

Birds of New York City (grades pre k-12) – Teacher Resource Guide

Related Scope & Sequence Units:

This document is intended to be a guide to get you started on a bird project with your students! It can be adapted to fit any age group and any project. This can be as basic as just observing birds in their habitats and drawing pictures to a whole citizen science project about birds on Governor's Island or near your school! Below are some units from the NY state science scope and sequence that can be relevant to birding and bird observation. This is not an exhaustive list and you may find that other units can also be relevant to this activity (especially those for grades 9-12 which were not included here).

Pre-Kindergarten: Unit 3 (All About Us)

Kindergarten: Unit 3 (Our Environment)

1st grade: Unit 3 (Structures & Behaviors in Living Things)

2nd grade: Unit 1 (Properties & Patterns of Water), Unit 3 (Plant and Animal Interactions)

3rd grade: Unit 1 (Inheritance & Variation), Unit 2 (Interdependence)

4th grade: Unit 1 (Interacting Forces)

5th grade: Unit 3 (Earth Systems Science)

6th grade: Unit 3 (Ecosystems)

7th grade: Unit 4 (Geology)

8th grade: Unit 3 (Growth, Development, and Reproduction of Organisms)

Bird Observation

This can be done by traveling all together to different parts of the island and observing the birds you find there as a class. Or for older students, you can split them up into groups to observe birds in different areas. They can record what they observe and each group can share out to the class about the types of birds they saw. You can also do this from a window in your classroom, by visiting a nearby park, or by assigning students homework to observe birds as they walk around their neighborhood.

You can use our guides to identify birds or you can use sites like ebird.org, [merlin bird ID](http://merlin.birdid.org) - allaboutbirds.org, or identifying birds Audubon to determine which birds you are seeing. There are many great resources to take advantage of on this website. I recommend taking pictures of the birds or drawing pictures noting specific important characteristics like colors, shapes, sizes, patterns, or beak type (use the bird observation table!). Then students can look up the information later to determine the birds they saw.

When observing birds, instruct students to quietly listen. They will hear different bird calls and songs which can be a clue as to which type of birds are nearby. As you (and your students) become more experienced birders you can identify birds based on their call or song alone! Look closely and far away, do you see birds flying above? Are there birds in the nearby trees? Or on the ground? Encourage students to record as much information as possible about any birds they see, what they look like, what are they doing, where are they located, all of these things will help identify the bird.

4 keys to Identify Birds (from allaboutbirds.org)

1. Size & Shape: bird silhouettes, overall size, overall shape, and proportions of size (beak to head, beak to body)
2. Color Pattern: look for overall color, pattern of light colors to dark colors, colorful spots on a certain part of the bird, markings, stripes, and spots
3. Behavior: posture, movement, flight pattern, feeding style, and flocking
4. Habitat: shore, grassland, swamp, pine forest, deciduous forest, body of water, use range maps, check the time of year (this is where ebird.org becomes useful)

We have also included a common bird reference sheet for each season when the island is open (spring, summer, and fall). This sheet includes a list of common birds that you might find on Governor's Island during that time of year, as well as a description of each bird by the four keys above and a photo (or two if there is a significant visual difference between males and females). If you are using this on the island, we suggest only printing a few copies and having students share and use them in groups to cut down on paper use.

Teaching Bird ID

Tips for how to teach bird ID: <https://www.birds.cornell.edu/k12/teaching-bird-id/>

List of beginner birds in NY to get students started: <https://www.birds.cornell.edu/k12/bird-id/>

Project/ Activity/ Discussion Ideas

This is not an exhaustive list, just a few ideas and guiding questions to get you started and spark your creativity!

Activities/ projects/ resources for all grades:

- <https://www.thespruce.com/science-fair-projects-about-birds-386008>
- <https://www.birdschoolproject.org/resources>
- <http://www.nea.org/tools/lessons/58403.htm>

Pre-Kindergarten & Kindergarten:

Observe birds on the island, discuss what they need to survive. What do birds eat? Have students explore how a bird's beak is specialized for what they eat (Classroom activity: https://www-tc.pbskids.org/fetch/parentsteachers/activities/pdf/FETCH_EatLikeABird_Notes.pdf). Discuss how bird's feathers, wings, feet, and beaks help them survive (bird activity/lessons: <https://www.massaudubon.org/content/download/13465/209556/file/PreKTeachingUnit-BIRDS.pdf>) How do bird's build a nest? Have students gather materials to try to make their own bird's nest. Discuss why different birds might nest in different places, and make nests with different materials.

1st & 2nd grade:

Observe birds on the island, draw pictures of the birds you see. Record characteristics of the birds on the recording sheet. Discuss patterns of behaviors that baby birds might exhibit to get the attention of their parents. Look for baby birds when observing birds, why or why might you not see them? How are baby birds the same or different from their parents? Make a venn diagram. Compare the types of birds that can be found in different habitats, why do some birds live in some places while others live elsewhere?

How do birds depend on other species for survival? How do we depend on birds for our own survival?
Some bird activities and lessons

(https://www.massaudubon.org/content/download/7007/129231/file/Birds_k-2.pdf)

3rd & 4th grade:

Observe birds on the island. Why do birds travel in flocks? Did you observe any birds in flocks on Governor's Island? Do all birds travel in flocks? Why might that be? What is a bird's life cycle? How is it different from a human's life cycle? Do you notice similarities and differences between different birds of the same species? How do those two sparrows look the same or different? Why do female and male birds look different? How have birds adapted to their specific environment or habitat (bird beak activity...<http://sciencenetlinks.com/lessons/bird-beaks/>)? Why do birds migrate? (Migration activities...<https://serc.carleton.edu/sp/mnstep/activities/26455.html>) or https://pbskids.org/plumlanding/educators/activities/pdf/MigrationChallenge_FAA_Eng_Span.pdf)

5th & 6th grade:

Observe birds on the island. Have students record their observations, determine the birds they observed and enter the data to a citizen science project like ebird.org. How is climate change affecting bird habitats & migration? How does human activity effect bird habitats and migration? How do birds interact with other living and non-living aspects of our ecosystem? (Ecosystem activities...<https://kidsgardening.org/lesson-plan-birds-garden-ecosystem/>)

7th & 8th grade:

Observe birds on the island. Have students record their observations, determine the birds they observed and enter the data to a citizen science project like ebird.org. How have birds evolved over time to adapt to their environments (activity... <https://betterlesson.com/lesson/636537/natural-selection-survival-of-the-fittest>)? Discuss how bird beaks have evolved to make it easier for birds to eat (activity...<https://www.sciencefriday.com/educational-resources/a-new-beak-evolution-lab/>)

9th – 12th grade:

Observe birds on the island, record your observations. Take part in citizen science! Have students work in small groups to observe birds in different areas of the island. Emphasize that they are collecting real data that will be used by real scientists, this is something to take seriously. Have each group share the types of birds they observed, enter the data on ebird.org. Have each student select one bird (that lives natively in NYC at some point during the year), they can do a detailed presentation on their bird for the class. This introduces students to birding and birds that exist in their city.

What is Citizen Science?

Citizen science is “the collection and analysis of data relating to the natural world by members of the general public typically as part of a collaborative project with professional scientists” (Oxford dictionary).

Your students can contribute to citizen science projects by recording and reporting the birds they see on Governor's Island or in your school's neighborhood on sites like ebird.org.

<https://www.birds.cornell.edu/citizenscience>