



SASKATCHEWAN
WILDLIFE
FEDERATION

**Classroom in a Box: Exploring
Birds of Saskatchewan**

The purpose of this classroom in a box is to introduce your students to the birds that live in the province, special adaptations they have that make them perfect for living here, and talk about the impacts of habitat loss and climate on their populations. This program will also provide you with the opportunity to get your class outside, allow your students to connect with the nature around them as well as tap into their creative side. Feel free to mix and match activities to suit your class dynamic and curriculum requirements.

Introduction to birds in Saskatchewan

Saskatchewan is home to thousands of birds of all shapes, size, and colours. Some fly thousands of kilometers a year while others hunker down and wait out Saskatchewan's long winters. Some are born hunters with sharp claws and hooked beaks while others prefer insects or seeds. Birds are equipped with countless adaptations making them experts surviving in their chosen habitats. Unfortunately because of habitat loss and climate change their habitats are changing very quickly and some are not able to keep up. Being able to identify Saskatchewan's birds is a great way to start understanding these incredible creatures and bring attention to their importance.

Activity 1: Avian Adaptations

Take a look at the posters provided. What do you notice about these birds? What is the same? What is different? In groups get your class to come up with 5 things that all of the birds have in common. These commonalities do not have to be physical. Think about what they can do, where they live etc... Examples might include:

- a) wings
- b) feathers
- c) beaks
- d) lay eggs
- e) 2 legs
- f) Warm blooded

A couple neat extra facts to bring up is that most birds have hollow bones (why do you think this is the case?), and that they are actually directly descendent from dinosaurs!

Now ask your class to take a look at what is different. This is going to be much easier and the answers are endless. Ask them to think not only of physical features that are different but ask them to think about potential differences in what they eat, where they live etc...

When they have their lists made up talk about some of the more obvious difference that these birds have. Some potential questions to ask:

- A) If you look at the shorebirds they all have long legs with long splayed toes, why do they have these features? What about the grouse? They have very stubby, almost furry looking legs, why do you think they are different?

Answer: Shore birds often wade in water to find food (aquatic insects, snails, small fish), their splayed toes act almost like a snowshoe so they don't sink in the mud. Grouse do fly but spend a lot of time of the ground walking around, so their legs are built to walk instead of cling or wade. They have feathery legs in order to stay warm in colder temperatures.

- A) What sets owls apart from the other birds? They have huge eyes and can turn their heads almost all the way around. Why would their eyes be larger than another group like the falcons? Why can they swivel their heads so much?

Answer: Owls hunt at night which means they need to be able to absorb as much light as they can from the darkness to see. Having large eyes allows them to take in the light they need. Owls' eyes are tube shaped instead of circular in order to see very well, but limits their mobility.

- B) Take a look at the shape of their beaks. Do you think that a bald eagle and a long billed curlew eat the same thing? Are you able to guess what they eat from their beaks?

Answer: Bald eagles are hunters, they eat fish, small mammals, and other smaller birds. They have very sharp hooked beaks that are used to kill their prey and eat them. Long billed curlews eat beetles, seeds, berries, and small crustaceans. They use their long bills to search for food both in the water and in grass.

- C) What sort of things influence the way birds look or behave?

Answer: Food, environment, climate.

- D) Do any of these birds have any special adaptations to help them cope with winter?

Answer: fluffy leg feathers to stay warm, white birds (snowy owl) are white for camouflage

Activity 2: Animal Architecture

Purpose: To examine why and how different species of birds create different structures.

Materials:

- Nest Cards
- Materials to create nests (these can be from nature twigs, grass etc or craft supplies felt, yarn)

Background:

Function of Nests: Birds use their nests chiefly to protect themselves, their eggs, and particularly their developing young from predatory animals and from adverse weather during the breeding season. For protection against predators, birds rely mainly on nests that are inaccessible, armored, camouflaged, or built in colonies that provide the safety of numbers or in places where they enjoy the protection of aggressive animals. A second major function of a nest is to maintain the warmth that promotes incubation of eggs and rapid development of the young. The construction and possession of a nest also stimulates hormone flow and egg laying.

Nest Materials: Like a carton for store-bought eggs, nest materials help to cushion, insulate, and keep the clutch together. Nest materials may include: stones, mud, animal and plant products, human-made artifacts, dirt, saliva, ejected pellets, feathers, down, silk from cocoons and spider webs, snake skins, hair, fur, cow pies, shells, mud, plant fibers, and lichens. The nest lining is used to shed water, deter pests, conceal eggs from predators, and insulate and cushion them. Lining materials may include: leaves, needles, twigs, sticks, reeds, mosses, lichens, grass, seaweed, hair, fur, cow pies, and feathers.

Build a Bird Nest: Divide the participants into groups of 4 or 5. Review the above information on the function of nests and nest materials. Give each group one of the following nest cards and have them try to construct the nest of the bird they are given. Give the groups a set amount of time to construct their nest, then take the whole group on a "tour" of the nests and have the groups explain their construction

and how easy or hard it was for them to build. Have a bird book along to show the group pictures of the birds that they are building nests similar to.

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| <h2 style="text-align: center;">Nest Cards</h2> | <h3 style="text-align: center;">Western Kingbird</h3> <p>Location: In a tree on a horizontal branch against or near the trunk</p> <p>Shape: Cup shaped</p>  <p>Materials: Made of many materials including small sticks, grass, and dried plants</p> <p>Lining: Thickly and finely lined with hair, and plant down.</p> |
| <h3 style="text-align: center;">American Crow</h3> <p>Location: In a tree.</p> <p>Shape: Cup shaped</p>  <p>Materials: Made of branches, twigs, and bark</p> <p>Lining: Lined with shredded bark, moss, grass, feathers, hair, and leaves</p> | <h3 style="text-align: center;">Blue Jay</h3> <p>Location: In a tree on a horizontal branch or in the Y of a tree.</p> <p>Shape: Cup shaped</p>  <p>Materials: Twigs, bark strips, moss, lichen, paper, rags, string, and grass cemented together with mud</p> <p>Lining: Fine rootlets</p> |
| <h3 style="text-align: center;">Western Meadowlark</h3> <p>Location: On the ground in long grass</p> <p>Shape: Cup shaped with a domed canopy of grass. Opening to the nest on one side</p>  | <h3 style="text-align: center;">Brown-headed Cowbird</h3> <p>Location: In a small tree or shrub</p> <p>Shape: Cup shaped</p>  <p>Materials: Does not build a nest. Lays eggs in the nests of other species</p> |

Materials: Coarse grass, bark, and non-woody plants interwoven with surrounding vegetation

Lining: Fine grass and hair

Mourning Dove

Location: In the fork of a horizontal tree branch, or on the ground.



Shape: Plate shaped. Flimsy nest.

Materials: Sticks and twigs.

Lining: Fine materials.

Western Grebe

Location: On the water, usually anchored to or built up over live vegetation.



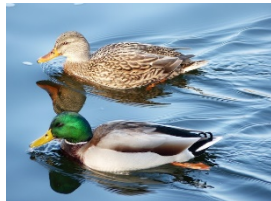
Shape: Floating platform.

Materials: Compact mass of fresh and dead vegetation.

Lining: Aquatic Vegetation

Mallard Duck

Location: On the ground usually near water, hidden in vegetation



Shape: Depression deep enough to prevent eggs from rolling away

Materials: Made of cattails, reeds, grass

Lining: Down (feathers)

Sharp-tailed Grouse

Location: On the ground, hidden in grass under shrubs



Shape: Shallow depression

Materials: Nest is just made from a depression in the ground

Lining: Grass, leaves, and ferns.

Red-tailed Hawk

Location: In the Y of a large tree.



Shape: Platform.

Materials: Nest is a solid mass made with bulky sticks and twigs.

Lining: Inner bark strips and green leaves

American Goldfinch

Location: In a tree, in a fork in a branch



Shape: Cup shaped, woven so tightly that the nest holds water.

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| | <p>Materials: Non-woody plants and other pliable vegetation. Caterpillar webbing and spider silk used to bind outer rim.</p> <p>Lining: Plant down.</p> |
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Resources: Saskatchewan Wildlife Federation's "Wonders of Wildlife" 2008.

Activity 3: Migration Headache

Native prairie grassland is the one of the most endangered habitats in the world and with 200 acres of prairie being lost every day. It is not only grasslands disappearing though, wetlands and forests among other habitats are being lost every day due to changing climate, droughts, development, and agriculture. This has a major impact on migrating birds who don't only need a place to live in both the winter and summer but they also need places to rest in between their two destinations. It is critical that we understand the impact that this loss has on the wildlife that lives in the province. In this active activity you will explore different reasons why habitat is lost why it is so important to protect as much as we can.

Materials:

- Place markers (pylons, paper plates, hula-hoops etc) 1 for every 3 students
- Large playing area (gym or field)

Directions:

Put the pylons in two equal groups on either end of the playing area. Tell your students that the place holder represents suitable habitat for a migrating bird and that each suitable habitat is large enough for 3 birds to live in. Explain to your students that there are many different factors that affect survival of migratory birds, both positively and negatively. Get them all to line up on one end of the playing area, the "summer habitat". When you say "migrate", they all run to the other end of the playing area and find a piece of habitat in their "winter habitat". In the first round they should all be able to find a place to rest. Before the next migration remove a pylon and explain that a wetland has been drained to create more farmland therefore removing some of their habitat. Now this creates competition for the remaining habitat. For those who cannot find a piece of habitat, ask them to stand on the side and that there will be opportunity for them to re-enter. Each migration is an opportunity to introduce different reasons why habitat is disappearing. Some like urban expansion can remove more pylons because it has a greater impact. There are also reasons to add habitat or make it easier for them to migrate like wetland restoration or hunting regulation. Below you can find other factors that limit and favour migratory bird survival.

Extension:

You can allow students in groups of three to choose a species of bird to represent and tell them that in order for them to make it to the next round all of the birds of their species have to claim the same pylon.

Adapted from "Migration Headache" from the Canadian Wildlife Federation's Project Wild 2017

| Factors limiting survival of populations of migratory birds | Factors favour survival of populations of migratory birds |
|---|--|
| <ul style="list-style-type: none"> • Wetland drainage • Drought • Pollution • Illegal hunting • Starvation • Predation • Disease • Storms • Urban sprawl • Oil spills | <ul style="list-style-type: none"> • Preservation of wetlands and grasslands • Restoration of habitat • Dynamic balance with predators • Human action aimed at protecting and restoring wetlands (this includes education!) • Regulation of hunting and human predation • A living roof has been built on a large building |

Activity 4: What can birds tell us?

Birds are great indicators of environmental health. They occur in all ecoregions of Saskatchewan and they are some of the first animals to respond to changes in the environment. Learning to identify different species is not only a fun thing to do with friends or family it can also be a huge help to scientists who study birds, their movement, and populations. This is super important especially when they are losing habitat so quickly. Many citizen science programs exist where you can submit your findings and it can help out scientists all over. A couple to check out here in Saskatchewan are iNaturalist and the Saskatchewan Breeding Bird Atlas.

To start visit your local library and ask for any relevant bird identification books. Some examples include *Birds of Western Canada*, *Audubon Guide to North American Birds*, *Sibley Guide to Birds* etc... Audubon also has a free app with over 800 bird species to help you figure out which ones you are looking at. There are a ton of online resources out there to help you out as well. Here are a couple to get you started:

https://www.birds.cornell.edu/home/?_hstc=75100365.19d097d1e8842b60cc2c534e71696bb2.1570210973416.1570210973416.1575928127392.2&_hssc=75100365.1.1575928127392&_hsfp=3720110880

<https://ebird.org/home>

https://naturecanada.ca/discover-nature/about-our-birds/bird-e-books/?gclid=EAlaIqobChMl4ImymYmu5gIVip6zCh0DZg34EAAYAiAAEgLjI_D_BwE

Using the binoculars provided, take your class on a walk in a local park, trail, or wildlife land and get them to try and identify as many birds as they can. If you have an idea of what sort of birds you are likely to find in your area you can make up a simple scavenger hunt for your class or a checklist that they can complete.

Here are some tips for beginner bird watchers:

- Try different locations not only will this increase the chance of you seeing birds but also the chances of seeing a variety of different types. Some birds like tall trees while others prefer shrubs and tall grass.
- Try the morning birds are hungry in the morning when they wake up so this is a great chance to see them out and about looking for food.
- Set up a bird feeder if you aren't having luck finding any.
- Be as quiet as you can even though you are looking from a distance you can still startle the birds you are watching.
- Be patient! You might not see them right away but that does not mean they aren't there!

Curriculum links

Science 4

- HC4.2
- HC4.3

Science 6

- DL6.4