# Sights and Sounds Exploration (7-12)

## OVERVIEW

***Coexisting*** with wildlife in urban environments requires us to be aware of the species living among us and to alter our behavior accordingly. This activity immerses students in an outdoor setting to discover differences in adjacent urban habitats and raise awareness about the effects of human activity on wildlife behaviors.

## MATERIALS

- Clipboards with paper or nature journals
- Pencils and/or markers in different colors
- Field ID guidebooks for wildlife, and/or dichotomous keys for tree ID
- Sound meter (free digital apps available for smartphone and tablet use)
- Animal artifacts and other visuals related to location (optional)

## ACTIVITY

**PREPARATION:**

Conduct a pre-activity site visit; choose two exploration areas that have significant differences between managed and natural landscapes (e.g. a large lawn with trees versus a forested park trail). These will be Locations 1 and 2, where students will make observations and reflect. Download and read "Tips for Successful Learning in the Great Outdoors" from the introduction letter to help guide you in choosing activity locations.

Students will be making observations first and then creating a sound map. Ask students to set up their field notes page before working outside; the front side of the page will be used for Location 1 and the back side for Location 2. Divide each side in half. The top portion will be used to write wildlife observation notes. The bottom portion will be used to create a sound map. Read further for an example and directions to set up the field notes page.

**THEME**

Effects human activity can have on wildlife behavior.

**OBJECTIVES**

***Students will:***

- Recognize that cities are diverse ecosystems that include people and wildlife.
- Collect, organize, and interpret data to create hypotheses.
- Investigate the positive and negative impacts human activity can have on urban wildlife.
- Explore relationships between noise, human activities, and urban wildlife.

**SUBJECTS**

Biodiversity and humans, ecosystem relationships, human impacts on earth systems, adaptations for success in urban environments

**SKILLS**

Engaging in evidence-based discussions, spatial drawing, recognizing cause and effect patterns to create research hypotheses and methods, science communication

**ADDITIONAL BACKGROUND MATERIALS**

***Suggested for facilitator***

- Wildlife Basic Information Packet
- WildlifeNYC website **nyc.gov/wildlife**

# Sights and Sounds Exploration

**PART A:**

Begin with students spending a few minutes in a defined exploration area looking around for wildlife or signs of wildlife. Signs can include nests, scat (animal feces), discarded feathers/furs, chewed leaves, log hollows, etc. Allow for at least 15 minutes of free observation and use guidebooks and keys to identify species. Have the students write down all observations on the top portion of their field notes page. Include observed wildlife behavior, species identified, and any additional comments. Remind students to leave the area as they found it.

Next gather everyone in a comfortable spot to sit and listen. Students should be given three minutes of listening time. As they listen, students create a sound map on the bottom portion of their field notes page. Everyone should draw a circled "X" in the center of each half to represent themselves. Each time they hear a sound, students will mark its location on the page relative to them. How close is the sound to their position? Is it in front of them or behind them? They should draw a doodle/picture to represent the sound, illustrating feeling and volume intensity. The sound map only has to make sense to the student, who will later explain their map to others. Halfway through the listening time they will close their eyes and use a different color pen/pencil to mark their sound map.

## Example of Symbols

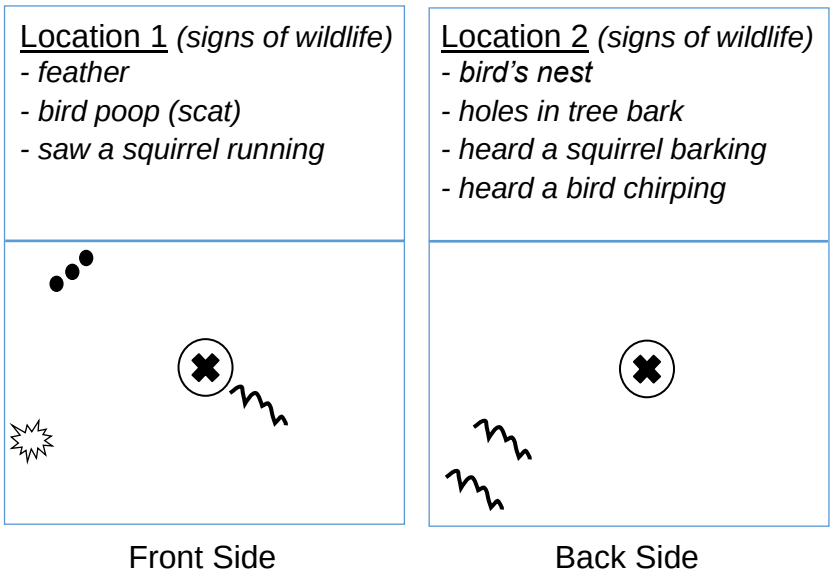

- student


- robin singing


- car horn


- motorcycle driving by

## *SAMPLE* Field Notes Page




Front Side Back Side

After the listening time, use sound meters to measure the ambient noise level in decibels (dB). Next, discuss the sights and sounds students observed.

DISCUSSION QUESTIONS:

- Did you see any wildlife? If so, were you able to identify the species with the field guides?
- Describe signs of wildlife found, like feathers, fur, tracks, or scat.
- What types of sounds did you hear?
- How many sounds were from human-made sources? From natural sources? Quantify each source.
- Could you identify all of the sounds? Do you have guesses for the unidentifiable sounds?
- Were there any sounds you heard related to wildlife sightings?
- What happened after you began listening with your eyes shut?
- Look around and observe; how are people using the park here? Categorize positive, negative, and neutral uses, if any.
- Any additional observations?

**PART B:**

Proceed to Location 2. Give walking instructions and safety information as necessary (e.g. stay on the trail, stay together as a group, or be aware of poison ivy.) Impress upon the students that if they desire to see wildlife, noise needs to be kept to a minimum. Additionally, animal artifacts, like feathers or skulls, can be brought out to share with students along the way. Proceed at a slower pace so students can make observations.

Upon reaching the second location, repeat Part A. Start with students looking around for signs of wildlife in a defined exploration area, and then gather together to create a second sound map. Repeat observational listening in the same manner as in Location 1. Students will use the other side of their field notes page to write down observations and draw their sound map. After the listening time, use sound meters to measure the ambient noise level in decibels (dB) for Location 2. Discuss sight and sound observations made in Location 2.

DISCUSSION QUESTIONS:

- Did you see any wildlife in this second location? If so, were you able to identify the species with the field guides?
- Describe signs of wildlife found, like feathers, fur, tracks, or scat.
- What types of sounds did you hear?

- Which sounds were from human-made sources? From natural sources? Quantify each source.
- Can all the sounds be identified? Do you have guesses for the unidentifiable sounds?
- How are people using the park in this second location? Categorize positive, negative, and neutral uses, if any.
- Compare and contrast sounds heard and sound levels measured in Locations 1 and 2.
- Compare and contrast observed human uses in Locations 1 and 2.

Next think about what the collected data communicates about the relationship between human activity and wildlife. This discussion will prepare and assist students in creating a hypothesis for the final discussion question.

- Is there a difference in wildlife presence and human activity between the two locations? Why or why not?

Ask students to create a hypothesis to answer the following questions, and use their collected data to support it. Students can work independently or in small groups.

- Do human activities in the park have an effect on wildlife? If so, how?
- Does human noise have an effect on wildlife activity? If so, how?

**EXTENSION ACTIVITY:**

Conduct another observation and listening period outside your school building, in a recess yard, or on a street block. Make sure to measure the decibel (dB) level of ambient noise. Using the sound maps from all three locations, tally the sounds made by human-made sources and those by natural sources. Task students with creating an infographic to showcase their data. Students can choose what to compare. For example, they can compare the quantity of human-made vs. natural sounds, or the types of sounds found in Location 1 vs. Location 2. Evaluate the data. Were there any biases or weaknesses in the way data was recorded?

Using their collected data as inspiration, ask students to create a research hypothesis and a method to test it. Research is only limited by time and resources available.

Examples of hypotheses students can design:

- Green spaces in urban environments provide quieter habitat for urban wildlife.
- Urban wildlife is adapting to live in noisier environments.