





Plant Parts and Their Functions

Overview:


Students will learn the structure and function of the six main parts of a plant (root, stem, leaf, flower, fruit, and seed).

Objectives:

At the end of the lesson students will be able to:

-  **Identify** the six main parts of a live plant.
-  **Explain** the function of each part.







Preparation:

-  Prior to the lesson, create four bags filled with six different kinds of fruits and vegetables. Inside each bag, place one fruit or vegetable to represent each plant part. For example, one bag will have 1) a radish (to represent the roots), 2) a celery (to represent the stem), 3) lettuce (to represent the leaves), 4) broccoli (to represent the flower), 5) an apple (to represent the fruit) and 6) an ear of corn (to represent the seeds).

**Note: if you cannot obtain actual vegetables, pictures can be used instead.

- Roots: radishes, carrots, beets, kohlrabi
- Stems: celery, asparagus, rhubarb, swiss chard
- Leaves: lettuce, spinach, mustard greens, kale
- Flower: broccoli, cauliflower, artichoke, brussels sprouts
- Fruit: apple, pumpkin, eggplant, pepper
- Seeds: corn, beans, wheat, peas



Materials:

-  A sunflower (or another live plant), where it is easy to identify all six parts
-  Four bags of fruits and vegetables that represent each plant part (one bag for each group of students)
-  Handout 1: "Plant Parts"
-  Handout 2: "Plant Parts Chart"
-  Quiz: "Plant Parts and Their Functions"
-  If you have time for students to slice up the vegetables for a snack:
 - Cutting boards
 - Knives

On the Board:

-  Student Reflection Questions

Suggested Snack:

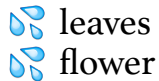
-  If time allows, have students chop the vegetables from the activity and eat as a salad or as veggie sticks.
-  If not, prepare a salad in advance using the same ingredients as the activity.

Vocabulary:



root

stem



leaves

flower



fruit

seed

Learning Activities:

I. Presentation: Plant Parts (25 min.)

- A. Tell students that the fruits and vegetables we eat are all various parts of a plant. Eating fruits and vegetables is very important to our health, and more than half our diet should come from plants!
- B. Distribute Handout 1: “Plant Parts” showing plants’ different edible parts and discuss their functions. (Scaffold option: Make this a manipulative activity by cutting the boxes in Handout 2 so that you have the six Plant Parts in one box and the six groups of functions in another box for each group of students. Have students work in fours to match them up.)
 - Root:
 - Usually forms below the ground
 - Takes in water, minerals, and nutrients from the soil
 - Stores nutrients for the plant
 - Transports food and water to other parts of the plant
 - Acts as an anchor for the plant
 - Stem:
 - Supports the plant
 - Allows the leaves on its branches to be exposed to sunlight
 - Transports food and water to other parts of the plant
 - Sometimes undergoes photosynthesis to produce food in the plant
 - Leaf:
 - Undergoes photosynthesis (takes in carbon dioxide and sunlight to create glucose, or food for the plant, and releases oxygen)
 - Leaves include: stoma, epidermis, cuticles, veins, chlorophyll, and chloroplasts
 - Flower:
 - Contains organs for sexual reproduction
 - The site where pollination occurs
 - Fruit:
 - Produced after fertilization
 - The enlarged ovary surrounding the newly developed seed is the true fruit of the plant
 - Holds and protects the seed
 - Seed:
 - Fertilized ovules grow and swell to form seeds after pollination has occurred.

- A seed contains an embryo (which has all the necessary genetic information to create a new plant), an endosperm (the food required to sustain early growth), and a seed coat (which protects the seed from disease).
 - C. Next, have students look at a live plant in the garden and collectively try to identify each part. A sunflower is a great example.
 - D. Explain the connection between structure and function. For example, roots are long and anchor-like because they need to “look for” and transport nutrients.
2. Activity: What parts of the plant do we eat? (20 min.)
 - A. Divide the class into four groups. Give each group a bag with one item from each category of Plant Parts to represent each part of a plant.
 - B. Distribute Handout 2: “Plant Parts Chart.” Have students fill in the chart as they identify each item.
 - C. If time allows, have each group present the vegetables they chose and the plant parts they are (e.g., lettuce = leaves).
 3. Snack: Have students wash the items from their bags. They can slice them up and eat them raw if time allows. (5 min.)
 4. Have students answer the Reflection Questions in their garden journals. (5 min.)

Student Reflection Questions:

1. What is your favorite plant part to eat? Why?
2. Which plant part is the most important and why?
3. What is your least favorite plant part to eat? Why? Which plant part is the least important and why?

Assessment Questions:

1. See “Plant Parts and Their Functions Quiz”

Standards:

Next Generation Science Standards

Growth, Development, and Reproduction of Organisms

- MS-LS1-4.

Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

Common Core State Standards

Craft and Structure:

- CCSS.ELA-LITERACY.RST.6-8.4

Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.

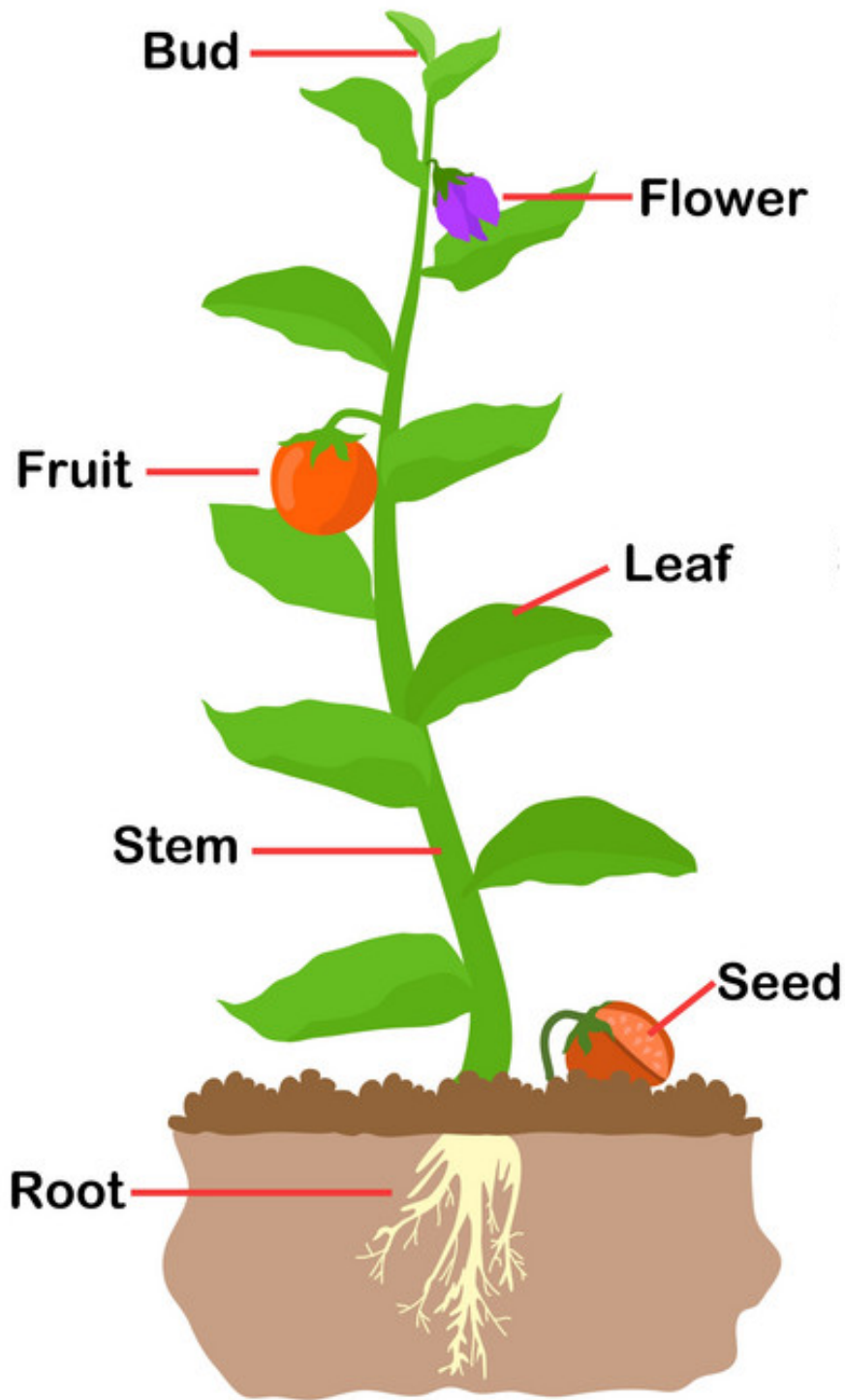
Acknowledgements:

Plant Parts Lesson. Rash Grace, Druid City Garden Project

<https://www.druidcitygardenproject.org>



Plant Parts





Plant Parts Chart

Name: _____

Teacher: _____

Date: _____

Look through your bag of fruits and vegetables with your group and determine which vegetable represents which plant part.

Plant Part:	Function:	How Does the Structure Support Its Function?
Root _____ (vegetable name)	<ul style="list-style-type: none"> - Usually forms below the ground - Takes in water, minerals and nutrients from the soil - Stores nutrients for the plant - Acts as an anchor for the plant 	<i>Example: A root is an anchor because it holds the plant in the ground and transports nutrients up the stem of the plant.</i>
Stem _____ (vegetable name)	<ul style="list-style-type: none"> - Supports the plant - Exposes the leaves to sunlight - Transports food and water to other parts of the plant - Sometimes conducts photosynthesis to produce food in the plant 	
Leaf _____ (vegetable name)	<ul style="list-style-type: none"> - Conducts photosynthesis (takes in carbon dioxide and sunlight and releases oxygen in order to create glucose, or food, for the plant) - Leaves include: stoma, epidermis, cuticles, veins, chlorophyll, and chloroplasts 	
Flower _____ (vegetable name)	<ul style="list-style-type: none"> - Contains organs for sexual reproduction - The site where pollination occurs - Includes petals, the colorful part of the flower that attracts insects 	
Fruit _____ (vegetable name)	<ul style="list-style-type: none"> - The enlarged ovary surrounding the newly developed seed is the true fruit of the plant - The fruit is produced after fertilization - The fruit holds and protects the seed 	
Seed _____ (vegetable name)	<ul style="list-style-type: none"> - Fertilized ovules grow and swell to form seeds after pollination has occurred - A seed contains an embryo (which has all the necessary genetic information to create a new plant), an endosperm (the food required to sustain early growth), and a seed coat (which protects the seed from disease) 	



Quiz: Plant Parts and Their Functions

Name: _____

Teacher: _____

Date: _____

Next to each “function,” write the correct plant part. Find each part in the word bank below.

1. Takes in water and nutrients from the soil: _____.

Why is this important for the overall health of the plant?

2. Takes in sunlight and produces food for the plant: _____.

3. Supports the plant and transports water: _____.

4. Holds and protects the seeds: _____.

5. The part of the plant that matures into a fruit: _____.

6. The part of the plant that makes a new plant: _____.

Word Bank:

Root

Stem

Leaf

Flower

Seed

Fruit