

## E<sup>3</sup>: EXPLORATION, ECOLOGY, & THE ENVIRONMENT

### LESSON OVERVIEW

#### OBJECTIVE

Students will receive an introduction to animal habitats and the purposes they serve.

#### RECOMMENDED GRADE LEVELS

K-5

#### DURATION

20- 40 minutes

#### MATERIALS

- “Where do animals live?” student worksheet (provided)
- Whiteboard & markers
- Park habitat photos (provided)
- Local & Exotic animal cards (provided)

### TOPIC BACKGROUND

Brooklyn Bridge Park provides an urban oasis for both people and local wildlife. Sustainability and **ecological restoration** were important design considerations. Features like playgrounds and sports fields are mixed between native wildflower fields, edge woodlands, and **salt marshes**.

The park’s various **ecosystems** provide **habitats** for many local organisms. A habitat is an animal’s home or area where it lives. Habitats must provide food, water, shelter, and a place for raising young.

As people continue to **urbanize** land, many animals have had to either **adapt** or relocate in order to continue meeting their **survival** needs. Restoring native vegetation and green space, along with protecting the health of our waterways will enable native animals to return and thrive in New York City.

Brooklyn Bridge Park has already begun to see the return of many animals once inhabitants to this area, including, opossums, herons, horseshoe crabs, red tailed hawks, and seahorses.

### GETTING READY

#### Activity 1:

1. Print a copy of the “Where do animals live” worksheet for each student.
2. Collect markers and a whiteboard or chart paper for creating word bubbles.

#### Activity 2:

1. Print one copy or use a projector screen to show students the provided photos of Brooklyn Bridge Park habitats.
2. Print and cut the local/exotic animal photo cards. If desired, laminate for added durability. \*Note: depending on class number and desire to work in groups, you may want to print duplicates of some cards. There are 15 pairs, for a total of 30 cards.

### ACTIVITY 1: INTRODUCING ANIMAL NEEDS & HABITATS

1. Begin with an introduction to habitats by creating a word web with students. Focusing on the question “*where do animals live?*” record students’ ideas on the white board as they share out. It will likely include answers such as in water, trees, sky, land, forest, desert, jungle, etc. To help prompt ideas, students can color and complete the “Where do animals live” worksheet (page 5) before or after the class discussion. Instruct them to draw a line to match the animal with the home they usually make or find.
2. Next, ask students *What do animals need to survive?* The four basic survival needs of animals are access to **food, water, shelter** from weather and predators, and a safe and sufficient **space** for breeding and raising young. Once all four requirements have been identified, ask students if they can think of a word that describes an area that provides an animal all of these needs. *Answer: Habitat*
3. Remind students that animals have different diets and other adaptations, meaning not all habitats are suitable for all animals. Some animals create special homes like a nest or hive, however it is important to remember that a habitat includes the entire range an animal lives, including where it goes to find food, water, protection from rain, and even lay eggs or give birth. We can think of our homes and neighborhoods as a human’s habitat. In our homes, there are certain areas where we eat, where we sleep, and sometimes we even create a special room for babies, a nursery.

### ACTIVITY 2: EXAMINING NYC HABITATS

1. Show students the provided pictures of Brooklyn Bridge Park and explain that the park provides a lot of great things, including numerous habitats for animals. The East River along the park is a great example of a water habitat, called an estuary. The various plants throughout the park create several unique terrestrial habitats, including woodlands and meadows.
2. Challenge students to figure out which animals can be found living in Brooklyn Bridge Park and/or around the city and which animals live in very different habitats elsewhere around the world. Divide students into teams of 2 or more and give them each a numbered animal photo pair. (Group 1 gets the #1 cards, etc.) Each set includes one local animal and one “exotic” animal.
3. Encourage students to talk with their group member about what habitat their animals might live in. Remind them to think about the food and shelter the animal will need to survive and the climate and weather conditions we have here in NY. Some of the answers might surprise you! Create columns or hang large post-it paper for students to sort their NYC animals versus animals from other habitats.

**For an easier activity:** Hand students just the NYC cards and encourage them to try determining whether their animal would have a land habitat or a water habitat.

**For a more challenging activity,** Have students further sort the non-New York animals into their respective habitats: ocean, jungle, desert, arctic, and grasslands. After students have finished sorting, refer back to the Brooklyn Bridge Park photos to think about that specific habitat for each NYC animal.

### ACTIVITY 3: DIVE INTO AQUATIC HABITATS

1. Gather all the water-dwelling animal cards and display the photos in a 3 column T chart, using the categories below. Do write the titles on each column initially; instead encourage a discussion for students to think about the different type of water habitats each grouping of animals may belong to.

ATLANTIC OCEAN (Saltwater): octopus, stingray, sea turtle, lobster

EAST RIVER ESTUARY (Brackish water; slightly salty): striped bass, puffer fish, seahorse, clam, hermit crab, horseshoe crab

PARK PONDS (Freshwater): salamander, painted turtle

2. *Explain:* Not all water habitats are the same. Some animals can survive in only saltwater, others can survive in only freshwater. Some animals don't mind switching between the two.
3. Conclude by telling students that their trip to Brooklyn Bridge Park will continue their study of local plants and animals and we will learn more about what makes the East River an estuary habitat.

### RECOMMENDED BOOKS

- *Where Do Animals Live?* by Alejandro Algarra & Rocio Bonilla
- *What's Your Habitat?* by Sarah Leidhold
- *Biomes and Habitats - 10 Book Set* by Teacher Created Materials
- *National Geographic Kids Readers: Animal Homes* by Shira Evans
- *A Journey Into an Estuary* by Rebecca L. Johnson

### RECOMMENDED WEBSITES

National Geographic: Habitat Needs  
<https://www.nationalgeographic.org/activity/habitat-needs/>

Generation Genius: Habitat video & lesson plans  
<https://www.generationgenius.com/videolessons/habitats-video-for-kids/>

## VOCABULARY

**Adapt:** A behavior or change made in order to survive.

**Adaptation:** A feature of an animal that help it survive. Ex: thick fur, webbed feet, long beak.

**Arctic:** A very cold region around the North Pole.

**Breeding:** The mating and production of offspring by animals.

**Desert:** A dry region, predominately covered in sand and little vegetation.

**Ecology:** the study of the relationships between living things and their surroundings, or environment.

**Ecological restoration:** The process of assisting in the recovery of an ecosystem that has been degraded, damaged, or destroyed

**Ecosystem:** A community of living and nonliving things interacting.

**Estuary:** A area of water where the river meets the sea, causing brackish water (a mix of saltwater and freshwater).

**Forest:** An ecosystem densely covered by trees and other vegetation.

**Freshwater:** Naturally occurring water which contains no salt. Ex: rain, snow, glaciers, lakes, rivers and streams.

**Grasslands:** A region covered mostly by grasses and wildflowers where precipitation is too low to support large trees but high enough not to be a desert.

**Green space:** An area within an urban environment dedicated to nature.

**Habitat:** The area or environment where an organism or ecological community normally survives. A habitat provides an animal food, water, and shelter.

**Predator:** An animal that hunts, catches and eats other animals.

**Prey:** An animal being hunted, caught, and eaten by another animal.

**River:** Freshwater that flows across the surface of the land, normally winding its way to the sea.

**Salt marsh:** A costal grassland ecosystem regular flooded by salt (or brackish) water.

**Salinity:** The saltiness or dissolved salt content of a body of water.

**Survival:** To remain alive or continue to exist.

**Ocean:** A large body of saltwater.

**Urban:** an area, like a city, where many people live and work close together.

**Wetlands:** An area of land where the ground is often saturated, or filled with water.

**Woodlands:** A tree dominate habitat, also know as a forest.

## STANDARDS

### NYS NEXT GEN ELA

- Speaking and Listening
- Reading Informational Text
- Foundational Skills
- Language

### NYS NEXT GEN MATH

- Counting and Cardinality
- Measurement and Data
- Quantities

### NYS NEXT GEN SCIENCE

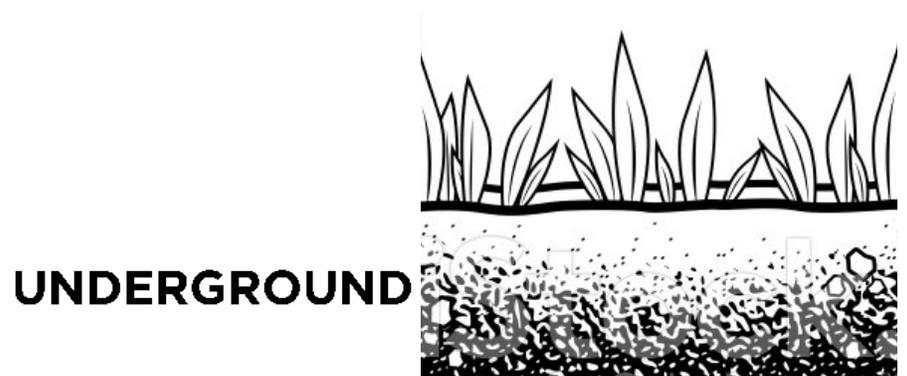
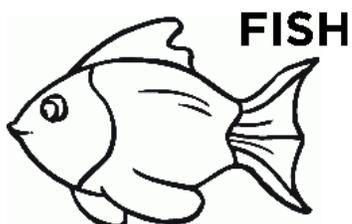
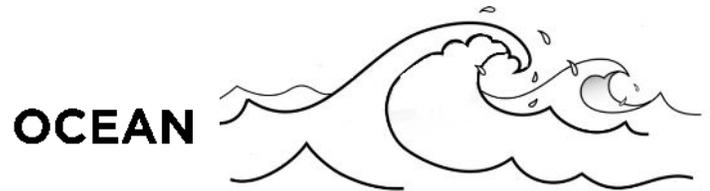
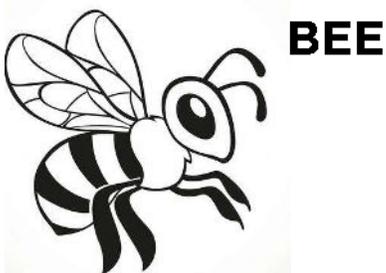
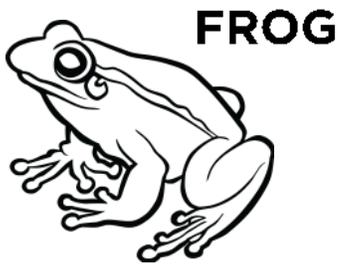
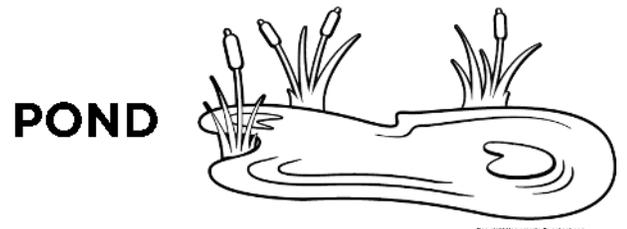
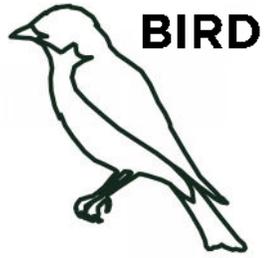
- K-3. Interdependent Relationships in Ecosystems:
1. Structure, Function, and Information Processing

### NYC SCIENCE SCOPE & SEQUENCE

- K. Our Environment
1. Structures & Behaviors in Living Things
  2. Plant & Animal Interactions
  3. Interdependence

NAME: \_\_\_\_\_

Where do animals make their homes?





# FRESHWATER PONDS



Pier 1



# WILDFLOWER FIELDS



# Pier 6



# EAST RIVER ESTUARY





# EDGE WOODLANDS



# Pier 1



# SALT MARSH



# JOHN STREET



**ROBIN** | 1



**OCTOPUS** | 1



**HORSESHOE CRAB** | 5



**SEAHORSE** | 2



**GIRAFFE** | 2



**CAMEL** | 5



**HERMIT CRAB** | 3



**KANGAROO** | 3



**WORM** | 6



**BUTTERFLY** | 4



**POLAR BEAR** | 4



**STINGRAY** | 6



**PAINTED TURTLE** | 7



**LOBSTER** | 7



**PUFFER FISH** | 11



**SALAMANDER** | 8



**LIZARD** | 8



**PENGUIN** | 11



**OPOSSUM** | 9



**ELEPHANT** | 9



**MANTIS** | 12



**DUCK** | 10



**MONKEY** | 10



**ALLIGATOR** | 12



**CLAM** | 13



**TIGER** | 13



**STRIPED BASS** | 14



**SQUIRREL** | 15



**SEA TURTLE** | 15



**PARROT** | 14

### ANIMAL HABITATS ANSWER KEY

CARD PAIR #	NYC ANIMAL	NON-NYC ANIMAL
1	Robin	Octopus (Ocean)
2	Seahorse	Giraffe (Grasslands)
3	Hermit Crab	Kangaroo (Desert)
4	Butterfly	Polar Bear (Arctic)
5	Horseshoe Crab	Camel (Desert)
6	Worm	Stingray (Ocean)
7	Painted Turtle	Lobster (Ocean)
8	Salamander	Lizard (Desert)
9	Opossum	Elephant (Grasslands)
10	Mallard Duck	Monkey (Jungle)
11	Puffer Fish	Penguin (Arctic)
12	Mantis	Alligator (Wetlands)
13	Clam	Tiger (Jungle)
14	Striped Bass	Parrot (Jungle)
15	Squirrel	Sea Turtle (Ocean)