

Whose Habitat is That Pre-Visit Guide: 2nd to 9th Grade

Students will learn about different animal homes and all the components of a habitat.

These resources will help you and your students prepare to make the most of your zoo experience!

In-Classroom Activities

Explain that a **habitat** is an animal's home. Just like humans, animals need certain things to survive in their home. Learn about the four main components of a habitat:

- Food
- Water
- Shelter
- Space

Oh Deer! Game

Mark two parallel lines on the ground 10 yds apart. Split students in to two groups; one group becomes the "deer" and will line up on one line with their backs to the other students. The other students become habitat components necessary to survive (food, water, and shelter) and line up at the other line with their backs to the "deer". In this activity, when the "deer" is looking for food, it should clamp its hands over its stomach. When a "deer" is looking for water, it should put its hand over its mouth. When a "deer" is looking for shelter, it holds its hands together over its head. The other students acting as the resources will show what they represent with the same hand signals as the "deer". Students get to silently choose one of the resources at the beginning of the round, but they cannot change what component they are during a round. Begin the first round by asking all students to make their signs, emphasizing that they must choose before turning around to face the other group. When the students are ready, you can yell out "1, 2, 3...Oh Deer!" and at this time the "deer" and "resources" turn to face the opposite group, continuing to hold their sign clearly. When the "deer" see the "resource" that matches what they need, they are to run to it; the "resources" must remain stationary. Each "deer" must hold the sign of what it is looking for until getting to the matching "resource". Once the "deer" find their correct match, have them link arms and stand with their chosen resource. Pause the game, assess the results as a group, and explain that any deer that found a match will be able to reproduce, so they must take their match back to their line, and that "resource" becomes a new "deer". Any "deer" who fails to find its match dies and becomes a "resource" on the other side as food, water, or shelter to the "deer" who are still alive.

Play multiple rounds, and record the number of "deer" at the beginning of the activity and at the end of each round so that students can graph the results in the classroom. Do they notice a pattern? What happened to the deer population when there were extra habitat components? What about when there were fewer available?

Explore the characteristics of some major types of habitats found on earth. Using photos as visual reference, have students make a list of animals and plants that could be found in each:

TEMPERATE FOREST

A region that experiences four seasons, generally including cold winters and warm, wet summers. Precipitation is experienced throughout the year in the form of both snow and rain. In this area most plants are deciduous, meaning they lose their leaves at the end of the growing season.

Common plants: broadleaf trees (i.e. maple, oak), coniferous trees (i.e. hemlock, cedar), perennial herbs and flowers, mosses, shrubs

Animal adaptations: hibernation, migration, seasonal coat growth, food storage

DESERT

A very dry habitat, receiving less than 10 inches of rain a year, with sandy, rocky soil and drastic temperature changes between night and day. Hot deserts can reach temperatures over 100F during the day, but drop to below freezing at night.

Common plants: cacti, succulents, grasses, small shrubs

Animal adaptations: burrowing, nocturnal, large ears, light colors

OCEAN

The largest habitat in the world—it covers about 70% of the earth. The movement of the oceans plays a large part in the climate elsewhere, affecting rain, wind, and even temperatures. On average, the water contains a salinity of 3.5%.

Common plants: algae, kelp, phytoplankton

Animal adaptations: fins/flippers, gills, blubber, shells, suction cups

RAINFOREST

A very wet and humid habitat, receiving more than 75 inches of rain yearly. These forests are located within the tropics near the equator, meaning the climate is warm year-round. This habitat covers less than 7% of the earth but holds more than 50% of its species.

Common plants: epiphytes, bromeliads, orchids, palms, banana, figs

Animal adaptations: bright colors, prehensile tails, poisons, camouflage

TUNDRA

A harsh, dry, cold habitat found near the poles of the earth. Beneath the top soil the ground is in permafrost, meaning that it never completely thaws out.

Common plants: lichen, grasses, wildflowers, moss

Animal adaptations: fat stores, thick fur, seasonal color change, migration

GRASSLANDS

A large open habitat that receives too little rain for most trees to grow. They are found on every continent except Antarctica, often located between the desert and the mountains.

Common plants: grasses, wildflowers

Animal adaptations: teeth/digestive systems to eat grass, speed, burrowing, herd behavior



Design a Critter Activity

Give each student a habitat and explain that they will design a made-up organism with specific adaptations to help it succeed in that environment. You can provide backgrounds using photos or printouts and have the students draw the organism on a separate piece of paper, cut it out and then glue it to the environment. Or you can have them draw both the environment and the made-up organism to fit that habitat. Then, have students either share directly with the class or write a paragraph describing which adaptations they chose and how they help the animal survive in their habitat.

Build a Habitat Interactive

This interactive allows students to adjust the precipitation, vegetation, and biome to best fit the animal shown: <https://switchzoo.com/games/habitatgame.htm>

Explore the Earth

Using this interactive app, have students explore different biomes and compare their characteristics such as wildlife diversity, precipitation, temperature, and human impacts: <https://www.hhmi.org/biointeractive/biomeviewer>

Recommended Reading

- [Animals at Home](#) by David Lock
- [Who Lives Here?](#) by Nicola Davies
- [The Great Kapok Tree](#) by Lynne Cherry
- [True Books: Ecosystems](#) by Peter Benoit
- [Biomes & Habitats Series](#) by Laurie Toupin

Discussion/Research Topics

Animals are not the only ones specifically designed to survive. What types of adaptations have plants developed to help them live in different habitats?

How would you adapt if you moved to a different habitat, such as the tundra, desert, or ocean? What types of clothing might you need? What would you do for shelter? Would the foods you eat change?

Could there be smaller habitats within larger ones, with specialized animals in each? Think of a forest—how are animals adapted to the canopy compared to those that live on the forest floor?

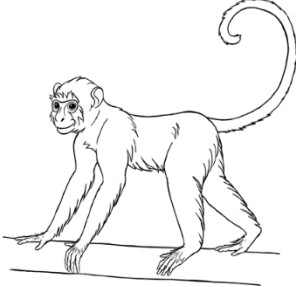
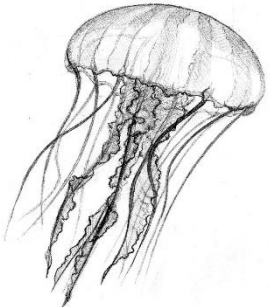
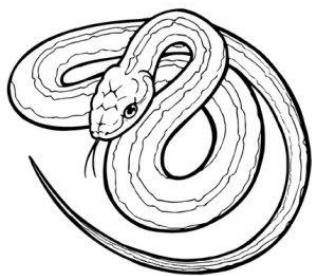

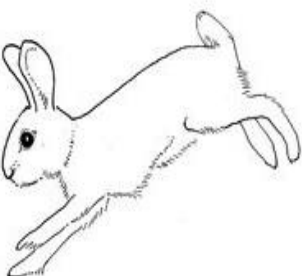
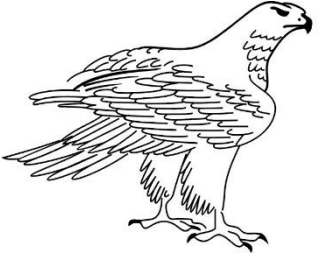
Humans have made some major changes to habitats across the earth, such as building roads, developing for homes, damming up streams, and planting crops. How might some of these changes impact the animals that live there?

Student Worksheet (2nd to 5th Grade)

Circle the **OCEAN** animals, plants & characteristics in **BLUE**.

Circle the **RAINFOREST** animals, plants & characteristics in **GREEN**.

Circle the **DESERT** animals, plants & characteristics in **YELLOW**.

Very little rain		Largest habitat in the world	Contains over half the world's species of plants & animals
	Found near the middle of the earth (equator)		Algae, kelp, plankton
Humid & warm		Cold at night, hot during the day	Cactus
	Affects the weather & climate across the earth	Tall, broad-leaved trees	

*HINT: Some may belong to more than one habitat!

Student Worksheet (6th to 8th Grade)



Each year, many birds participate in a long migration from their summer breeding grounds to their winter feeding grounds. This means they may spend part of the year living in two different biomes; for example, you can find a Wood Thrush singing in your Pennsylvania backyard during the summer, but over winter they move to lush, warm habitats in Central America. Not only do they need to adapt to the unique conditions in each location, but they may face different threats to survival as well.

Using the Venn diagram below, compare the characteristics of the **Temperate Deciduous Forest** and the **Tropical Rainforest**. Include any safety risks or challenges the birds may face in each habitat as well.

Temperate Forest

Tropical Rainforest

Basic Characteristics:

Threats/Challenges:

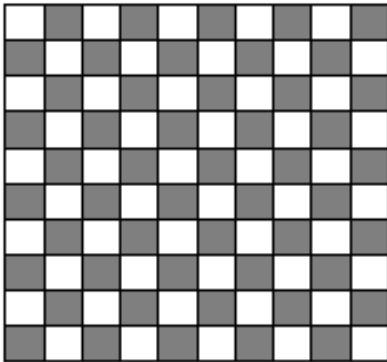


Student Worksheet (9+ Grade)

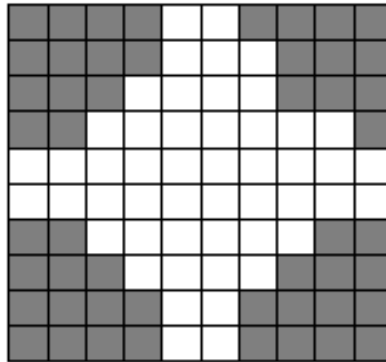
Habitat fragmentation is a major threat to many animals, both locally and across the globe. It is defined as the process by which habitat loss results in the separation of large, continuous habitats into a greater number of smaller patches, isolated from each other by unrelated areas—such as neighborhoods, parking lots, roadways, industrial zones, and other human created spaces. The division of larger habitats creates more challenges for animals in finding all the resources they need to survive; they may need to travel farther to find sufficient food, or cross dangerous human barriers between a water source and their shelter.

Imagine you are a developer who just purchased a large tract of forested land. You plan to build a residential neighborhood with 50 new homes, but you want to prevent as much of an ecological disturbance on the native wildlife as possible. You have several plans for the layout of your development:

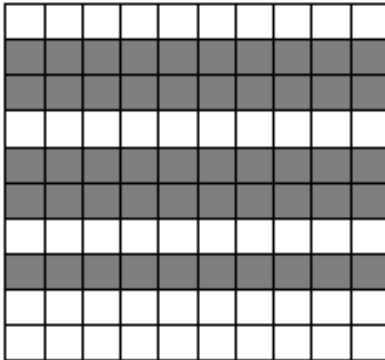


A.



B.



C.

Developed: Natural: 

Which of the development plans would provide the best habitat for wildlife? Why?

What are some ways the community could improve the quality of habitat or reduce the negative effects of habitat fragmentation in the other two plans?