

STEM ACTIVITY OF THE WEEK

Bird Watching with iNaturalist

Theme: Birds, Adaptation, Habitat

Ages: 5-12 years old

Prep Time: None

Activity Time: Varies

Activity Summary:

Hudson River Park provides important habitat to a wide variety of local and migrating bird species. Some of the bird species you can spot in the Park include Canada geese, red tailed hawks, rock doves, mallard ducks, northern flicker woodpeckers and song sparrows, just to name a few. There are over 100 species of birds that fly through the park every year, so it is a big job trying to keep track of them all and in this lesson we're asking for your help! In this experiment students will observe bird species from their backyard or the Park. Using the free iNaturalist application, students will report their observations by taking photos or recording a sound and then uploading their observations to the app!

Objectives:

- Students will identify native bird species
- Students will learn how to operate the iNaturalist app to survey wildlife

Lesson Materials:

- HRP Basic Bird Field Guide (attached)
- Bird Tracking Chart Worksheet (attached)

Experiment Materials:

- Phone or Tablet with access to camera and WiFi
 - iNaturalist app
- OR**
- Camera
 - Access to [iNaturalist.org](https://www.inaturalist.org)

1- Background: iNaturalist

iNaturalist is a free social media platform of individuals sharing images of wildlife and plants to help others learn more about nature and biodiversity. It is also used as a tracking/recording tool to observe organism occurrence and as a crowdsourced species identification system. Anyone can participate as long as they have a phone or tablet with access to a camera and WiFi, either from the park, your neighborhood or your own backyard! You can also make observations and take pictures outdoors, and upload your photos to the iNaturalist website later.

Note to Educator: *Students are recommended to receive parental permission before creating an iNaturalist account as it is a social media platform.*

2- Migration & Bird species in Hudson River Park:

Hudson River Park is a biodiverse ecosystem home to over 100 species of birds that are local or migrate seasonally! Hudson River Park is located in the east coast of North America and as we experience the changing of seasons, birds and other animals migrate to warmer areas. Birds typically migrate from areas of low or decreasing resources, like food and shelter, to areas of increasing resources. When the colder seasons approach, like autumn and winter, there is limited availability of insects and seeds to eat, and birds migrate down south for easier access to these resources.

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Before you go out and explore, you need to learn how to properly ID (identify) some bird species that you might find. Properly identifying bird species is important and aids in understanding what type of habitat Hudson River Park provides for these migratory birds. Visual identification is *essential* for many bird watchers. Bird watchers often use four distinct categories to visually ID a bird species. The 4 keys to visually ID a bird include: *size and shape, color pattern, behavior and habitat.*

Below are six common bird species you might spot in the NYC, NJ or HRP area:

Common name: [Canada Goose](#)
Scientific name: *Branta canadensis*



Size & Shape: Water bird with long neck, large body frame, large webbed feet and wide, flat bill.

Color Pattern: Black head, white cheeks, white chinstrap, black neck, tan breast and brown back.

Behavior: Often seen moving in pairs or flocks in a V formation. Canada Geese feed by dabbling in water or grazing in fields.

Habitat: Lakes, rivers, ponds, small or large bodies of water, park lawns and farm fields.

Common name: [Rock Pigeon](#)
Scientific name: *Columbia livia*

Size & Shape: Tubby bird with small head and short legs. Rock pigeons are typically larger than Mourning Doves. Wings are broad and pointed. Tail is wide and rounded.

Color Pattern: Varies. Most birds are a blue/gray color with two black bands on the wing and a black tip to the tail. May have iridescent throat feathers. Wing patterns vary from two bars, dark spots or plain. Tail may have a dark tip.

Behavior: Typically found gathered in flocks, walking or running, and pecking for food. Flock flies into the air when alarmed and circles around a few times before returning back down.

Habitat: Typically found all throughout cities, just like NYC, and towns. Can also be spotted in farmlands, fields, or rocky cliffs.



Common name: [Mourning Dove](#)
Scientific name: *Zenaidura macroura*



Size & Shape: Plump body with long tail, short legs and short bill. Head size is small in comparison to body size.

Color Pattern: Brown to tan overall with black spots on wings and black bordered white tips all the way to the tail feathers.

Behavior: Seen flying fast on powerful wingbeats. Sometimes seen making sudden ascents and descent with their tails stretched out behind them.

Habitat: Found anywhere except deep woods. Can be spotted in fields or patches on the bare ground or up on telephone wires.

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Common name: [Northern Cardinal](#)
Scientific name: *Cardinalis cardinalis*



Size & Shape: Fairly large, long-tailed songbird with a short but thick bill and a notable crest.

Color Pattern: Male cardinals (pictured left) are bright red all over, with a red bill and black face around the bill. Females are pale brown overall with warm red tinges on the crest, wings, and tails. Females have a red-orange bill with a black face surrounding the bill.

Behavior: Northern Cardinals are found in pairs sitting low in shrubs, trees or near ground. Oftentimes found sitting with a hunched-over posture and tail pointed down. Cardinals have a loud metallic chip note.

Habitat: Northern Cardinals can be found in areas like backyards, parks and shrubby forest edges. Nests are found in dense tangles of shrubs and vines.

Common name: [Mallard](#)
Scientific name: *Anas platyrhynchos*

Size & Shape: Large, hefty and long body, round head with wide flat bill. In water, the tail rides high out of water giving the Mallard a blunt shape. In flight, the wings are broad and set towards the rear.

Color Pattern: Male Mallards have a dark, iridescent green head and a bright yellow bill. Brown breast, black rear with a gray body. Females and juveniles are brown with orange-brown bills. Both sexes have a white-blue bordered speculum patch in the wing.

Behavior: Most commonly known as “dabbling ducks” due to their feeding patterns in water by tipping forward and grazing underwater plants. Often found in groups with Mallards or different species of dabbling ducks.

Habitat: Found in wetland habitats that are natural or artificial. Also seen in lakes, ponds, rivers, marshes and coastal habitats. Abundant in cities, like NYC, suburban parks and backyards.



Common name: [American Robin](#)
Scientific name: *Turdus migratorius*



Size & Shape: Fairly large songbird with round body, long legs and fairly long tail.

Color Pattern: Gray-brown birds with warm, vibrant orange underparts, dark brown heads and a white patch located on the lower belly. In comparison to males, females have paler heads that contrast less with the gray back.

Behavior: Robins stand erect with beaks tilted upward. When descending, they flick their tails downward several times. In winter months they form large flocks and gather in trees to eat berries. In spring and summer months, they can be seen hopping on the ground and pecking for worms and insects.

Habitat: Parks, yards, gardens, fields, pastures, tundras, woodlands, pine forests and shrublands.

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Lesson Procedure:

Educator Note: Refer to the HRP Basic Bird Field Guide below to help identify common bird species within the park area. Feel free to use other guides to help ID any other birds you may come across. It's best to download the iNaturalist application before going out! Remember to wear a mask, be aware of your surroundings and other people, and wash your hands!

Are you ready to be an explorer in Hudson River Park or from your backyard? In this lesson, we ask you to go out and explore the Park, or your backyard, for some birds that may be around. Some bird species you will likely spot are rock doves, mallard ducks, northern flicker woodpeckers, song sparrows and Canada geese! Using the iNaturalist app you have downloaded on your handheld device you will go outdoors and take your own pictures of nature and upload the observations for everyone else to see! To get an idea of some of the species that reside within the park check out the [Hudson River Water Project hashtag](#) and check out some of the marine species that reside in the [Hudson River Estuary](#). Also, share your findings in [Hudson River Parks's](#) Bioblitz page every month!

The goal for this lesson is try and observe as many different bird species you can spot. Use the HRP Bird Field Guide as a reference to help identify bird species when uploading your observations to iNaturalist. iNaturalist also suggests species IDs based on the photos you upload. Then track the number of observations you collect in the Bird Tracking Chart Worksheet. Make sure to practice required social distancing measures, wear your mask and most importantly make sure to have fun and be safe!

Important things to keep in mind when making observations:

When making observations, be sure to:

- Take identifiable photos, such that they are not blurry.
- Take multiple photos at different angles
- Focus on wildlife, specifically bird species

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Getting Started: How to Make an Observation on your Phone

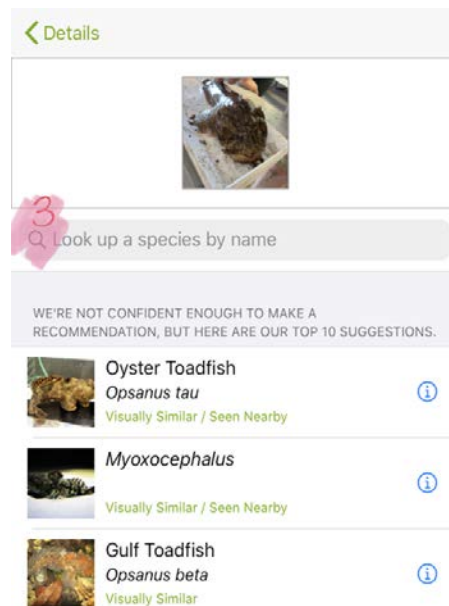
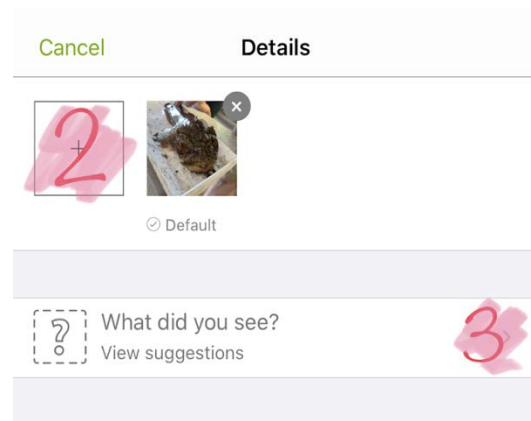
iNaturalist is an application for posting **your own photos** from nature. We ask that you make sure to not to use photos from the web.

Educator Note: Follow the steps on the images below to see how to submit using the app!

Step 1: Once the iNaturalist app is open you should see a screen with a map of where you are and on the bottom you will see a small camera that says observe. Begin by tapping **observe**.

Step 2: Upload your photo(s). More than 3 images at various angles is preferred.

Step 3: Choose what you observed. *You can choose from the suggested species iNaturalist will recommend.*



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Step 4: The date you took pictures of your observation should automatically appear.

Step 5: The location of where you saw your observations should automatically appear. Note: *If app was unable to fetch location, go to the Settings → Privacy → Enable Location services for iNaturalist. An alternative is to edit the location and pinpoint the location manually*

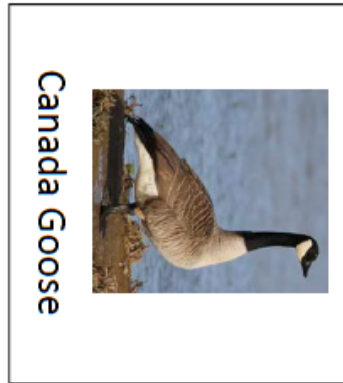
Step 6: Save and share your observation!



For more help on making observations from other devices check out the [iNaturalist Getting Started](#) page!

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Hudson River Park: Bird Field Guide



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Bird Tracking Chart Worksheet

Use the chart below to track the number of each species you have spotted/observed. The second chart can be used to track other bird species you may have found.

Chart 1: Common Bird Species in HRPK

# of Canada Geese Observed: _____	# of Ring-billed Gulls Observed: _____	# of Mallards Observed: _____	# of Double-crested Cormorants Observed: _____
# of Sparrows Observed: _____	# of Rock Pigeons Observed: _____	# of Mourning Doves Observed: _____	# of European Starlings Observed: _____
# of American Robins Observed: _____	# of Black-capped Chickadees Observed: _____	# of Northern Cardinals Observed: _____	# of Northern Mockingbirds Observed: _____

Total number of species observed: _____

Most common species observed: _____

Least common species observed: _____

Chart 2: Bird Species Found in Other Locations

Species name: _____	Species name: _____	Species name: _____	Species name: _____
# of Species Observed: _____	# of Species Observed: _____	# of Species Observed: _____	# of Species Observed: _____
Species name: _____	Species name: _____	Species name: _____	Species name: _____
# of Species Observed: _____	# of Species Observed: _____	# of Species Observed: _____	# of Species Observed: _____

Total number of species observed: _____

Most common species observed: _____

Least common species observed: _____