

Have to Have a Habitat

Introduce the concept of a habitat and review living things' requirements for survival by exploring different habitats and the plants that live there. Then, build mini-habitats for New Jersey's native animals with found natural materials.



K-3rd

Skunk cabbage, *Symplocarpus foetidus*, is a common plant found in wet, low-lying areas.

NJSLS Connections:

K-LS1-1: Use observations to describe patterns of what plants and animals (including humans) need to survive.

K-ESS3-1: Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.

3-LS4-3: Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

Learning Objectives:

- **Describe** why different kinds of plants require different habitat types
- **Recognize** sunny/shady and dry/wet environmental conditions in the field
- **Compare and contrast** plant communities found in different habitat types
- **Create** a model habitat to demonstrate understanding that animals depend on plants for survival

Instructor Background

Even within the same geographical region, environmental conditions play a large role in determining habitat type. As with animals, some plants can tolerate a wide range of environmental conditions while others have more specialized requirements.

The hydrological conditions preferred by a plant species can be categorized by its wetland indicator status. Plants may be obligately upland or wetland, meaning they are only found in those areas, or facultative, meaning they are equally likely to be found in upland areas as wetland areas. The included activity focuses on sunlight exposure and hydrology, but soil type and the surrounding plant community also serve to establish habitat type.

All animals, either directly or indirectly, rely on plants for food. While herbivores and omnivores eat plants, carnivores and omnivores also consume animals that eat plants. In this way, an animal's habitat must not only be able to provide food to sustain the animal itself, but also provide food to sustain the prey it feeds on. Plants are also an important source of shelter for animals. They provide a place to hide from predators, protection from the elements, and material to nest and raise young. Finally, plants produce the oxygen that all animals need to live.

Plant Habitat Comparison Chart

Supplies

- Plant Habitat Comparison Chart worksheets
- Clipboards or recycled cardboard to lean on
- Double-sided tape, masking tape, or glue dots, to attach plant specimens to page

Preparation

Scout areas for each plant habitat type: wet and sunny, dry and sunny, wet and shady, and dry and shady. These spots should be within walking distance for your students. Ensure that the area is safe for your students to explore the plants, i.e. no thorns or poison ivy, or give ample warnings if present.

This activity may be stretched into a longer nature walk with breaks in-between plant habitat sites to rest, snack, and play.



Eva Popp

Virginia spring beauties (*Claytonia virginica*), prefer wet woodland habitats.

Plant Habitat Comparison Procedure

Introduction

Introduce the concept of a habitat: "A habitat is a plant or animal's home. It has all the things it needs to survive, like food, water, and space to live and grow". Review how plants don't need to find their own food but can make it themselves from the sun.

Explain: "Different kinds of plants need different habitats. Some plants like to live where they can be in the sunshine all day, like in a meadow. Some plants only like to be in the sun for part of the day. Other plants like the shade and prefer to grow under big trees where only a little bit of sunshine reaches the forest floor".

"Some plants like dry soil and cannot survive if their roots are in muddy wet soil for too long. Other plants like to live in a spot that is very wet and muddy all the time, like at the edge of a pond. A habitat that is wet and muddy all or most of the time is called a wetland. There are many special plants and animals that can only live in wetland habitats."

Activity

1. Share behavior expectations for the outdoor activity, distribute materials, and head out into the field. When you've reached one of the predetermined plant habitat sites, ask the class to first determine the kind of plant habitat they're looking at: "Are we in a wet spot or a dry spot? A shady spot or a sunny spot?".
2. Invite students to explore the area and select a few small plants or plant parts to tape in the corresponding plant habitat box on the comparison chart. With older students you may give each child their individual chart with a clipboard. For preschool age and younger students, you may choose to make a large poster-size comparison chart on cardboard to complete the activity as a class.
3. After all four plant habitat types have been visited, allow students to observe the completed plant habitat comparison chart.
4. Ask questions to spark discussion: "Did each zone have different plants?", "Did any two or more zones share the same kind of plants?", "What plants can live in both sunny and shady habitats, or wet and dry habitats?", "What plants only live in shady/sunny habitats, or only live in dry/wet habitats?".

Note: it is not important to identify the plants and refer to them by name for this comparison activity. You can use descriptive names like "yellow flower", "round leaf", etc.

Build a Mini-Habitat

Supplies

- String, hula-hoop, etc. to delineate habitat building spaces
- Pictures or figurines of NJ native animals

Optional:

- Have to Have a Habitat reflection worksheet
- Pencils
- Clipboards or recycled cardboard to lean on
- Shovels or other tools
- Container of water
- Pre-sourced natural materials including a variety of living and dried plants and leaves, sticks, rocks, etc.

Preparation

Scout an area for the habitat construction activity. Designate a space using a hula hoop, string, etc. for each student to build their animal's habitat.

Ensure there is a variety of plants and other materials like rocks nearby that can be used for habitat building or collect ahead of time and bring them to the site. You may also choose to provide tools such as shovels, clippers, etc. and a container of water for students to add a water source to the habitat.



Left: a beaver lodge at Lake Surprise in Watchung Reservation. North American beavers require trees and water in their habitat so they may build a lodge for shelter and raising young.

Eva Popp

Mini-Habitat Procedure

Introduction

Review the definition of a habitat and recall that a living thing's habitat should have everything it needs to survive: food, water, and space to live and grow.

Contrast a plant's need for food with an animal's need for food: "We know that plants can make food from the sun. How do animals get food? They eat plants, or they eat other animals that eat plants".

Ask if animals need plants as a resource for anything besides food. Introduce and discuss how animals rely on plants for shelter.

Activity

Assign each student an animal native to New Jersey or allow them to select from two to three choices. Give each student a toy figurine or laminated photo of their animal.

Ask students to think about what their specific animal needs in its habitat. Option to invite students to write these needs down to help plan for building the habitat.

Allow students to bring their animal picture or figurine to the outdoor space to represent the animal. Provide or allow students to collect leaves, sticks, rocks, and plants to create a habitat for their animals to live in. Also provide tools to dig with and water for students to add to the habitat.

Throughout the activity, prompt students to recall or check the list of their animal's needs to make sure their animal has all its needs met in its habitat.

Share and Discuss

Once finished, ask students to share what they added to their animal habitat and why. Discuss:

- What is your animal?
- What does your animal need to survive?
- What is in your animal's habitat?
- What plants are in the habitat?
- How does your animal use these plants?
- What would happen to your animal if it didn't have [blank] in its habitat?

Reflection Worksheet

To conclude the activity, invite students to complete the Have to Have a Habitat reflection worksheet outdoors on clipboards or back in the classroom.

Materials

- Plant habitat comparison chart https://www.canva.com/design/DAFh-aEtfGY/4WKp3lt4-3rPOHeVCgezA/edit?utm_content=DAFh-aEtfGY&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton
- Have to Have a Habitat reflection worksheet https://www.canva.com/design/DAFh-9d1384/8hK9kBz1wv1HmfWr69m9Wg/edit?utm_content=DAFh-9d1384&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton

Resources

More information about USDA Wetland Indicator Status:

- https://plants.usda.gov/assets/docs/PLANTS_Help_Document.pdf#page=22
- <https://plants.usda.gov/home/wetlandSearch>

Animals in NJ:

- <https://dep.nj.gov/njfw/wildlife/reptiles-and-amphibians-in-new-jersey/>
- <https://dep.nj.gov/njfw/wildlife/new-jerseys-mammals/>
- <https://dep.nj.gov/njfw/wildlife/new-jerseys-songbirds/>

Habitat information for kids:

- <https://education.nationalgeographic.org/resource/habitat/>