



My nature connection

MIGRATION
INVESTIGATION

GRADE: 5-12
TIME: 40 MIN

How can birds soar over 6,000 miles in a single year?

INTRODUCTION

Birds play an important role in the ecosystem through the energy they give to the food web. They help to control the species population by eating some native species and being food for others. As pollinators, birds help spread seeds vast distances, primarily through movement along their migration flyways. Flyways are the paths birds take from their breeding ground—where they lay their eggs—to their wintering ground, where they spend colder months. These paths are often thousands of miles long. On the West Coast, shorebirds migrate over the Pacific flyway from the Arctic to Baja California, stopping at different locations where people celebrate their journey and work to help protect them.

How do you think birds are able to make a +3,000 mile journey like this one? Remember, this is just one way!

Birds use the sun, moon, stars, magnetic fields and their memory to guide them.

WHAT YOU'LL NEED

Paper

Pen/Pencil

Backpack/bag for carrying map if "migrating" on wheels

STUDENTS WILL:
Learn about bird migration and some of the dangers birds face on their journey.
Create their own migration map.

SETTING:
A spot to explore a short distance from home.

MINNESOTA BIRDS

Hundreds of bird species nest in Minnesota each year, including hawks like the Osprey, waterfowl like the Canada Geese and the Common Loon, and songbirds like the Prothonotary Warbler. Like many birds in the Midwest, this warbler's migration flyway winds along the Mississippi River--from Minnesota to tropical forests in South America.

Birds also face many dangers on their journeys.



Prothonotary Warbler

What dangers do you think a bird would run into on their flyway?

Destruction of habitats like wetlands and forests for farming and urban development makes for inadequate food and shelter for many birds. This leads to **habitat fragmentation** where large areas of habitat are destroyed, leaving small isolated habitats for wildlife to survive. Other animals – like human hunters, house cats, squirrels, and larger birds – can be a threat.

In cities, infrastructure like large windows and lighting can be especially dangerous for birds who accidentally fly into the glass and towards bright lights.

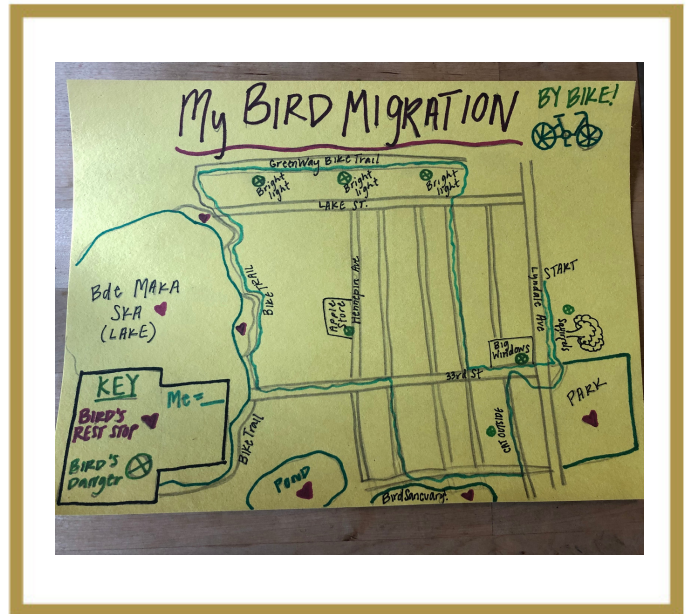
ACTIVITY (40-50 MINUTES)



Now you have the opportunity to go on your own (much shorter) migration.

- While thinking about the things that you've learned about bird migration, plan out a method for your own migration to another location. Pretend that your home is a bird's wintering ground, and your end migration destination is the breeding ground. This could be a park, a lake, or any other place you see birds spending time. The distance from home is dependent on age and comfort level but can either be a couple of blocks or a mile from home.
- Create a rough draft map of the route you will take to reach your end destination. Add a few streets or trail names, common buildings, local parks, etc. – any additional features that would help to understand your map. You can either work from memory or use a site like Google Maps to help name streets.

- Next, choose a mode of transportation that makes you feel most like you're flying. This could be a bicycle, scooter, rollerblades, skateboard, running, walking, etc. If you have the option, choose a mode of transportation that gets your body moving and taking deep breaths of fresh air.
- Make a key in the corner of your map to remember two important symbols. As you make the migration journey, you'll consider:
 - What *dangers* might a bird encounter on this journey?
 - What places could make excellent bird habitat or *resting spots*?

NATURALIST'S EXAMPLE



Naturalist's note: On my map (at right), I used a heart  to represent rest areas and a circle with an  to represent points of danger for birds. You can use these symbols or make your own.

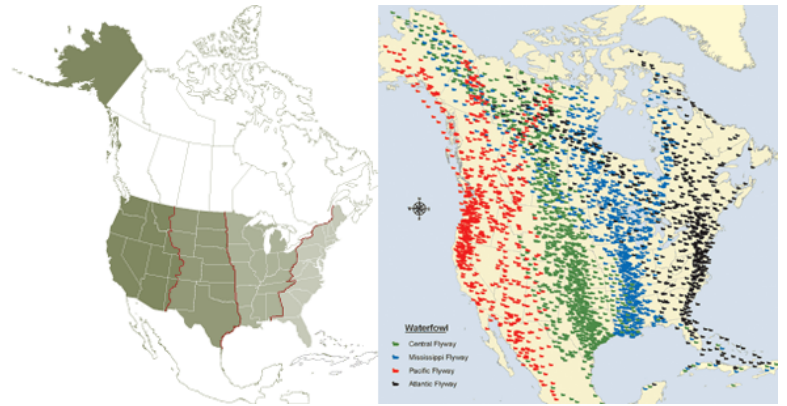
- Put your paper and pen/pencil in a bag/backpack and start "flying" on your journey! Remember to think like a bird - pull over on your journey periodically to mark your map with the possible bird dangers and resting spots you see.

KEEPING SAFE:

1. Make sure to watch out for traffic, and try to stay on trails when possible. Choose to travel on neighborhood roads rather than busy streets.
2. It is also encouraged that you inform a guardian. If you don't usually travel alone in your neighborhood, ask a guardian to accompany you.
3. Do this activity during daylight.

CONNECTING WITH QUESTIONS:

- Are there specific areas in your neighborhood where many birds are congregating? Why do they like this area?
- Do you think there is enough habitat for birds to enjoy your neighborhood? Why or why not?
- What could you do in your community to help protect neighborhood birds?



EXTENSION: GRADES 8-12

Young people are making a difference by leading environmental movements around the world. Ask students to write a proposal for bird habitat restoration in their neighborhood. This could be through the addition of bird feeders, more trees, a bird sanctuary, or whatever they feel is necessary. The proposal should include an issue with a goal in mind, the groups of people involved in addressing it, and action steps taken to reach the goal.

Consider sending the proposal to leaders in the community like the City Planning Commission or your local representatives.

RESOURCES:



The Cornell Lab of Ornithology provides great resources on bird migration, including live footage in nests around the country.

EDUCATION STANDARDS

Social Emotional Learning Competency: Self-Awareness, Social Awareness

Grade Level

Science Education Standard

Grade 5

5.4.1.1.1 Describe how plant and animal structures and their functions provide an advantage for survival in a given natural system.

Grade 6

6.1.3.1.1 Describe a system in terms of its subsystems and parts, as well as its inputs, processes and outputs.

Grade 7

7.4.4.1.2 Describe ways that human activities can change the populations and communities in an ecosystem.

Grade 8

8.1.1.2.1 Use logical reasoning and imagination to develop descriptions, explanations, predictions and models based on evidence.

Grades 9-12

9.4.4.1.2 Describe the social, economic and ecological risks and benefits of changing a natural ecosystem as a result of human activity.