3.D.1 Plant Structures

Sketching basic plant structures

Grade Level	3
Sessions	(1): 1 at 50 minutes
Seasonality	Spring
Instructional Mode(s)	Whole Class, Individual
Team Size	N/A
WPS Benchmarks	03.SC.TE.04, 03.SC.LS.07
MA Frameworks	3-5.TE.2.1, 3-5.LS.0.3
Key Words	Bark, Flower, Leaf, Plant, Root, Seed, Sketch, Stem, Structure, Wood

Summary

Sketches are commonly used to quickly capture information on paper. After learning to identify various plant structures and their respective functions, students will demonstrate their knowledge by sketching each plant structure and describing its function.

Learning Objectives

2002 Worcester Public Schools (WPS) Benchmarks for Grade 3

1. 03.SC.TE.04 Describe different ways in which a problem can be represented, e.g., sketches, diagrams, graphic organizers, and lists.
2. 03.SC.LS.04 Identify the structures in plants (leaves, roots, flowers, stem, bark, wood) that are responsible for food production, support, water transport, reproduction, growth, and protection.

2001 Massachusetts Frameworks for Grade 3

1. 3-5.TE.21 Describe different ways in which a problem can be represented, e.g., sketches, diagrams, graphic organizers, and lists.
2. 3-5.LS.21 Identify the structures in plants (leaves, roots, flowers, stem, bark, wood) that are responsible for food production, support, water transport, reproduction, growth, and protection.

Additional Learning Objectives

None

Required Background Knowledge

None

Essential Questions

1. What is a sketch (see Vocabulary with Definitions)?
2. Why is a sketch useful?
3. How can a sketch show various plant structures?
4. What are the functions of various plant structures?

Introduction / Motivation

The instructor might bring to class a variety of vegetables, flowers, and woody plants (see Materials List) so that students can examine various plant “structures” (see Vocabulary with Definitions).

Procedure

The instructor will:

1. Lead a class discussion about plant structures, using a variety of plants to illustrate leaves, roots, flowers, stems, bark, and wood (see Materials List).
2. Allow small groups of students to study the example vegetables, flowers, and woody plants.
3. Lead students through the attached worksheet (see Sketching Plant Structures).
4. Ask students to write a short description of the function of each plant structure.

Materials List

Materials per Class	Amount	Location
Leaves (ex. lettuce, spinach, cabbage)	Varies	Grocery store
Roots (ex. carrot, potato, turnip, beet)	Varies	Grocery store
Flowers (ex. broccoli, cauliflower, cut flowers)	Varies	Grocery store
Stems (ex. celery, white carnations, cut flowers)	Varies	Grocery store
Bark (ex. from trees, mulch)	Varies	Outdoors
Wood (ex. pencils, chairs, sticks, blocks, logs)	Varies	Classroom, outdoors

Materials per student	Amount	Location
Sketching Plant Structures Worksheet	One	End of lesson plan – print or photocopy

Vocabulary with Definitions

1. *Bark* – the tough outer covering of trees that protects the inside of trees, creates new plant cells, and transports fluids.
2. Flower – the showy, usually colorful part of a plant that is used for producing and receiving pollen.
3. *Leaf* – a usually flat, green, plant structure used in photosynthesis and transpiration (breathing).
4. *Root* – a plant structure that provides stability to a plant, collects water and nutrients from the soil, and is usually found below the ground.
5. *Seed* – a plant structure that contains the *embryo*, or tiny, developing plant.
6. *Sketch* – a brief outline or overview drawing.
7. *Stem* – a thin part of a plant that connect various structures (leaves, flowers, roots) to each other and functions in the transport of water and nutrients.
8. *Structure* – the arrangement of various plant tissues.

9. *Vegetable* – the edible part of a plant, such as the root, leaf, stem, flower, or bud, other than the seed-bearing embryo (fruit).
10. *Wood* – the layer of plant tissue just below the bark that provides structure to a plant and transports water.

Assessment / Evaluation of Students

The instructor may assess the students in any/all of the following manners:

1. Collect student worksheets to determine whether students understand the use and creation of a “sketch”.
2. Collect student worksheets to determine the level of understanding of various plant “structures” and their respective functions.

Lesson Extensions

1. Place white carnations or roses into vases of water; add several drops of food coloring. The veins in the flower’s petals will change color once the flower’s stem draws water from the vase into the petals.
2. Help students to grow plants from seed; explain each stage of new growth.

Attachments

1. Sketching Plant Structures

Troubleshooting Tips

None

Safety Issues

None

Additional Resources

None

Sketching Plant Structures

Name: _____ Date: _____

Complete the chart below. Look carefully at the example plants that your teacher gives you. Make a **sketch** of each special plant **structure**. Color your sketches. Beside each sketch, describe the function of each structure.

Plant Structure	My Sketch	Function
Bark		_____ _____ _____ _____ _____
Flower		_____ _____ _____ _____ _____

Plant Structure	My Sketch	Function
Leaf		_____ _____ _____ _____ _____
Root		_____ _____ _____ _____ _____

Plant Structure	My Sketch	Function
Seed		_____ _____ _____ _____ _____
Stem		_____ _____ _____ _____ _____

Plant Structure	My Sketch	Function
Wood		_____ _____ _____ _____ _____