



With funding from



YYC's Young Citizen Scientists Pre & Post Program Activities and Resources

Cross-Curricular Ideas:

Encourage your students to notice birds wherever they are. Start and build a list of birds observed by your class. Build on **math** skills by creating tally or bar charts of birds observed.

Use the students' "I Wonder" questions as a starting place for inquiry-based **science** or research projects.

Create a schoolyard food web based on your students' discoveries from the Biodiversity Quest. If students are unable to identify plants, trees, and insects, use the *iNaturalist* photo-ID tool to help.

Learn more about birds by playing the games and activities outlined in the first card of the Focus Bird ID Card set in your Citizen Science Kit.

Studying bird calls and songs can enrich your **music** class. Listen to a bird call or song on the Merlin Bird ID App and ask your students to sketch the sound. If the pitch of the sound goes up, draw a line that goes up, etc. Do the notes repeat?

<https://www.allaboutbirds.org/how-to-learn-bird-songs-and-calls/>

Find out which of the birds your students have observed are introduced species (eg. House Sparrows and European Starlings). Find out why and when they were brought to North America and the effects they have had on native species.

Using the range maps on the Merlin Bird ID App or in the Field Guide books included in your Citizen Science Kits, create a list of birds found in different regions of Alberta (Gr. 4 **Social Studies**) or Canada (Gr. 5 **Social Studies**). Which birds migrate and which stay year-round?

Work on an **art** project based on your focus bird.

Bird Information and Resources:

All About Birds. Find great information on every species of bird here on this great website. <https://www.allaboutbirds.org/>

Bird Studies Canada. Canada's national charity for bird research, Citizen Science, education, and conservation.

<http://www.bsc-eoc.org/index.jsp>

Species at Risk. The Alberta Government's Alberta Wild Species General Status Listing – 2015

<http://aep.alberta.ca/fish-wildlife/species-at-risk/albertas-species-at-risk-strategy/general-status-of-alberta-wild-species/documents/SAR-2015WildSpeciesGeneralStatusList-Mar2017.pdf>

How Birds Fly Article on Science Learning Hub

<https://www.sciencelearn.org.nz/resources/303-how-birds-fly>

Migratory Bird Flight Animations Billions of Birds Migrate. Where Do They Go? Migratory Birds have Made Their Thousand-Mile Flights for Millenia, But We are Just Now Learning to Map their Mesmerizing Journeys. *National Geographic's site showing animated bird migrations.* <https://www.nationalgeographic.com/magazine/2018/03/bird-migration-interactive-maps/>

Bird-themed activities:

Science Buddies. Great science projects you can do with kids of all ages to encourage interest in birds.

<https://www.sciencebuddies.org/blog/2016/06/backyard-bird-science.php?from=FB>

Audubon. Get outside – Bird-friendly activities.

<http://www.audubon.org/get-outside/activities>

Some recent articles, highlighting the importance of this work

One in Eight Bird Species at Risk of Extinction: Report *Canadian Geographic*, 27 April 2018

<https://www.canadiangeographic.ca/article/one-eight-bird-species-risk-extinction-report>

How Citizen Scientists are Helping to Protect Migratory Birds *Canadian Geographic*, 23 April 2018

<https://www.canadiangeographic.ca/article/how-citizen-scientists-are-helping-protect-migratory-birds>

A third of North American birds at risk: three-country study *The Calgary Herald*, 18 May 2016

Fully one-third of all North American bird species need quick help to stop them from disappearing, says the first continent-wide bird study conducted jointly by Canada, the United States and Mexico.

<http://calgaryherald.com/news/local-news/a-third-of-north-american-birds-at-risk-three-country-study>

Warning of 'ecological Armageddon' after dramatic plunge in insect numbers *The Guardian*, 18 Oct 2017

Three-quarters of flying insects in nature reserves across Germany have vanished in 25 years, with serious implications for all life on Earth, scientists say

<https://www.theguardian.com/environment/2017/oct/18/warning-of-ecological-armageddon-after-dramatic-plunge-in-insect-numbers>

Tragedy of the Common by JB MacKinnon *Pacific Standard*, 17 Oct 2017

The extinction crisis extends far beyond rare and endangered species.

<https://psmag.com/magazine/tragedy-of-the-common>

Beak to beak: The Importance of Bird and Biodiversity Areas and Migratory Bird Sanctuaries on Nature Conservancy of Canada Website, 13 Mar 2018

The extinction crisis extends far beyond rare and endangered species.

<http://www.natureconservancy.ca/en/blog/beak-to-beak-the-importance.html>

What is Biodiversity and Why Does it Matter to Us? *The Guardian*, 12 Mar 2018

The air you breathe, the water you drink and the food you eat all rely on biodiversity, but right now it is in crisis – because of us. What does this mean for our future and can we stop it? <https://www.theguardian.com/news/2018/mar/12/what-is-biodiversity-and-why-does-it-matter-to-us>

The Radical Otherness of Birds *The Guardian*, 23 Mar 2018

Birds are not just diverse, vivid and extraordinary. They can also save our souls – let's protect them <https://www.theguardian.com/environment/2018/mar/23/the-radical-otherness-of-birds-jonathan-franzen-on-why-they-matter>

Teaching in the Outdoors:

Nature as a Classroom. The David Suzuki Foundation's Guide to teaching outdoors.

<http://davidsuzuki.org/downloads/NatureAsAClassroom.pdf>

Citizen Science – birds:

eBird. A place to submit your bird observations as well as explore world-wide data on bird observations.

<http://ebird.org/>

BirdSleuth. The K-12 education program of the Cornell Lab of Ornithology.

<http://www.birdsleuth.org/>

Project Feederwatch. Feeder watchers count the birds they see at their feeders from November through early April.

<http://feederwatch.org/>

Driven to Discover. Citizen science curriculum for youth programs. Includes Facilitator's Guide and Investigative Field Journal for birds. In depth guidance on guiding students to conduct their own inquiry-based investigations as an extension to their involvement in Citizen Science.

<https://www.extension.umn.edu/environment/citizen-science/driven-to-discover/resources/curriculum/#schools>

Worldwide Bird Count Days

The Great Backyard Bird Count. Join birdwatchers from all around the world for the GBBC every February.

<http://gbbc.birdcount.org/>

The Global Big Day. Wherever you are in the world, go eBirding on May 5, 2018 to be part of birding's biggest day!

<https://ebird.org/news/global-big-day-5-may-2018>

Christmas Bird Count. Be a part of the longest running citizen science project ever. Find a Christmas Bird Count event near you during the holidays.

<http://www.audubon.org/conservation/science/christmas-bird-count>

Apps:

Merlin Bird ID by Cornell Lab of Ornithology

iNaturalist

Recommended Books:

Backyard Birds: An Introduction by Robert Bateman (includes beautiful original artwork by this beloved Canadian artist)

Why Birds Do That: 40 Distinctive Bird Behaviors Explained & Photographed
by Michael Furtman

Natural Curiosity 2nd edition: A Resource for Educators: The Importance of Indigenous Perspectives in Children's Environmental Inquiry by Doug Anderson, Julie Comay, and Lorraine Chiarotto

Green Birding: How to See More Birds and Protect the Environment at the Same Time
by Richard Gregson

Games, Ideas, and Activities for Primary Outdoor Learning
by Paul Barron

The Sibley Guide to Bird Life and Behavior
By David Allen Sibley

Nature Circles: Outdoor Schoolyard adventure cards
Acorn Naturalists

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Other Citizen Science Projects:

Bumblebee Watch <https://www.bumblebeewatch.org/>

NatureLynx <http://naturelynx.ca/>

Journey North <https://www.learner.org/jnorth/>

The Great Sunflower Project <https://www.learner.org/jnorth/>

The Lost Ladybug Project <http://www.lostladybug.org/>

SciStarter. A place to find, join, and contribute to science through more than 1600 research projects. <https://scistarter.com/>

Educational Videos:

Wild Kratts. “Birds of a Feather” episode.

Ale Bird of Paradise uses his showy bright feathers and extraordinary dances to display to potential female mates that they are healthy and strong.

https://www.youtube.com/watch?v=Zr_KRcWXrmg

Wild Kratts. “Falcon City” episode.

See how the peregrine falcon harnesses the power of gravity to reach high speeds.

<https://www.youtube.com/watch?v=9B3vTBScm-là>

Wild Kratts. “Raptor Roundup” episode.

Learn about classifications of birds of prey

<https://www.youtube.com/watch?v=wtL3YGNUiAU>

Wild Kratts. “Osprey” episode.

Animal species adapt and specialize in order to survive in their environments.

<https://www.youtube.com/watch?v=V2GVkG3IKpU>

Wild Kratts. “To Touch a Hummingbird” episode.

Animals have to maintain a specific diet or lifestyle in order to survive.

<https://www.youtube.com/watch?v=k-kJ1EloN3I>

Zaboomafoo. “Who’s In the Egg” episode.

<https://www.youtube.com/watch?v=9q-Dm3k4Vmw>

<https://www.youtube.com/watch?v=n6YJ5DSw1a0>