

**Grade Level:**

Preschool

Time:

60 Minutes

Season:

Spring

Objectives:

Students will be better able to...

- Name two characteristics of birds
- Observe birds with homemade binoculars
- Verbally describe or draw characteristics of birds (such as colors, patterns, behaviors)
- Compare predictions to results

Skills Used:

Characterizing, investigating, exploring, predicting, observing, comparing, contrasting, counting, sharing, following directions, socializing in an outdoor/group setting



Prairie Wetlands Learning Center

Birds of the Prairie Wetlands

Preschool - Exploration Series

Summary

Students start indoors with a brief dress-up activity demonstrating the characteristics of birds (wings, beak, feathers for example). For their field investigation, they predict how many different kinds of birds they will see outside. On the trail, they observe birds and describe their physical characteristics. They also make comparisons between the birds they observed. Chaperones tally each different kind observed. Back inside, students compare their results to their predictions and share other discoveries.

Background

The purpose of this field investigation is to introduce birds to preschoolers and give them the opportunity to observe a variety of springtime migrants. The investigation is driven by their current knowledge and their inquiry about birds. After reviewing characteristics of birds, they make predictions, help collect data, compare their results to their predictions, and share their discoveries with each other. The outdoor classroom provides them with first-hand experience in exploration and wonder of birds.

During this field investigation, our intent is not to fill preschoolers with facts, nor to show and tell, but to guide them to making and owning their own discoveries. By making the opportunity for discovery possible through direct interaction between each child and the prairie wetlands environment, we are focusing on the whole child and upon the unfolding real experience. The process of ecological concept and skill building are emphasized. Open-ended activities and questions with learning driven by student inquiry are encouraged.

Birds of the prairie and associated wetlands are important because they

Minnesota Academic Standards

Subjects Covered:
Science,
Math

Helps support 31 preschool indicators in the scientific thinking-cognitive domain. For details, see section: "2017 Early Childhood Indicators of Academic Progress: Minnesota's Early Learning Standards for Birth to Kindergarten"



Background, *continued*

are relatively easily viewed, they are part of the food chain, they tell us something about the habitat they live in, and they are interesting and beautiful. Studying birds is a chance to differentiate between different kinds of birds and between birds and other organisms. Students witness and wonder about the spectacle of migration first-hand.

Spring is an excellent time to observe birds at the Prairie Wetlands Learning Center. The peaceful and quiet winter months have melted away, and many bird species are migrating through our area. Some pass through, others stay awhile to rest and refuel for the rest of their journey north, and yet others stay to nest. Showy males are often busy singing and displaying their vivid plumage in an effort to defend territory and attract a mate. Their calls and visibility make them easy to find.

We expect students will most likely observe (hear and/or see) the following kinds of birds during their investigation:

Materials:

Provided by teachers:

- Toilet paper cardboard tube
- binoculars

Provided by Prairie Wetlands Learning Center staff:

- Wings, beak, tail, and egg for dress-up activity
- Wet erase markers and laminated bird photo sheets for chaperones
- Butterfly and bat puppets
- Red-winged blackbird stuffed animal
- Bird craft feathers
- Display board, laminated Velcro birds, yarn for graphing
- Toilet paper tube binoculars for Prairie Wetlands Learning Center staff to use

	Early Spring	Mid-Spring	Late Spring
Prairie Birds			
Clay-colored sparrows		✓	✓
Killdeer	✓	✓	✓
American goldfinches	✓	✓	✓
American crows	✓	✓	✓
Bobolinks		✓	✓
Wetland Birds			
Ducks	✓	✓	✓
Red-winged blackbirds	✓	✓	✓
Marsh wrens			✓
Common yellowthroats		✓	✓
Both Habitats			
Swallows		✓	✓
Sparrows	✓	✓	✓
Gulls	✓	✓	✓
Geese	✓	✓	✓

However, our emphasis will not be on bird names as much as on bird characteristics -- is it a bird or some other animal? -- and what kinds of colors, markings, or behaviors it displays so we can compare and contrast various birds to group them together or tell them apart.



Background, *continued*

If desired, students may visit the oak savanna to observe birds such as American robins, woodpeckers, black-capped chickadees, white-breasted nuthatches, grey catbirds, and yellow-rumped warblers. They may bring nesting material scraps to place on the shrubs.

Birds are more noticeable than mammals in the prairie. Some bird species have adapted well to changes in land use and may be found in farmland and towns as well as prairie. However, others are more choosy or specialized and may only be found on the few remaining remnants of native prairie. Conspicuous but uncommon species include marbled godwits, upland sandpipers, and greater prairie chickens. These three species depend upon native prairie for their survival. Less obvious but more common species include eastern and western meadowlarks, bobolinks, and savannah, grasshopper, and clay-colored sparrows. Probably the most abundant birds are the blackbirds, especially noticeable in spring when nesting; and in fall when migrating in large, waving flocks. Blackbird species include red-winged, yellow-headed, rusty, and Brewer's. Red-winged blackbirds commonly nest in fields removed from cultivation, followed by sedge wrens, bobolinks, common yellowthroats, and savannah sparrows. Prairie birds, therefore, can serve as indicators of particular environmental conditions.

Likewise, the presence of certain wetland bird species indicates circumstances such as water depth and food availability. For example, shorter shorebirds (like killdeer) forage for food on mudflats or in shallow water, but those with longer legs (like greater yellowlegs) can venture into deeper water. Dabbling ducks (like mallards) feeding in a wetland suggest shallow water, while diving ducks (like scaup) suggest a deeper basin.

Students easily observe waterfowl such as Canada geese and mallards during their visit as they fly overhead, defend their territory, and dabble for food.

The Prairie Wetlands Learning Center is part of the Fergus Falls Wetland Management District, which emphasizes waterfowl production and ensures the preservation of habitat for migratory birds, threatened and endangered native species, and resident wildlife. The District encompasses land within five counties of western Minnesota: Otter Tail, Wilken, Wadena, Douglas, Grant. In this area, freshwater prairie wetlands and associated northern tallgrass prairie join to form a zone of transition with the northern hardwood forest. This blend of habitats provides for an impressive diversity of over 290 bird species observed within the District. About 54% of them nest here (156 species). Agricultural changes to the landscape include the loss of most native prairie and the drainage of over 80% of the small wetlands. Nonetheless, the area remains a critical waterfowl production and migration area - the highest waterfowl nesting density in Minnesota was recorded here (3.5 nests/acre). The Prairie Wetlands Learning Center is located on the eastern edge of North America's Prairie Pothole Region, 300,000 square miles in size, also known as the "duck factory." Over 50% of the continent's ducks hatch from the Prairie Pothole Region. It is the complex of prairies and wetlands that makes the Prairie Pothole Region the most important breeding and nesting site for the North American population of dabbling ducks (such as mallard, wood duck, and blue-winged teal).





Teacher Preparation

We highly recommend conducting one or more of the suggested extensions before your visit in order to integrate this field investigation into the classroom study of animals, birds, classification, life cycles, adaptations, prairie, wetlands, or other topics. We believe such integration enhances student motivation for learning in other curricular areas. Please see section, “Teacher-Led Extensions/Adaptations/Assessment Ideas.”

- Prior to visiting, teachers should collect toilet paper cardboard tubes (two per student) and help them make simple binoculars with them. A paper towel tube cut in half also works. They can be glued, stapled, or taped together. Allow students to decorate them with markers. They may practice using them to observe squirrels and birds outside, or place bird stuffed animals outside for children to find with their binoculars. Be sure to bring them along to the Prairie Wetlands Learning Center.

Prairie Wetlands Learning Center Staff Prep

- Organize and prepare materials.

Field Investigation Procedure

Introduce the Topic

1. In the classroom, welcome the class and review rules for the trail.
2. Split the class into small groups with one adult chaperone supervising each group. Remind students that they need to stay with their grown up. The role of the chaperones will be to manage their small group of children and make sure they are following through with directions given by the Prairie Wetlands Learning Center staff instructor. Their job is not to provide the answers but to guide students to make their own discoveries. The Prairie Wetlands Learning Center staff person’s job is to manage and guide the entire large group, distribute equipment to chaperones, and provide trail leadership.
3. Provide laminated bird photos and a wet-erase marker to each chaperone for use now and later on the trail. (See section, “Birds of the Prairie Wetlands.”)
4. Explain to the students that they are visiting the Prairie Wetlands Learning Center to find birds and to watch and listen to them.
5. Ask the students to tell you a few things they know about birds. Where do they see birds? What were the birds doing? What kinds live around here?
6. Ask them what makes a bird a bird. Using props, dress up one of the students to demonstrate the characteristics of birds. The props include feathered wings and tail, a beak, and an egg. (The student may keep the bird beak (if made from cardboard); or staff should sanitize the plastic bird beak if it is available.) Differentiate between birds, bats, and butterflies.





Procedure, *continued*

7. Ask and answer questions together.
 - a) Ask the students to share with their chaperones what they would like to find out about birds today. The chaperones should jot down their questions on the back of the bird photos. Ask three chaperones to share aloud with the whole class.
 - b) Ask them to guess in their small groups how many different kinds of birds they think they will see today, and again, the chaperones should note those predictions. Choose three students to share with the class.
 - c) Ask students to look at the bird photos and count up how many different kinds of birds we are searching for (five or more). Review their characteristics using matching bird mounts and the red-winged blackbird toy.
 - d) Ask for everyone's help in searching for birds. Students should show chaperones birds they see and match them to the photos. Students should count how many they saw, and chaperones should tally mark that number next to the picture.

Explore Outside

8. Invite the teacher to distribute their binoculars. Prairie Wetlands Learning Center staff should also wear their own cardboard binoculars.
9. On the trail, observe birds and describe their physical characteristics. Make comparisons between the birds observed. Help students discover bird behaviors such as preening, feeding, singing, calling, flying, swimming, diving, etc. Also, guide chaperones and students to finding answers to the other questions that were suggested earlier.
10. While traveling on the trail, lead students in practicing different types of bird behavior as needed, such as strutting, waddling, paddling, flying, etc.
10. When listening to bird sounds, ask

students to close their eyes, listen, and hold up a finger each time they hear a different bird sound. How many did they hear? Where are the birds that made them? What kinds of birds are they? Did they hear any frogs singing?

Reflect Together

10. Back in the classroom, ask students to look at the bird photos. Which kinds of birds did they see? As they name them, add corresponding laminated/Velcro bird photos to the display board to form the bottom of the graph below the yarn axis. How many different kinds of birds did they see? Count the photos together across the bottom of the graph. Did anyone predict the exact same number as was observed? Higher? Lower?
11. Ask each chaperone to total their tallies with their students and write each number next to each tally. For each type of bird, graph either the highest, lowest, or rough average number of individuals seen using the matching bird photos. Which kind of bird did they see the most? The least? Not at all?
12. Review the other questions and ask students for the answers. What else did they discover about birds today? Do they think birds are important? Why or why not? How can kids be good friends to birds?
13. Collect the bird photos and markers from chaperones. Thank the class for coming and invite them to come back for a visit with their family. Give each child a bird feather to keep. These are craft feathers from domestic chickens (but they should be gently discouraged from collecting wild bird feathers since most are protected by law from hobby collecting).





Prairie Wetlands Learning Center Staff-Led Adaptation

- If extra time allows, walk to the oak savanna at Mallard Marsh and observe birds there.



Weather Alternatives

Field investigations take place rain or shine. Everyone should dress appropriately for the weather. In the event of unsafe weather (lightning, high winds) or pouring rain, everyone must come indoors. Prairie Wetlands Learning Center staff make every effort to make your travel worthwhile despite the weather and prepare indoor, age-appropriate plans. Prairie Wetlands Learning Center staff welcome teacher input into these plans. Some possible alternatives might include:

- Go outside for a very short amount of time, even if only under the deck, to observe birds.
- Tour the exhibit area and watch prairie wetlands videos with the objective of observing birds and completing the investigation based upon those observations.
- Read any of the children's books listed in the "References and Resources" section. Incorporate movement and/or sounds where possible.
- Set up bird centers in the dining hall for students to rotate among with their chaperones. Possible stations include drawing a bird using taxidermy specimens or drawing bird feathers; zipping bird feathers with finger "beaks;" listening to bird songs on the Identifier; latex bird feet and ink pads; bird puppets to play with; and different kinds of kid-friendly binoculars to try
- Play Bird Charades with older preschoolers. For each small group, whisper the name of a type of bird (such as duck, owl, robin, and hummingbird). Each group acts out the typical behavior of that bird while the rest of the class guesses which bird it is.
- Play Duck, Duck, Goose.
- Use finger plays about birds – see section "Preschool Finger Plays – Birds" for examples.

Vocabulary
Bird, binoculars,
count, tally,
predict, results,
discovery





Teacher-Led Extensions and Assessment Ideas

Try these activities at school to extend your visit.

Prairie Wetlands Learning Center Connections

- To maximize outdoor classroom time at the Prairie Wetlands Learning Center, teachers may conduct steps 4 and 5 in the section “Field Investigation Procedure” at school. Upon arrival at the Prairie Wetlands Learning Center, teachers may provide Prairie Wetlands Learning Center staff with a written list of what students know and wonder for quick review before completing the remaining steps.
- Provide each small group with a felt board and several pieces of large and small birds. Ask the students how many large and small birds they think they will see at the Prairie Wetlands Learning Center and put the corresponding number of pieces of felt on the board. Then they can count the number of small and large birds. Which do they predict they will see more of? After returning to school from their visit to the Prairie Wetlands Learning Center, they can compare the actual numbers of small and large birds they predicted to what they actually saw.
- Make pinecone bird feeders to take home or hang up outside. Watch the birds and squirrels that visit. Are they the same kinds they saw at the Prairie Wetlands Learning Center or different?
- Borrow the “Songbird Blues Traveling Trunk” from the Prairie Wetlands Learning Center. It contains bird puppets, a felt storyboard, books, videos, and many other items. The “Shorebird Traveling Trunk” is also available for free loan. Please call the Prairie Wetlands Learning Center for availability, 218-998-4480.

School Connections

- Adapt the “Migration Headache” activity from Birds! Birds! Birds! (Ranger Rick’s Nature Scope series). Explain to the group that birds migrate (move) in the fall because if they stay, they cannot find food in the winter. Have students pretend to be a bird that migrates, such as a duck. Ask them to ‘migrate’ south for the winter by running from one end of a lawn or gym to the other. Have them migrate back north to find a nest. Nests can be trees or paper plates, or carpet squares scattered around the playing field.
- Feed Baby Bird -- Tell the children they are the mommy or daddy bird. The adult becomes the baby bird. Ask the children to make a nest of twigs and grass on the ground, within a designated area. Have “mommy” and “daddy” birds fly to food source (popcorn in large bowls). Pick it up with their beak (2 fingers in a beak shape) and fly back to baby and feed them. Repeat until popcorn is gone. Mommies and daddies switch with babies, so they get to eat the snack, too.
- “Fly” and “sing” with scarves to music or better yet to music with nature or bird songs. Pretend the scarves are wings and dance to the music. Suggested title: Carnival of the Animals, part 10, The Birds (or Aviary) by Camille Saint-Saëns
- Have children “color” a line drawing of a bird with glue sticks (not crayons). Then children add craft feathers on their bird to make their own feathered friend. Try it with masks, too!





For the Prairie Wetlands Learning Center Educator

Prairie Wetlands Learning Center Theme – the Prairie Pothole Region

Primary Environmental Education Message – The prairie pothole region is valuable and in need of restoration and protection.

Sub-message – Wildlife: The prairie pothole region is home to a variety of resident and migratory wildlife.

Prairie Wetlands Learning Center Environmental Education Objectives – Use scientific methodology to explore the environment (ask questions, hypothesize, collect data, analyze data, form conclusions, make recommendations). (Wildlife and Habitat)

Identify the components and functions of a given ecosystem by observing, counting, and describing the animals and plants in that ecosystem. (Wildlife and Habitat)

2017 Early Childhood Indicators of Academic Progress: Minnesota's Early Learning Standards for Birth to Kindergarten

This lesson helps support the following state science standards for preschool.

Domain: Scientific Thinking - Cognitive

Components ST1-2: Discover

Subcomponent ST1 Observe and question: Child demonstrates awareness and engagement with phenomena, materials, and environment

3-4 years ST1.5 Notices differences or similarities among materials, objects and phenomena

3-4 years ST1.6 Uses experiences to stimulate questions

4-5 years, K readiness ST1.7 Verbally identifies obvious differences and similarities

4-5 years, K readiness ST1.8 Expresses curiosity and/or formulates questions of complex concepts

Subcomponent ST2 Investigate: Child actively shows wonder by demonstrating curiosity of self, others and surroundings

3-4 years ST2.7 Seeks to gain additional knowledge in areas of interests

3-4 years ST2.8 Explores with the intention of finding out something specific

3-4 years ST2.9 Uses many tools as designed

4-5 years, K readiness ST2.10 Starts with a useful, general approach to investigation even if details may be lacking

4-5 years, K readiness ST2.11 Uses discernment to inform exploration

4-5 years, K readiness ST2.12 Uses tools in new and novel ways





Minnesota's Early Learning Standards, continued

Components ST3-4: Act

Subcomponent ST3 Experiment: Child develops and completes a process based on a question, interest or anticipated outcome, adjusting as needed.

3-4 years ST3.11 Makes a simple plan in advance to see what will happen

3-4 years ST3.13 Attempts to make a prediction of an expected outcome

4-5 years, K readiness ST3.14 Makes a plan in advance with an intended outcome

4-5 years, K readiness ST3.16 Makes a prediction when prompted

Subcomponent ST4 Evaluate: Child analyzes, examines, critiques, and synthesizes outcomes in order to draw conclusions

3-4 years ST4.7 Describes all parts of an outcome by comparing, sorting, classifying and/or organizing

3-4 years ST4.8 Open to more than one solution or answer to a problem

3-4 years ST4.9 Begins to rely on or expect evidence, things seen or experienced directly, as reasons for results obtained

4-5 years, K readiness ST4.10 Offers critique of an experience based on examination of outcomes

4-5 years, K readiness ST4.11 Sees outcomes as the result of one's behavior or actions

4-5 years, K readiness ST4.12 Reflects upon evidence and draws reasonable conclusions using data gathered

Components ST5-6: Integrate

Subcomponent ST5 Communicate: Child effectively verbalizes thinking and share thoughts, ideas, conclusions with self and others

3-4 years ST5.9 Verbally expresses ideas/thought process

3-4 years ST5.11 Verbalizes possible explanations for an outcome

4-5 years, K readiness ST5.14 Talks with others about questions, actions, ideas, observations or results

4-5 years, K readiness ST5.15 Articulates and shares aloud explanations based on reasoning and evidence

Subcomponent ST6 Apply: Child leverages and uses knowledge unprompted or in a new situation.

3-4 years ST6.5 Recalls and uses information in new/different experiences

3-4 years ST6.6 Generates new and more complex questions

3-4 years ST6.7 Uses prior experience to identify details that may be relevant

4-5 years, K readiness ST6.8 Compares findings to predictions or expected results

4-5 years, K readiness ST6.9 Identify what to look for, measure, or test to answer questions

4-5 years, K readiness ST6.10 Develops and applies rules

4-5 years, K readiness ST6.11 Determines approach to situation, problem or challenge based on previous experience





References and Resources

For Adults

- *Ranger Rick Nature Scope, Birds! Birds! Birds!* edited by Judy Braus
- *Minnesota Project Learning Tree Early Childhood Supplement* by Minnesota Department of Natural Resources
- *Natural Wonders, a Guide to Early Childhood for Environmental Educators* by the Minnesota Early Childhood Environmental Education Consortium, Marcie Oltman, editor
- *Sharing Nature with Children* by Joseph Bharat Cornell
- *The Sense of Wonder* by Rachel Carson
- Bird Match and Bird Charades activities, International Migratory Bird Day website
- Habitat and Population Evaluation Team on the Fish and Wildlife Service website

For Kids

- *An Egg is Quiet* by Dianna Hutts Aston and Sylvia Long
- *Counting is for the Birds* by Frank Mazzola, Jr.
- *Duckat* by Gaelyn Gordon
- *Duckling, at Home on the Pond* by Sarah Toast
- *Ducks Don't Get Wet* by Augusta Goldin
- *From Egg to Robin* by Susan Canizares
- *Have You Seen My Duckling?* By Nancy Tafuri
- *If I Were a Bird* by Gladys Conklin
- *Our Yard is Full of Birds* by Anne Rockwell
- *Owl Babies* by Martin Waddell and Patrick Benson
- *Quacky Duck* by Paul Rogers and Emma Rogers
- *The Bird Alphabet Book* by Jerry Pallotta
- *Today at the Blue-Bird Café, a Branchful of Birds* by Deborah Ruddell
- *Unbeatable Beaks* by Stephen Swinburne
- *Watch Me Grow, Duckling* by Lisa Magloff
- Bird books, songs, and finger plays on the Step-by-Step CC website
- Pinecone bird feeder craft on the Enchanted Learning website
- Preschool Nursery Rhymes About Animals on the Preschool Rainbow website



Preschool Finger Plays – Birds

Peter and Paula

Two little birds up on a wall,
(one finger on each knee)
One named Peter, one named Paula.
(wiggle each finger when named)
Fly away Peter, fly away Paula.
(fly finger behind back)
Come back Peter, Come back Paula.
(bring finger back to knee)

Little Birds

Up in the sky, the little birds fly (flutter hands)
Down in their nests the little birds rest
(hands in lap)
With a wing on the left and a wing on the right,
(flutter left hand then right hand-as leader, do the opposite hand if facing the children)
The little birdies sleep all night (fold hands under cheek)

Birds

There was one little bird in a little tree,
He was all alone, and he didn't want to be.
So he flew far away, over the sea,
And brought back a friend to live in the tree.
Substitute two, three, etc. for one as you finish the verse.

Five Little Ducks and Five Little Quail

Five little ducks went out to play
(Wiggle five fingers on right hand.)
And met five quail that came their way.
(Wiggle five fingers on left hand.)
The five little quail went to get a snack,
(Take left hand to behind back.)
And the five little ducks went “quack, quack, quack!”
(Put right hand to mouth like a duck's bill and move fingers as imitating duck quacking.)

Robin Red Breast

Way up high, little robin flying just so.
(hands up high)
Quick down low for a worm he must go.
(hands down low)
With a wing on the left and a wing on the right,
(arms extended one at a time, left first, then right)
Fly to your nest for soon it will be night.
(arms flapping arms as if flying)

Credits

This field investigation was developed and written by Prairie Wetlands Learning Center Staff, U.S. Fish and Wildlife Service. Thanks to the following teachers for reviewing this lesson plan: Cori Brown, Fergus Falls Head Start; Debbie Walter, teacher and director at Morning Son Christian Preschool; and Laura Holzworth, Head Start, Fergus Falls. Photos provided by Molly Stoddard/USFWS.