



MIGRATION FRIENDLY SCHOOLS

This lesson plan was created by Kate Studey as part of the Acadia Teacher Fellows (ATF) program. ATFs created lesson plans are created by educators for educators. Any books or links suggested in this curriculum are not an endorsement by the National Park Service.

Grade Span	6-12
Time Span	Two 45-60 minute class periods (minimum)
Standards	<p>NGSS Science: Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations. (MS-LS2-4)</p> <p>AzSS (Arizona): Develop and use a model to explain how natural selection may lead to increases and decreases of specific traits in populations over time. (8.L4U1.11)</p>
Focus Question	<ul style="list-style-type: none"> How can we make our school campus more bird friendly to support migratory birds?
Overview	To engage students in identifying positive and negative factors affecting bird migration. Students will also create an action plan to address any negative factors present on the school campus.
Objectives	<ul style="list-style-type: none"> Identify positive and negative factors that affect bird migration. Evaluate the school campus and identify any factors present (either positive or negative). Create an action plan to address any negative factors present.
Materials Needed	<ul style="list-style-type: none"> School Campus Assessment Form Clipboards Pencil
Vocabulary	<p>Migration: Migration is the movement of animals from one region to another.</p> <p>Negative Factor: Something that affects something else in a bad way</p> <p>Positive Factor: Something that affects something else in a good way</p>
Teacher Prep	<ul style="list-style-type: none"> Recommended to complete the Migration Patterns lesson prior to this lesson. If desired, students may do an activity such as Migration Headache in preparation for this lesson. Check the weather before preparing to go outside. Have a backup plan in the case of inclement weather. (Optional) Reach out to local Audubon Society or other organization to see about providing volunteers to help with campus assessment. (Audubon Near You)
Background	Migratory birds face many challenges every year. Some of these obstacles to



	<p>migration are human-caused, and some are natural. These include habitat fragmentation, predation by domestic cats, and collisions, and others. Many migratory birds are currently experiencing declines in numbers because of these threats. For more information on the threats migratory birds face, click here. There are things that we can do to help birds as they are migrating. Find some tips on what you can do here.</p>
<p>Procedure</p>	<p>Engage:</p> <ol style="list-style-type: none"> 1. Show students this graph illustrating the change in bird populations since 1970. 2. Have students share with partners what they notice about the graph. What are some questions they have? 3. Students then share their thoughts with the rest of the class. 4. Students complete the Bird Population Map Reflection. <p>Explore:</p> <ol style="list-style-type: none"> 1. Have students share out their answers to the last question on the Bird Population Map Reflection (What might be some challenges that birds in your area could face?). 2. Create a list on the board or have students put their responses on sticky notes and post on the board (Jamboard also works well for a collaborative brainstorming activity like this) 3. Students compare the list they generated with the table on this US Fish and Wildlife site. <ul style="list-style-type: none"> • How does the class list compare with the data on the site? • Is there anything surprising in the data? • Anything students think should be included on the list that isn't? <p>Explanation:</p> <p>Part 1: Research</p> <ol style="list-style-type: none"> 1. Divide the class up into equal groups. Assign each group one of the following challenges for migratory birds: <ul style="list-style-type: none"> • Habitat loss • Window collisions • Cats • Light pollution • Add other challenges related to your area as needed 2. Students conduct research online to learn about each one. 3. Each group creates a presentation (slides, poster, etc.) to share with the class. <p>Part 2: Survey</p> <ol style="list-style-type: none"> 1. Now that students are more familiar with the challenges, take them on a walk around campus to find any challenges migratory birds might face as they travel through. 2. Give each student a copy of the School Campus Assessment Form with a clipboard and pencil. <ul style="list-style-type: none"> • Remember to review expectations before leaving the classroom – voice level, on task behavior 3. Some questions to consider as you walk the campus: <ul style="list-style-type: none"> • Are there large windows birds might fly into?



	<ul style="list-style-type: none"> • Do you have places for birds to rest? Get food? Water? • Are there cats on campus? • What lights are left on in the evening when school is closed? Are these lights all necessary or can some be turned off? (may have to check with a Facility Manager / Janitor) <ol style="list-style-type: none"> 4. Once the assessment is completed, return to the classroom to discuss. 5. Identify at least two things that could be easily addressed. As a class, write up an action plan to fix these problems. If this is not possible, have students write about what they would do if they had the time, money, and resources to fix the problems. 6. If time allows, work with the school administration and any other support staff to implement the action plan. <p>Extension:</p> <ul style="list-style-type: none"> • Conduct frequent bird walks to make note of changes in bird populations in your area. Use eBird to submit checklists. • Invite an ornithologist, Audubon Society member, or other scientist in the field to your classroom as a guest speaker. • Participate in the Cornell Lab of Ornithology's Project Feederwatch, Great Backyard Bird Count, or other bird-related citizen science project. • Students can create a field guide for the school campus based on frequently observed birds. • Students research challenges to migratory birds and create an awareness campaign for the school or local community. • Expand the School Campus Assessment Form to include other parts of your community: <ul style="list-style-type: none"> ○ Businesses ○ Other schools ○ Parks ○ Neighborhoods/Apartments
<p>Wrap-Up</p>	<p>Evaluate:</p> <ol style="list-style-type: none"> 1. In your own words, name at least one challenge that migratory birds face. 2. List at least two things you can do in your community to help support migratory birds. <p>Additional resources: https://www.3billionbirds.org/findings https://www.allaboutbirds.org/news/vanishing-1-in-4-birds-gone/ https://www.nrs.fs.fed.us/environmental_literacy/1000Herons/local-resources/downloads/1996Migratory-Bird-Day-Educators.pdf</p>



Bird Population Map Reflection

What does this map and graph show us?

What is the percent change in the population of birds that breed in...

grasslands? _____

arid lands? _____

Are there any bird populations that have experienced an increase since 1970? If so, which one(s)?

Find the area where your school is located.

What type of bird breeding habitat are you closest to?

What is the percent change in that bird population?

What might be some challenges that birds in your area could face?

