



Plants Around the World (Grades 4-7)

During this tour through the tropical rotunda, desert house and native bog garden, students will learn about biomes and habitats and the adaptations plants have that enable them to survive better in those habitats. Below are pre and post visit activities to introduce students to biomes and plant diversity.

Pre-visit Activity – Habitat Investigation

Objective

Through the exploration of a small habitat, students will learn that a habitat is a home to animals and plants.

Materials

- One Small Place in a Tree by Barbara Brenner or A Log's Life by Wendy Pfeffer
- Spoons and/or hand trowels
- Magnifying lens
- Hula hoops, string or something similar to define habitat space
- Pencils
- Journal or paper
- Optional: clipboards

Activity

- Preparation: choose a place in the schoolyard that has relatively soft soil and would not be negatively impacted by active investigations and digging. Define 4 – 6 small spaces (approximately 2 ft X 2 ft) for the students to investigate in groups. You can do this by setting down hula hoops or laying down string.
- Read One Small Place in a Tree or A Log's Life. Explain that each of those small spaces (log or tree) is a habitat that is home to animals and plants. Habitats can be small like a tree or big like a forest. Ask them to describe what things animals and plants get from their habitat (animals: water, shelter, air and food; plants: sunlight, water, nutrients and air). Did they see those things in the story? What types of animals live in the habitat portrayed in the book? What other places in Georgia make a good habitat (bog/wetland, puddle, park, backyard, compost pile).
- Break the class into groups of 3 – 4 students. Explain that each group will look for living things (plants and animals) in a small habitat and record their findings in a journal or on a piece of paper.

- Take the students out to the prepared investigation area. Before they start digging and investigating, ask them to describe their habitat and list what animals and plants they think they will find in their habitat.
- Pass out investigation tools: magnifying lenses and spoons or shovels. Have the students look everywhere in their habitat and list and or draw every living thing they find.
- In the classroom, discuss their findings. What did they find that was surprising? Where do they think animals got food, shelter and water in their small habitat?
- Explain that the habitat they investigated is part of a larger biome called the Temperate Deciduous Biome. This covers most of the eastern United States (show a map if possible). Biomes are distinct ecological communities of plants and animals living together in an area of particular climatic and geological conditions. Biome differentiation is so distinct that biome areas can be seen from space! Imagine you are in space, when you look down at earth, what biome would be yellow (desert), dark green (forest), light green (grassland), white (tundra) or blue (aquatic)?
- Discuss the biome they live in – Temperate Deciduous Forest: four seasons, trees that shed their leaves in the fall, 30 – 60 inches of rainfall a year.
- Time permitting: read through books about other biomes (see book recommendations below) or look at pictures of each biome to discover distinguishing characteristics of earth's biomes.
- During your visit to the Garden, students will explore a tropical rainforest biome, a desert biome and a native wetland habitat.

Pre- Visit Activity: Camouflage Creatures

Objective

Students will learn that animals and plants have special characteristics that help them adapt to their habitats and/or biome.

Materials

- Book: Where in the Wild?: Camouflaged Creatures Concealed... and Revealed by David Schwartz (Author), Yael Schy (Author), Dwight Kuhn (Photographer)
- Large popsicle sticks
- Markers

Activity

- Read/look through Where in the Wild?: Camouflaged Creatures Concealed... and Revealed. Have students try to find the different camouflaged creatures in the pictures and read through the different animal's descriptions.
- Discuss the characteristics animals have in the book that allow them to camouflage to their environment. Explain that over time, animals with the best disguise survive and produce offspring that hopefully have the same characteristics as their parents. Over many generations, animals specifically adapt to camouflage to their environment. Ask them to think about some of the animals in the book in a different habitat or biome. Would they still be camouflaged?
- Give each student a large popsicle stick and some markers to make a camouflaged critter. Have the students color/decorate their popsicle stick critter so that it specifically camouflages with something in the classroom.
- Ask half the class stand in the hallway or facing the wall so that they cannot see where the rest of the class is placing their camouflaged critters. Meanwhile, the rest of the class places their camouflaged critters somewhere visible in the classroom (you may need to discuss the difference between hiding under something and camouflaging). Once all the critters have been placed, bring the rest of the students back into the classroom to try to find the camouflaged creatures. Switch rolls so that both groups hide and seek.
- Discuss which animals were the most difficult to find and why. If you have time, do the activity again. What did they learn the first round? What kinds of changes are they making?
- Discuss the different biomes and ask them to think about other characteristics animals have that help them adapt to their environment. What sorts of challenges would animals face in each biome? What types of characteristics do they think animals have in the desert, rainforest or temperate forest that help them survive? Plants also adapt to their biome. What types of adaptations do they think plants have in the desert, rainforest or temperate forest that help them survive?

Pre-Visit Activity: What will we see at the Atlanta Botanical Garden?

Objective

Students will hypothesize what they will see during their visit to the Atlanta Botanical Garden.

Materials

- Books about tropical rainforest and desert environments (see below for recommendations)
- Blackboard, white board or large sheet of paper
- Chalk or dry erase markers

Activity

- Read through books and look at pictures that feature tropical rainforest and desert environments. While looking through the books ask the students to make observations on what the plants look like and what the overall environment looks like.
- Explain that during their visit to the Atlanta Botanical Garden, the students will walk through a desert and tropical rainforest environment. Each environment is inside the Fuqua Conservatory and features plants that live in the tropical rainforest or the desert.
- Ask them to close their eyes and visualize standing in the rainforest room. What will they see? What will it feel like? Is it sunny or shady? Is it wet or dry? Write their answers on the board or large sheet of paper.
- Ask them to close their eyes again and visualize standing in the desert room. What will they see? What will it feel like? Is it sunny or shady? Is it wet or dry? Write their answers on the board or large sheet of paper.
- Your class will revisit their ideas after their visit to the Garden to compare.

Post-Visit Activity: What did we see at the Atlanta Botanical Garden?

Objective

Students will reflect on what they saw during their visit to the Atlanta Botanical Garden.

Materials

- Brainstormed list/notes from Pre-Visit Activity: What will we see at the Atlanta Botanical Garden?
- Chalk or markers
- Paint
- Paint brushes
- White construction paper

Activity

- Revisit the list of notes/ideas they created before their visit to the Atlanta Botanical Garden and reflect on each biome individually: tropical rainforest and desert. What ideas were correct? What did they see in each biome that was surprising or unexpected? What characteristics did plants have in each biome? How did each biome feel? What did they learn that they didn't know before? What was their favorite tour stop?
- Have the students paint a picture of one of the biomes visited during their visit: tropical rainforest, desert or wetland habitat in a temperate forest. Ask them to include three different ways the plants adapted to their biome/habitat and maybe any special plants they saw during their visit.
- Time permitting: have the students share their painting with the class and then display them for everyone to admire and reflect on their visit to the Garden.

Post-Visit Activity - Design A Plant

Objectives

Students will use knowledge learned during their visit to the Atlanta Botanical Garden to design their own plant.

Materials

Various craft supplies such as construction paper, markers, crayons, glue, tape, cardboard, string, chenille stems, recycled cups, plastic bottles, fabric, felt, etc

Activity

- Review information learned during their visit to the Garden. What did plants look like in the desert, tropical rainforest and native bog habitat? Why did they have those characteristics? Make a list of different plant characteristics on the board for each habitat.
- Ask the students to design-a-plant that is adapted to survive certain conditions or a particular habitat using the craft materials. For example, students might create a plant that can:
 - Live after a volcanic eruption
 - Hold onto rocks in a river
 - Survive in a pasture with stomping and munching cows
 - Live on a windy mountaintop
 - Survive a year without water
 - Live in a flood zone
- After students have completed their work, ask them to share their designer plants with the class. Discuss what characteristics each plant has that enables it to live in its challenging environment.

Suggested Children's Books:

Tropical Rainforest

I Didn't Know that Some Plants Grow in Mid-air by Claire Llewellyn

Welcome to the Green House by Jane Yolen

Rainforest (Look Closer) by Barbara Taylor

Destination Rainforest by Jonathan Grupper

A Walk in the Rainforest by Kristin Joy Pratt

Desert

America's Deserts: Guide to Plants and Animals by Marianne D. Wallace

Cactus Hotel by Brnda Z. Guiberson

About Habitats: Desert by Cathryn Sill and John Sill

Creatures of the Desert World by Barbara Gibson

The Seed & the Giant Saguaro by Jennifer Ward

Wetlands/Carnivorous Plants

About Habitats: Wetlands by Cathryn Sill and John Sill

America's Wetlands: Guide to Plants and Animals by Marianne D. Wallace

Venus Flytraps and Waterwheels: Spring Traps of the Plant World by Victor Gentle

Hungry Plants by Mary Batton and Paul Mirocha