

## Build a 3-D Plant Model

### Source:

- Plants: Mind-Boggling Experiments You Can Turn Into Science Fair Projects by Janice VanCleave, John Wiley & Sons, Inc., 1997.
- Play and Find Out About Nature: Easy Experiments for Young Children by Janice VanCleave, John Wiley & Sons, 1997.

### Curriculum connections:

Science and Technology – Life Systems (Grade 3)

#### Overall Expectations

- Demonstrate an understanding of the similarities and differences in the physical characteristics of different plant species and the changes that take place in different plants as they grow.

#### Specific Expectations

- Identify the major parts of plants (e.g., seeds, stem, pistil) and describe their basic functions.
- Use appropriate vocabulary in describing their investigations, explorations, and observations (e.g., *stem, pistil, stamen, flower*).

### Basic Description:

In this activity, students use a variety of craft materials to construct a three-dimensional model of a flowering plant. In the process of constructing their plant, students learn the major plant parts and their basic functions.

### Materials:

- Photocopies of plant part patterns -one per student
- Green construction paper - approximately ½ a sheet of 8 x11 per student
- A variety of bright coloured construction paper - approximately ½ a sheet of 8 x 11 per student
- Flexible straws (use green ones if they are available) - one per student
- One-hole paper punch – the more, the better!
- Transparent tape - the more, the better!
- Green pipe cleaners – one 5 cm piece per student
- Yellow pipe cleaners – six 7.5 cm pieces per student
- Modelling clay or brown play dough – one walnut sized ball of clay per student
- Pencils
- Scissors

### Time Allotment: 45 minutes

Gather all necessary materials (You may choose to create your own model ahead of time to use as an example in your lesson).

- Preparation time: 10 minutes

### Procedure:

As the students are assembling their flowers, take the time to stop and talk about each plant part and its basic function.

1. Provide each student with a pattern sheet and scissors; the students should cut out the four pieces on the pattern sheet.
2. Provide each student with one piece of bright construction paper (do not use green). The students should lay the petal pattern on their piece of bright coloured construction paper and trace around the pattern.

3. Provide each student with one piece of green construction paper. The students should lay the three remaining patterns on the green paper. Instruct your class to trace the pistil and sepal pattern once each but trace the leaf pattern twice.
4. Instruct your students to cut out each tracing.
5. Demonstrate to the class how to make a hole in the centre of the green sepals and the petals using the one-hole paper punch. Circulate throughout the classroom, passing the hole punches around and helping the students with this step.
6. Provide each student with a piece of tape and instruct the class to tape the base of the pistil to one end of the green pipe cleaner.
7. Demonstrate to the students how to carefully thread the other end of the green pipe cleaner first through the hole in the petals, then through the hole in the sepals, and finally into the straw.
8. Instruct your class to bend back approximately 1.25 cm of one end of each yellow pipe cleaner (so that they look like hockey sticks).
9. Demonstrate to the students how to carefully insert the straight end of each yellow pipe cleaner through the holes in the petals and sepals and into the straw so that they surround the pistil (the yellow pipe cleaners are the flower's stamens).
10. Provide each student with two pieces of tape and demonstrate how to tape the leaves to the straw.
11. Provide each student with a piece of modelling clay or play dough (this is your soil!). Demonstrate how to flatten the clay so that it is ½ - 1 cm thick. Instruct your students to push the end of the straw into clay so that the plants stand up on their own.
12. You are all finished! The students should place their plant model on the corner of their desk and clean up all materials.

### Summary:

- Review the name and the basic function of each plant part. Ask the students which basic plant part is missing in their model (the roots). Where are the roots located? Discuss the functions and the importance of roots to plant growth.
  - Lead a game of 'Simon Says...' to help the students remember the name of each part (e.g. 'Simon says point to the pistil'). Circulate throughout the class to ensure that all students are pointing to the right part (pencils could be used as pointers to make it easier for you to observe). You may choose to return to this game several times throughout the unit to reinforce learning (students should leave their flowers on their desk or in a safe place in the classroom throughout the course of the unit).
- ❖ For an extension of this activity see "**Pollution Demonstration**".

