

THE GREAT BACKYARD BIRD COUNT

February 12-15, 2021

Birds are fascinating creatures. They can lay eggs and sing (even if it's only a simple *chirp* or *screeeech*), they have feathers and beaks, and most species can fly! Birds are also the only dinosaurs left on our planet, the sole survivors of the entire dinosaur family tree. **Ornithology** is the scientific study of birds, and scientists who study birds are called **ornithologists**.



Hummingbird



Chicken

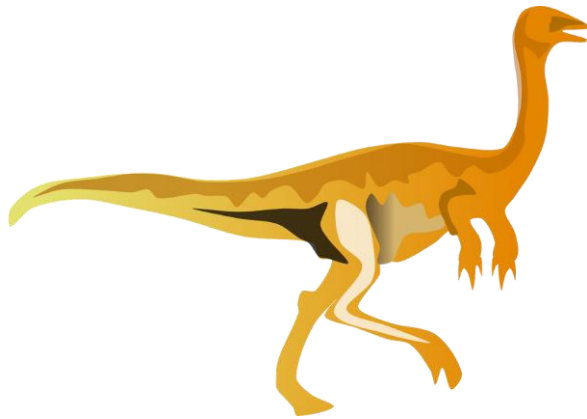


Hawk



Ostrich

Scientific research in ornithology and a fossil record of bird-like dinosaurs stretching back 150 million years tell us that birds evolved from a group of meat-eating dinosaurs called **theropods**. Tyrannosaurus rex was also a member of that group of meat eaters, but birds evolved from a much smaller variety of theropod.



Gallimimus, a theropod dinosaur



Fossil of a bird-like dinosaur

Each spring and fall, birds travel between their summer and winter homes and then back again. This seasonal movement is called **migration**. Birds migrate from places where food supplies and nesting spots are limited to places where there are more of both. Some species don't migrate because they live in areas where there is plenty of food all year long. For those birds that do have to travel, they bulk up their body weight by eating lots of food to prepare for the trip.

Some birds migrate a short distance while others fly thousands of miles between their homes. Some fly non-stop while others break up the trip to eat and rest along the way. Some species travel alone and others stick together in large flocks.



It's amazing that these creatures are able to find their way on such long journeys, but they have excellent skills to help them **navigate**, or find their way from place to place. Birds often follow the same migration route each year. Some learn their migration path from their parents, while others use visual landmarks, sound, the position of the Sun and stars, or the Earth's magnetic field to navigate between migration spots.

You can watch local birds migrate through your neighborhood and also participate in a science project called the **Great Backyard Bird Count**, an event that lasts 4 days each February. The project was launched in 1998 by the Cornell Lab of Ornithology and National Audubon Society. In 2009, Birds Canada joined the project.

For 2021, the count takes place February 12-15. People around the world will watch and count as many birds as they can find, then report those numbers back to scientists managing the project. That information will help researchers understand bird populations just before the start of the annual spring migration. It's easy to take part in the project. Ask friends and family to join you – count birds in your yard, around your neighborhood, in a park, or along a favorite trail. All you need to do is watch the birds for 15 minutes or more, at least once over the four days of the count, then tell researchers what you see!

This type of opportunity to help scientists with their research is called **citizen science**. Citizen science means anyone (including YOU!) can participate in scientific research by observing, collecting and sharing **data** (facts such as numbers, words, measurements, observations, or descriptions) with scientists. You collect and share information, and scientists combine it with data collected by many other citizen scientists. That all adds up to lots of valuable scientific data!

For more details about the Great Backyard Bird Count, visit these links:

- ✓ About this project: <https://www.audubon.org/conservation/about-great-backyard-bird-count> and www.birdcount.org
- ✓ eBird, an online database of bird observations that provides scientists, researchers and others with real-time data: <https://www.birdcount.org/ebird-on-computer/>
- ✓ Cornell Lab's online bird ID guide: <https://www.allaboutbirds.org/guide/search>

ACTIVITY: Join the Great Backyard Bird Count, Feb. 12-15, 2021 (NOTE: Simply watch and count birds for 15 minutes or more, at least once over the four days of the count, and report what you see.)

To participate, you will need a grownup to help you get set up. If you plan to record your counts and submit them from a computer, then your grownup will need to create a [free account](#) with The Cornell Lab, then use [eBird](#) for recording counts on your computer, or your grownup can install Cornell Lab's free [Merlin Bird ID](#) app on a smartphone or tablet for help identifying bird species and then reporting your sightings to the lab.

Materials

- Access to a computer connected to the internet, a smart phone or a tablet
- A [free account](#) with The Cornell Lab, if you're using a computer (and not a smart phone or tablet)
- Merlin Bird ID app to identify bird species and submit your count directly to the Cornell Lab, if you're using a smart phone or tablet



- Some way to identify the different bird species that you'll see:
 - bird ID app for smart phone or tablet
 - **or** a copy of a bird ID guide such as *Peterson Field Guide to the Birds of North America*, *National Geographic Field Guide to the Birds of North America*, or *The Sibley Guide to Birds*
 - **or** computer access to use an online bird ID guide such as this one on Cornell Lab's website: <https://www.allaboutbirds.org/guide/search>
 - Pencil, pens, or markers
 - Tally sheets (included at the end of this document)
 - Optional: binoculars, additional paper for recording notes and/or sketching birds that you see
1. Print out tally sheets, which include one page formatted with common bird species found in the Reno area plus one page for all other species.
 2. Download the [Merlin](#) bird app for your smart phone or tablet or if you're using a computer to report data, set up a [free account](#) with Cornell Lab. (The account data is shared with Merlin, eBird, Project FeederWatch and other research projects at the Cornell Lab of Ornithology.)
 3. Follow instructions for your device at "How to participate": <https://www.birdcount.org/participate/>
 4. Watch birds for at least 15 minutes on Feb. 12, 13, 14, and/or 15. Notice their size, color, location, song, and anything else that might help you identify unfamiliar species. If you have binoculars, then you can get a much better close-up view of feathers and markings.
 5. If you plan to enter your sightings on a computer, consider making a list while watching the birds and enter all of your results later. If you use the Merlin app, you can identify species and enter your count all at the same time.
 6. Identify the bird species you see using one of the bird ID apps, guidebooks, or online ID guides. Write down the name of the species on the tally sheet.
 7. Keep track of how many birds of each species you see during the time slot by marking them down on the bird count tally sheet.
 8. Once you're ready to stop for the day, count how many of each species you saw and write the total down for each on your tally sheet.
 9. Enter your data on the eBird page: <https://www.birdcount.org/ebird-on-computer/>
 10. You can start entering bird lists at midnight local time on the first day of the count. Data entry remains open until March 1, but the data you enter should only be from counting during the four days of the Great Backyard Bird Count.





Thanks for taking part in citizen science! Your observations will be very useful for researchers. We hope you've learned a lot about the different birds that visit your neighborhood and that you'll look for more opportunities to participate in other citizen science projects.

Stay tuned for more citizen science projects in future STEAM activities!



AMAZING MIGRATORY FEATS

(from Audubon Adventures, http://www.audubonadventures.org/migration_kids.htm)

-  The Bar-headed Goose regularly flies as much as 5-1/2 miles above sea level, over the highest mountains in the world, while it is migrating.
-  The Arctic Tern can fly up to 60,000 miles a year migrating between the Arctic and Antarctica.
-  The Great Snipe can fly up to 60 miles per hour!
-  The Bar-tailed Godwit can fly nearly 7,000 miles over water for eight days without stopping.

ADDITIONAL RESOURCES

Materials from the Washoe County Library System:

[*Bird*](#) by David Burnie

[*Birds*](#) by Kevin Henkes

[*Birds : Nature's Magnificent Flying Machines*](#) by Caroline Arnold

[*Citizen Scientists : Be a Part of Scientific Discovery from Your Own Backyard*](#) by Loree Griffin Burns

[*Everything You Need to Know About Birds*](#) by DK Publishing

[*Fly With Me : A Celebration of Birds Through Pictures, Poems, and Stories*](#) by Jane Yolen

[*Great Migrations \[DVD videorecording\]*](#) by National Geographic Television

[*Look Up!: Bird-watching in Your Own Backyard*](#) by Annette LeBlanc Cate

[*Migration*](#) by Gail Gibbons

[*Migration Nation : Animals on the Go from Coast to Coast*](#) by Joanne O'Sullivan

[*My Book of Birds*](#) by Geraldo Valério

[*National Wildlife Federation's World of Birds : A Beginner's Guide*](#) by Kim Kurki

[*Two Little Birds*](#) by Mary Newell DePalma

[*Wild Birds*](#) by Joanne Ryder

[*Winged Migration \[DVD videorecording\]*](#) by Galatee Films

Videos:

National Geographic, "Are Birds Modern-Day Dinosaurs?" <https://youtu.be/eaWb0UUNc00>



Natural History Museum, "Why are Birds the Only Surviving Dinosaurs?" <https://youtu.be/9GVvtKK5sFw>

PBS, "Science Trek, D4K: Bird Migration Video Short"

<https://www.pbs.org/video/d4k-bird-migration-video-short-guaj9g/>

PBS Kids, "Ready Jet Go! | Bird Migration" <https://youtu.be/Nrkvp3xOCpM>

Websites:

The Cornell Lab, All About Birds, The Basics Of Bird Migration: How, Why, And Where

<https://www.allaboutbirds.org/news/the-basics-how-why-and-where-of-bird-migration/>

The Cornell Lab, K-12 Education <https://www.birds.cornell.edu/k12/>

Lahontan Audubon Society, Area Birding Guide for the Reno/Carson City/Fallon Region

<https://www.nevadaaudubon.org/area-birding-guide.html>

National Audubon Society, Audubon for Kids, Game: Follow a Bird's Migration Story

<https://www.audubon.org/news/game-follow-birds-migration-story>

National Audubon Society, Birding the States, Birding in Nevada

<https://www.audubon.org/news/birding-nevada>

PBS Kids, SciGirls, Citizen Science Fun for All! <https://pbskids.org/scigirls/citizen-science>





The Royal Society for the Protection of Birds, Facts About Birds

<https://www.rspb.org.uk/fun-and-learning/for-kids/facts-about-nature/facts-about-birds/>



Tally sheet for THE GREAT BACKYARD BIRD COUNT - Feb. 12-15, 2021

Date:	Start Time:	End Time:	Total Time:
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Species (or description):	Tally:	Total tally:
 Mourning dove		
 House finch		
 Robin		
 White-crowned sparrow		
 Northern flicker		
 Gambel's quail		
 Goldfinch		



Species (or description):	Tally:	Total tally:

Additional notes and sketches:

