



# Teacher Guide

## UNIT 2 LESSON 5: MIGRATION

### Theme

Migration is one important behavioral adaptation that can help birds survive due to seasonal changes in their environments.

### Missouri Science Standards: LS1.B.1; LS2.A.2

### Vocabulary



**Migration** – The large-scale movement of members of a species to a different environment. Bird migration is the movement of birds between their breeding grounds and their non-breeding grounds.

**Breeding grounds** – Location where a species of bird breeds. Typically, during the summer.

**Non- Breeding grounds** – Location where a species of bird spends the winter.

**Stopover Site** – Where species of bird might rest along their migration route between their breeding and non-breeding grounds.

**Flyway** – Migration route birds follow; in North America, they are called the Pacific Flyway, Central Flyway, Mississippi Flyway, and Atlantic Flyway.

**Range map** – These maps show the summer breeding range, winter non-breeding range, year-round range, and migration range of each bird species; can be used to determine which bird species can be found in your area, and what time of year they are there.

### Common Misconceptions to Watch Out For:

- **All bird species migrate.** Some species do not migrate in response to fluctuating resources.
- **Birds fly south for the winter.** Birds migrate to an area where the resources they need can be found. This may be a long distance (to the tropics, a coast, or even a different elevation).



## Video 2: Bird Migration

*Video Description: Join a Cornell University Naturalist Outreach student to better understand bird migration. This beautiful STEM video brings to life core ideas from the Next Generation Science Standards. See (<http://blogs.cornell.edu/naturalistou...>) and NYS 4H STEM pages for guides and worksheets on birds and bird migration. This video is a co-production of Dr. Linda Rayor, the Ithaca College Park Media Lab, and NYS-4H.*

Video 2 link: <https://www.youtube.com/watch?v=CwIT9pv4khw>

Follow-Up Questions:

1. True or False? Migration is the seasonal movement from one place to another.
2. True or False? All birds migrate during the day.
3. Fill in the blank. Birds in North America follow four major flyways that travel along major landmarks like coastlines, mountain ranges, and \_\_\_\_\_.
4. True or False? Birds that migrate at night will use the stars to navigate.
5. Fill in the blanks. Perhaps the greatest impact humans have on bird migration is through \_\_\_\_\_.

## Video 2: Where Do Birds Go in Winter?

*Video Description: As winter approaches, V-shaped flocks glide overhead as the world's birds begin their long treks to warmer climates. Humans used to have some pretty crazy theories about where birds went for winter, like the moon, or to the bottom of the ocean. How did we learn the real story? And where DO birds go for winter? What are the longest bird migrations? How do birds store up energy for their long journey? How do birds navigate? Why do they fly in a V-shape? Find out in this video by PBS It's Okay To Be Smart YouTube Channel!*

Video Link: <https://www.youtube.com/watch?v=ds2XFvSQzBg>

Follow-Up Questions:

1. True or False? People and scientists always knew that migration was the explanation for where birds went in the winter.
2. True or False? The flying 'V' is a trick to fly more efficiently.
3. Fill in the blank. Tiny, iron-rich crystals were discovered in the eyes and \_\_\_\_\_ of many birds which allows them to sense the Earth's magnetic field.

## Activity: Charting Bird Migration

*Activity Summary: Students will use community science to learn about migratory birds in their local area and create graphs comparing migratory and non-migratory species.*

*Teacher Notes:*

- *Student Instructions included in packet*
- *Students will explore real- life eBird data collected by community scientists.*

## Bonus Video: Thousands of Cranes Take Flight in One of Earth's Last Great Migrations

*Video Description: Around 600,000 Sandhill cranes flock to Nebraska's Central Platte River Valley each spring in one of the world's largest and oldest remaining bird migrations. Video by National Geographic.*

Video Link: <https://www.youtube.com/watch?v=COkT0Rx9gEI>

## Concluding Questions/Assessment

*\*Student worksheet included in packet.*

1. What is migration and why do birds migrate?
2. Describe three ways birds find their way during migration.
3. Can you think of another type of organism that might migrate? State your reasoning below.
4. What do you find most fascinating about bird migration?

