Tweetie, Heckle, and Jeckle, Woodstock, Woody Woodpecker, Little Bird, etc. Ask the students to write the name of each bird next to the corresponding number on a sheet of paper... name that bird!

State Birds

What is your state bird? Introduce your students to their state bird by writing a group story. Research the bird and give as much information as possible. What does it eat? Does it migrate? Where does it live and nest? What are their behaviors? What habitat does it prefer? Information will not be difficult to find because it will be a familiar bird.



Classroom Aviary



Wildlife Prairie State Park

Feathered Friends

Post-trip Activity

House Hunting

Birds build their nests in all kinds of places. Some nest high in trees while others nest on the ground. Some plaster their nests on the sides of buildings or rocky cliffs and others build floating nests in marshy areas. Many birds also nest in tree cavities, stream banks, fields, and swamps. Birds also use a variety of nesting materials to build their nests, including sticks, mud, stones, lichens, grass, spider webs, snakeskins and thistledown.

Some birds are adaptable nest builders. It seems they'll build their nests wherever they can find a spot and use whatever materials they can find. But other birds are much pickier and will build their nests only in certain places and use only certain materials.

In this activity, your students can pick the perfect site to build a nest and then try to build one themselves. First, write down on slips of paper the names of five common birds that live in your area. (Choose birds that nest in your schoolyard or in a nearby park). Divide the group into five teams and have each team pick one slip. Then explain that each team is a real estate agent hired by the bird on their slip of paper to find the perfect nest site.

Pass out copies of the next page to each person. Explain to the group that each person in the team must research their bird out fill out the nesting information sheet. (You can have them work in teams too).

After everyone has filled out the information, take the group to a schoolyard that has several different types of habitats. Have the students in each team search for the perfect spot to build a nest. Remind them that most birds build their nests near a food source and that the nests are usually sheltered from rain, hot sun, and other types of weather. Also tell them that many birds hide their nest so predators can't spot them.

Give everyone 15 minutes to find the perfect spot and then have everyone gather back together. Start with one team and have the students in the team describe their bird and its requirements for a home. Then visit the nest site and talk about the pros and cons of the location. (This one's too exposed, this one's too far from water, this one would get run over by a lawnmower, and so on). After visiting all the nest sites, for one type of bird, take a vote on which team found the best site.

Afterward, have each group work together to try to build the nest of their bird, using the same materials the bird would use. Each nest should also be the correct size and shape. Have everyone on the team pitch in to help gather the materials and shape the nest. (Warn the children not to pick flowers or pull living plants). Then line up the nests and talk about each one. Encourage the children to look out for nests when they take walks with their parents or friends. But remind them that it's against the law to remove or damage a nest in the wild, even if it is old or abandoned.



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Wildlife Prairie State Park
Feathered Friends
Post-trip Activity

House Hunting

- 1) Name your bird. _____
- 2) Draw a picture of your bird on the back of this sheet.
- 3) Describe your bird's habitat. _____

- 4) What does your bird eat? _____

- 5) What kind of nest does it build or use? _____

- 6) Draw a picture of the nest.

- 7) Where does your bird usually build its nest(s)? _____

- 8) What time of year does your bird nest? _____
- 9) About how many eggs does it lay? _____
- 10) Draw and color what their eggs look like below.

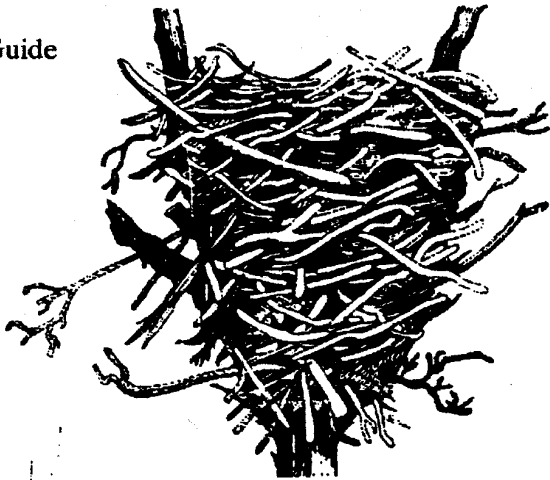
Wildlife Prairie State Park
Feathered Friends
Post-trip Activity

Nest Guide

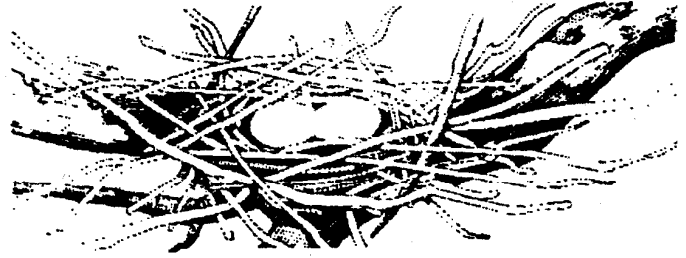
On the next page there are 11 kinds of bird nests. Your job is to use the nest descriptions below to label the nest drawings.

- **Cavity Nest:** a hollow pocket in a tree.
- **Large Stick Nest:** a mass of sticks and leaves in the crotch of a tree.
- **Small Stick Nest:** a small, loose collection of sticks resting on a fork of branches.
- **Shrub Cup Nest:** a rounded nest of grasses, bark strips, leaves, and stems woven around the branches of a shrub or small tree.
- **Grassy Cup Nest:** a rounded nest of grass stems woven into a stand of grasses.
- **Bank Nest:** a tunnel in a bank, the actual nest is an enlarged chamber at the end of the tunnel.
- **Leafy Ground Nest:** a bed of leaves on the ground in a wooded area.
- **Grass Ground Nest:** a bed of grasses on the ground in a grassy area.
- **Bare Ground Nest:** a shallow scratched-out hollow in the bare ground, often on a sandy or rocky surface.
- **Hanging Nest:** a hanging basket of plant fibers, moss, leaves, twigs, and feathers.
- **Floating Nest:** a mass of reeds floating on the surface of water.

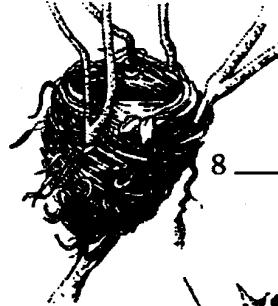
Nest Guide



1



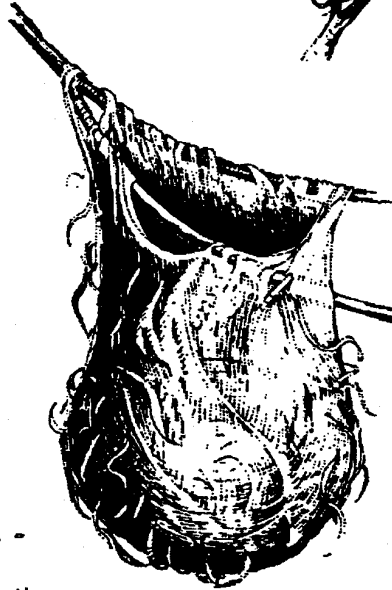
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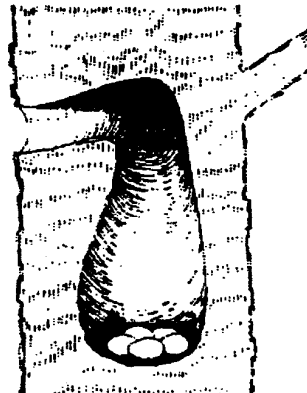


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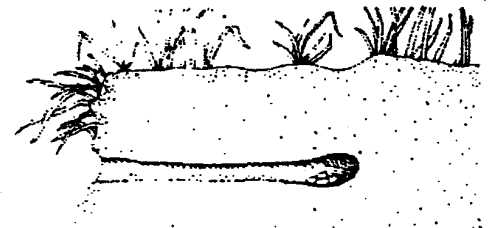
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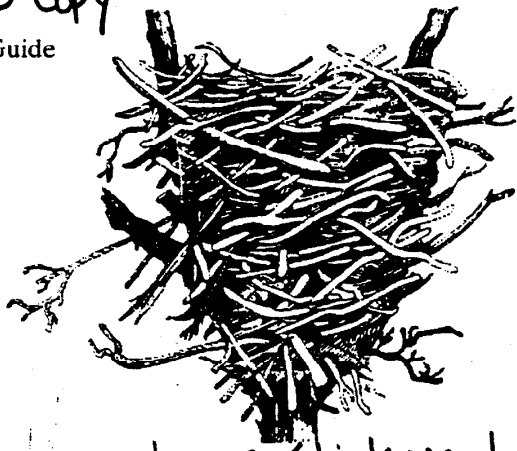
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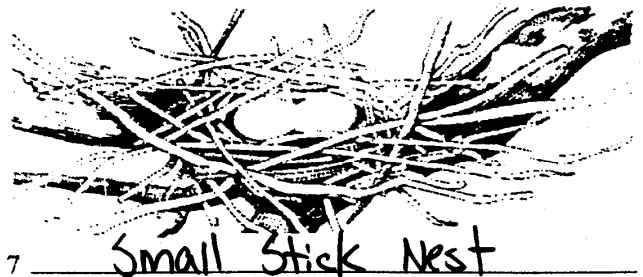
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Teacher's Copy

Nest Guide



1 Large Stick Nest
EAGLE



7 Small Stick Nest
DOVE



8 Shrub cup nest
FLY CATCHER



2 Grass ground nest
MEADOW LARK



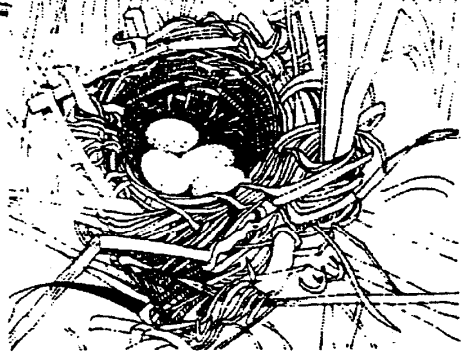
5 hanging nest
ORIOLE



9 leafy ground nest
WHIP-POOR-WILL



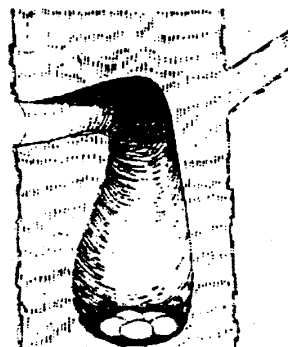
3 Bare ground nest
KILLDEER



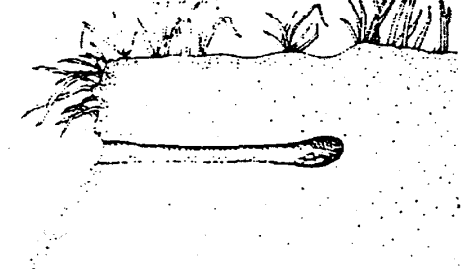
10 grassy cup nest
ROBIN



4 floating nest
LOON



6 cavity nest
WOOD PECKER



11 bank nest
BURROWING OWL

Wildlife Prairie State Park
Feathered Friends
Post-trip Activity

Take a Bird to Lunch

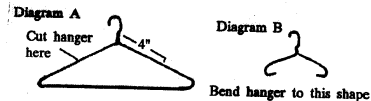
Soda Bottle Thistle Feeder

Materials:

- Large plastic soft drink bottle (liter size)
- 3 or 4 wooden dowels, each 3/16 (5 mm) wide and about 8" (20 cm) long
- X-acto knife
- Nail or other sharp object for punching holes in the bottle
- Wire clothes hanger
- Wire cutters

Procedures:

1. Wash the bottle and remove the label and colored base.
2. To make a perch, use a nail to punch two holes, opposite each other. Insert a dowel so that it passes through one hole on the other side. Make three or four such perches, alternating the positions so that all sides of the bottle are used.
3. Now you're ready to cut the feeding holes. (Remember that the finished feeder will hang with the bottle's neck facing down). With the neck facing toward you, use an X-acto knife to cut a 1/4" long by 1/8" wide (6 x 3 mm) hole about 2" (5 cm) above each perch. Keep in mind that the seeds will fall out if the holes are too big.
4. Cut a clothes hanger in two places with the wire cutters (see diagram A). Each cut should be at least 4" (10 cm) from the base of the hook. Bend the hanger so it looks like diagram B.
5. Use the nail to poke a hole in the bottle, about 2 1/2 (6.3 cm) from the bottle's base (not its neck). Do the same on the other side of the bottle, opposite the first hole.
6. Push the ends of the clothes hanger into the holes. Adjust the hanger so that the feeder hangs evenly and the ends of the hanger don't slip out of the holes.
7. Fill the feeder with "niger" (thistle) seeds, replace the cap, invert it and hang it from a tree.



Wildlife Prairie State Park
Feathered Friends
Post-trip Activity

Bird Search

V	I	R	E	O	E	S	O	O	G	A	D	A	N	A	C
L	W	O	O	D	P	E	C	K	E	R	B	I	H	K	A
R	G	R	A	C	K	L	E	D	D	O	V	E	C	S	R
S	K	E	E	E	N	L	A	R	K	H	A	U	T	T	D
E	I	W	I	N	L	D	I	L	C	I	D	F	A	E	I
S	L	E	D	R	I	B	G	N	I	M	M	U	H	E	N
U	L	P	G	R	E	A	I	H	E	R	O	N	T	D	A
O	D	N	U	U	I	F	R	P	E	W	E	E	U	A	L
M	E	I	L	E	R	T	S	E	K	I	E	L	N	K	T
T	E	B	L	U	E	J	A	Y	P	A	W	G	T	C	E
I	R	O	R	W	O	R	R	A	P	S	O	A	E	I	R
T	U	R	K	E	Y	V	U	L	T	U	R	E	A	H	G
H	A	W	K	A	E	B	S	O	R	G	C	K	L	C	E

Reading up, down, forward, backward and diagonally, can you find the names of these birds? When you have found all of them, the left over letters will give you a secret message.

BLUE JAY
 BLUEBIRD
 CANADA GOOSE
 CARDINAL
 CHICKADEE
 CROW
 DOVE
 DUCK
 EAGLE
 EGRET
 FINCH
 GRACKLE
 GROSBEAK
 GULL
 HAWK

HERON
 HUMMINGBIRD
 KESTREL
 KILLDEER
 NUTHATCH
 OWL
 PEWEE
 ROBIN
 SPARROW
 TEAL
 TITMOUSE
 TURKEY VULTURE
 VIREO
 WOODPECKER
 WREN