



## Plant Diversity (K-3)

During this tour through the tropical rotunda, desert house, native bog garden and rose garden, students will learn how plants can look different in different habitats.

### Pre Visit Activity - Plant Parts

#### **Objective**

Students will learn about the different parts of a plant and their functions and then design a unique plant.

#### **Materials**

- Uprooted plant (flowering weeds make excellent specimens), a picture of a flowering/fruiting plant, or samples of different plant parts such as seeds, fruits, flowers and leaves
- Paper
- Drawing materials

#### **Activity**

- Show the students a picture of a plant or your uprooted plant. Point to the different parts of the plant: root, stem, leaf, flower, fruit and seed. Discuss each plant part and its function as part of the plant. Below is a list of common functions:
  - Roots - take in water and nutrients that the plant needs to live. Many plants also use their roots to anchor them into the ground.
  - Stems - act like a giant straw and bring water, nutrients and food to the plant.
  - Leaves - make food for the plant by processing sunlight, water, and air into sugars. This process is called photosynthesis.
  - Flowers - the reproductive part of the plant
  - Fruits - hold the plant's seeds. Many fruits are fleshy in order to entice animals to eat them and thereby disperse the seeds.
- After discussing plant parts and their functions, ask the students to draw and label a plant with all the different parts. Encourage them to use their imagination and draw a unique plant that looks different and distinctive. If there is time, ask each student to present their plant to the class and display their drawings for everyone to admire.
- Lead a discussion on ways each plant picture is different. How are the flowers, leaves, roots, stems or seeds different from other drawings? How do plants look different in their own backyards?

## Pre-visit Activity - Turning Over A New Leaf

### **Objective**

Students will learn that leaves can look similar and different.

### **Materials**

- Pencil
- Scissors
- Green paper
- Optional: brown paper for tree trunk

### **Activity**

- Ask the students ways that plants can look different. Discuss some of their answers.
- Walk through the school grounds and ask the students to collect 2 leaves that look very different and to make observations about the differences between the plants they encounter.
- Return to the classroom and discuss what they saw. How did the plants look different? What were some differences they observed in their leaves?
- Give each student a sheet of green paper, pencil and scissors. Ask the students to draw and then cut out their own leaf sample that is different from both of the leaves they collected.
- Give students an opportunity to show the class both of their collected leaf samples and the leaf they cut out. They should talk about the similarities and differences between the three leaves.
- From a large piece of brown paper, cut out a tree shape and decorate the tree with all their different leaf samples. How are their cut-outs similar or different?
- Reflect on all the ways leaves can be different and what they think some leaves have in common.

## Pre-Visit Activity: What will we see at the 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 either the tropical rainforest or 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.
- You 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 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 remember 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? How did those characteristics help them survive in their habitat? 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:

### Plant Parts/Differences

A Fruit is a Suitcase for Seeds by Jean Richards (author) and Anca Hariton (illustrator)

Leaf Man by Lois Ehlert

Eyewitness Plank (DK Eyewitness Books) by David Burnie

The Reason for a Flower by Ruth Heller

The Tiny Seed by Eric Carle

### Rainforest Biome

Welcome to the Green House by Jane Yolen

The Rainforest Grew All Around by Susan K. Mitchell and Illustrated by Connie McLennan

Sounds of the Wild: Jungle (Pledger Sounds) by Maurice Pledger

Rainforest (Look Closer) by Barbara Taylor

Destination Rainforest by Jonathan Grupper

Over in the Jungle: A Rainforest Rhyme by Marianne Berkes

A Walk in the Rainforest by Kristin Joy Pratt

### Desert Biome

About Habitats: Desert by Cathryn Sill and John Sill

Life in a Desert by Carol K. Lindeen

Here is the Southwestern Desert by Madeleine Dunphy and Anne Coe

Desert (Look Closer) by Barbara Taylor

Creatures of the Desert World by Barbara Gibson

The Seed & the Giant Saguaro by Jennifer Ward

### Wetland Habitat/Carnivorous Plants

About Habitats: Wetlands by Cathryn Sill and John Sill

Here is the Wetland by Madeleine Dunphy and Wayne McLoughlin

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

Flytraps: Plants that Bite Back by Martin Jenkins and Illustrated by David Parkins

DK Readers: Plants Bite Back! (Level 3: Reading Alone) by Richard Platt