

4-H NATURE CONNECTIONS



WHY DO SOME BIRDS MIGRATE?

Purpose:

Explore reasons some birds migrate connecting with the basic needs of all living things: food, water, shelter, and space.

Location:

Open space outdoors

Time required:

45 minutes

Materials:

Note: Read all of the directions before purchasing materials.

- Nature journal (one per participant)
- 25 feet of rope
- Colored craft sticks (about 100 each of 4 different colors)
- 2 cones or flags

Background:

Migration is a pattern of behavior in which animals travel from one habitat to find food, water, shelter, or space. While all animals have these same basic needs, different animals require different amounts for different reasons. Two important factors “make migration different from other types of animal movement: First, migration happens seasonally, and second, migration involves a return journey” (National Geographic, n.d.).

Birds generally migrate for food or nesting needs. Cornell University (2021) describes four bird migration patterns based on distance traveled: permanent residents, short-distance migrants, medium-distance migrants, and long-distance migrants.

- Permanent residents, such as the cardinal, do not migrate because they find enough food where they live all year.
- Short-distance migrants, such as the partridge or quail, migrate but do so within a small area.
- Medium-distance migrants, such as the blue jay, migrate within a few hundred miles of their home.
- Long-distance migrants, such as Kirtland’s warbler, migrate between continents. Over 350 species of North American birds are long-distance migrants.

(Cornell University, 2021)

Getting Ready:

- Place the rope along one side of the open space you’ve chosen for this activity. This is where the birds will return after each “season.”
- Using the cones or flags, select and mark the locations for your local and migratory habitats. The local and migratory habitats should be roughly the same distance from the resting rope but in different directions, forcing the participants to choose to fly to one or the other during the winter season. One example of how your space may be set up can be seen in Figure 1, which follows.



Birds migrating during the sunset.



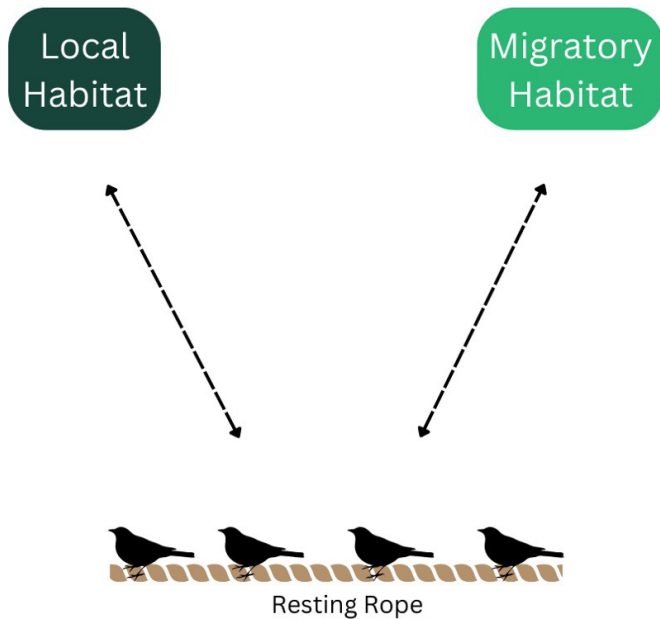


Figure 1. Locations of local and migratory habitats in relation to resting rope.

o Disperse colored craft sticks around the marked locations. Choose a color ahead of time to represent a basic need of birds. For example, red might represent food, blue might represent water, yellow might represent shelter, and green might represent space.

- Year One: Disperse some of each color around the local habitat. (Disperse approximately 2.5 times the number of participants for each color. For example, if you have 12 participants, disperse 30 craft sticks of each color. That would be a total of 120 sticks.) Disperse fewer sticks around the migratory habitat. (Disperse approximately 0.75 times the number of participants. For example, if you have 12 participants, disperse 9 sticks of each color for a total of 36 sticks.)

Procedure:

1. Ask: *Why do you think birds migrate?* (to connect to four basic needs: food, water, shelter, and space)
 - a. Waterfowl migrate south in winter because most of the water freezes, blocking their aquatic food sources and leaving them vulnerable to predators who can walk on the ice.
 - b. Nectar- and insect-eating birds migrate because their food disappears with the seasons.
2. Explain that in this activity, they will pretend to be young birds. Their job is to survive one year (four seasons). They will need to make the choice to migrate or not when winter arrives.
3. Have all participants line up along the rope. This is their home resting area. They will return here after each season. Explain that each color of stick represents a basic need of birds and explain which color represents which need. When you say “go,” participants will run to the habitat, collect their sticks and return within the allocated time. Each race to the habitat will be divided into four seasons.
 - a. Spring/Summer/Fall: Everyone needs to run and collect *one* of each of the four colored sticks (for example, one blue, one red, one yellow, and one green) *only* from the *local habitat* within 20 seconds (adjust the time to fit the space and age of the youth). Participants will return to the rope (resting area) at the end of each season. (Call out each season. For example, for the first race, call out “Spring.” After the participants come back from the habitat, then call out “Summer” and then “Fall” in the same way.)
 - b. Winter: Everyone needs to run and collect *one* of each of the four colored sticks from either the local habitat *or* the migratory habitat. Each youth chooses the habitat they will run to; they may not change their mind once they leave the rope, and they can only visit *one* habitat.



4. After each round, check who survived. To survive they must have four sticks, *one* of each color. Collect all sticks the participants gathered after each season and set aside. These sticks are out of play until next year. Any participants without the correct sticks did not survive the season and are out of the game until the next year. At the beginning of the next year, all participants are back in the game.
 - a. You may discover a youth who continually collects too many sticks (this can alter the intended outcome of the game) after a reminder you may decide the bird got too big and slow and was caught by predator and is out until the next year.
5. Ask: *Who survived? Why did some birds survive, while others did not? Did all the birds that chose to migrate survive? Do the same things happen in real life?*
6. Redisperse the colors as you did in Year One. You may choose to include a natural disaster to the local habitat. Adjust the number of sticks dispersed for a natural disaster. For example, if there is a fire, disperse fewer sticks that represent shelter. Note: Do not tell participants that a natural disaster has occurred; simply change the availability of the craft sticks.
 - Fire: Disperse fewer sticks that represent shelter.
 - Drought: Disperse fewer sticks that represent water.
 - Flood: Disperse more sticks that represent water, but fewer sticks that represent shelter and food.
7. Ask: *Who survived?* (If you included a natural disaster, then many participants would have “died” earlier because of the shortage of one color.) *Why do you think there were fewer sticks of one color? What could this represent? Why did some birds survive, while others did not? Did all the birds that chose to migrate survive? Do the same things happen in real life? Does each individual bird choose to migrate?*

Wrap-Up:

- *How did this activity help you think about why birds migrate?*
- Turn and talk with a partner to share things you discovered.
- Conclude by re-asking the beginning question: *Why do you think birds migrate?*
- Visit birdcast.info or journeynorth.org to explore live migration patterns for a variety of species throughout the season. Consider local species, and look at their migration patterns.

Nature Journal Prompts:

- *What did you discover about migrations?*
- *Do you have a favorite bird? Does it migrate?*
- *If you looked at a live migration tracker such as birdcast.info or journeynorth.org, did you recognize any of the birds migrating through your area? What were they?*



References:

Cornell University. (2021, August 1). The basics of bird migration: how, why, and where. *All About Birds*. The Cornell Lab. <https://www.allaboutbirds.org/news/the-basics-how-why-and-where-of-bird-migration/>

National Geographic. (n.d.). *Migration*. <https://www.nationalgeographic.org/encyclopedia/migration/>

Resources:

The Cornell Lab, Colorado State University, UMass Amherst. *BirdCast*. <https://birdcast.info/> Explore live migration patterns for a variety of species throughout the season.

University of Wisconsin–Madison Arboretum. *Journey North*. <https://journeynorth.org/> Help track wildlife migration.

4-H and MSU Extension Strengthening Michigan’s Academic Standards

The Michigan 4-H Nature Connections lessons are intentionally designed to enhance the Michigan Academic Standards from the Michigan Department of Education (<https://www.michigan.gov/mde/0,4615,7-140-28753---,00.html>). These lessons provide an opportunity for youth to engage in and apply Michigan’s formal education standards. In doing so, young people develop the skills needed to succeed with critical thinking, collaboration, communication, and additional career-necessary competencies. Youth develop these skills in a real-world setting to experience direct concept application and personal growth. This is accomplished in a way that includes hands-on activities, experiential learning to meet students where they are, and recognition of various ways of synthesizing and applying knowledge.

