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# **Botany Basics**

## **Plant Parts**

### **Facilitator Guide**

#### **Big Picture Concept**

A seed contains everything needed to grow a new plant.

#### **Program Description**

The amazing seed contains everything to grow a new plant. Students will take a Garden walk to observe seeds in action, dissect a seed, examine their component parts through a microscope, sketch and label the parts of a seed, and make a seed book (journal) to take home.

#### **Program Sections**

- I. Welcome/Introduction & Seed Hunt
- II. Seed Conversation
- III. Seed Dissection, Observation, & Sketching
- IV. Field Observation Book, Labeling, & Sketching
- V. Seed Walk
- VI. Take-Home Message

#### **Suggested Time**

15 min  
10 min  
25 min  
35 min  
25 min  
10 min

#### **Total time:**

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**2 hours**

#### **Materials**

microscopes  
magnifying glasses  
various seeds/fruit: coconut, poppy, sesame and bean seeds (i.e., 7 bean soup)  
reference books with pictures of seeds  
small lead pencils  
colored-pencils  
paper  
cardboard (for seed books)  
labels (for seed books)  
brads  
glue sticks/glue

**Preparation Checklist**Before your group arrives

- Sign in
- Collect group confirmation sheet from your mailbox
- Each classroom should be set up with the proper materials. Double check to make sure that all of the materials are available
- Walk around the Garden to check on good sites to find seeds and other great things for the children to notice. This is the time to plan the path you will take with your group for their seed hunt.

After your group departs

- Clean up materials and return to storage area
- Return leftover seeds to Classroom #3
- Sign out on volunteer card
- Notify the Coordinator of School Programs of any positive feedback and/or concerns

**I. Welcome/Introduction (15 minutes)****Location: From the portico to the classroom****• Welcome/Introduction**

Welcome students, teacher(s), and chaperones at the portico in front of the Gateway Visitor Center. This might be a good time to address the chaperones and assign each of them to a group of children. The chaperone will be responsible for helping to guide the children in their group through their activities at the Garden.

**• Seed Hunt**

Introduce yourself and briefly explain what they will do today: explore and observe. *"Today you are a plant scientist"*. Say: What do scientists do? *Scientists make observations so today they will need to look for some specific plant parts to observe.* Begin by asking the students to look for specific items in the Garden as you guide them to the classroom. Examples include pinecone, pods, and berries.

**II. Seed Conversation (10 minutes)**

Once inside the classroom, ask the class what they were able to see as they walked through the Garden. Most likely they will begin naming a variety of things including the fruits you asked them to look for. Ask them "What do these things have in common"? They all contain seeds. Then you could ask *"What does a seed do"* or *"What happens when I plant this*

*seed in dirt and water it*”? Eventually you want to help them discover the big picture idea that seeds contain everything needed to grow a new plant.

### **III. Seed Dissection, Observation, & Sketching (25 minutes)**

#### **Location: Classroom**

- **Observe a variety of seeds (5 min)**

As scientists the students will be looking at a variety of seeds. For this part you'll want to initiate a discussion of what they can use to look at these seeds (eyes, magnifying glasses, microscope...maybe). They will probably need assistance using the magnifying glasses but first let them experiment with them on their own a bit.

You'll want to guide them by asking questions like “Are these seeds the same?” “How are they different?” “What do they feel like?”

- **Dissect seeds (20 min)**

Using the presoaked bean seeds (soaked in water overnight) you can ask the students to closely look at them.

Here, they will do what scientists do...make drawings of their seed from many different perspectives...intact and dissected (however they want to approach it).

- You can ask them what's inside the seed (food to grow the plant, the first leaves of the plant). If they don't know you can point them to some books where they can look for this information.
- Encourage them to use magnifying glasses and “microscopes”.
- Be sure to tell everyone to make drawings of what they see for their field observation book.

### **IV. Field Observation Books, Labeling, & Sketching (35 minutes)**

#### **Location: Classroom**

Supplies for construction the field books include pre-cut pieces of paper, a cover sheet for the book cover, brads, small pencils, string, glue, and colored pencils. The field book will hold their sketches from the seed dissection and it can also serve to hold their observations and sketches from their seed hunt in the Garden.

**V. Seed Walk (15 min)****Location: in the Garden**

Begin a short seed hunt in the Garden. Remind the students to stay on the paths and always keep their chaperone in sight. You may ask the students to record their observations in their field books. You can give them specific things to look for (as you did in the beginning) or you can just let them explore. You may also give them 10-15 minutes to find seeds (with their eyes...no collecting), record their findings in their field books, and then discuss what they found as part of the take home message portion of the program.

**VI. Take-Home Message (10 minutes)**

- Ask students to share something that they learned about seeds today.
- Thank everyone for visiting the CBG and invite them to return with their families.
- Direct teacher(s) and chaperones to bathrooms if needed.