

1ST GRADE

PLANT PARTS WE EAT

Summary: Students learn the 5 parts of a plant: roots, stems, leaves, flowers and seeds. They observe these 5 parts by studying fruits and vegetables that we eat. They will sort these fruits and vegetable parts and discuss their differences using their 5 senses.

Intended Learning Outcomes for 1st Grade:

Objective 1: Framing questions. Conducting investigations. Collecting data. Drawing conclusions.

Objective 2: Developing social interaction skills with peers. Sharing ideas with peers. Connecting ideas with reasons.

Objective 3: Ideas are supported with reasons.

Utah State Core Curriculum Tie:

Standard 3 Objective 2: Physical Science

Sort, classify, and chart objects by observable properties, e.g., size, shape, color, and texture.

Standard 4 Objective 1: Life Science

Analyze the individual similarities and differences within and across larger groups.

Standard 4 Objective 2: Life Science

Make observations about living things and their environment using the five senses.

Preparation time: 40 min

Lesson time: 50 min

Small group size: works best with one adult for every 5 students

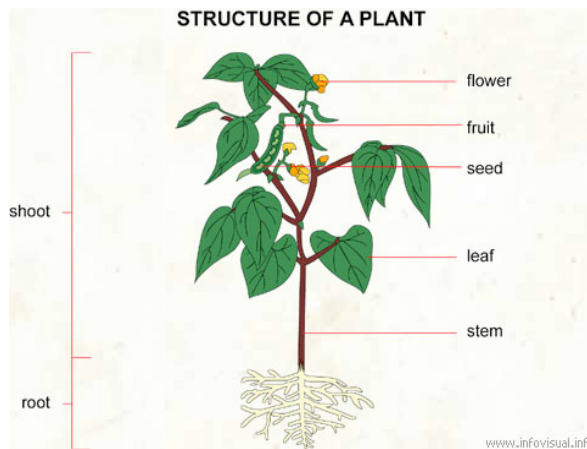
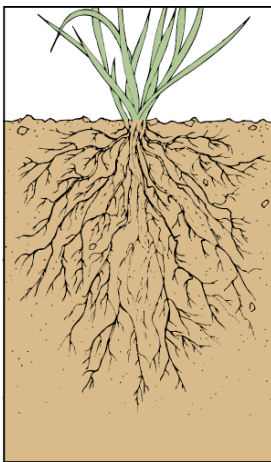
Materials: Check your refrigerator for small amounts of these plants before you purchase too many. The fruits and vegetables listed are possibilities and you do NOT need to get all of them or only these in particular. Be sure that any vegetables or fruit the students eat are washed and placed on clean plates.

1. Roots: carrots (long carrots with leaves to study and a bag of mini carrots to taste), turnip, rutabaga, beet, radish, and sweet potato. Dig up some weeds, grass or other plant in your yard that has the roots intact or if you have a plant growing in water the roots will be observable.
2. Stems: celery, asparagus, broccoli, cauliflower, and rhubarb, have enough celery, broccoli or cauliflower to taste
3. Leaves: lettuce, spinach, cabbage, celery leaves, green onion tops, cilantro, and mustard greens, have enough spinach or lettuce to taste, you can also bring an assortment of leaves and needles from your yard

5. Fruits: apples, cherries, mangos, avocados, oranges, tomatoes, zucchini, pumpkins, cucumber, strawberries, and squash, have enough grapes to taste
6. Seeds: corn, peas, green beans, sunflower seeds, and lima beans
6. bean sprouts or alfalfa sprouts washed to eat, you can grow Mung bean sprouts on your own and the students can watch them progress from seeds to sprouts, information at www.sproutpeople.com/seed/mung.html
7. food coloring – place celery with leaves in water that has at least 5 drops of food coloring added to it, place it in water 1 days before the science lesson

Background information:

Nearly all plants have 5 main parts: roots, stems, leaves, flowers and seeds. Some plants also have fruit. The roots of a plant bring water and nutrients from the soil up to the stem. Roots also keep the plant anchored to the dirt. Stems carry water to the leaves and take sugar from the leaves to the rest of the plant. Stems also support the plant and keep it upright. Leaves create energy for the plant by using the light from the sun to make food for the plant in a process called photosynthesis. The flower is the reproductive structure of a plant. After a flower is pollinated seeds are produced in the flower. Some flowers turn into a fruit that will bare its seeds.



Pre-lab discussion: Ask the students to list the parts of a plant. Draw a plant on the board and label 5 parts: roots, stems, leaves, flower, and seeds inside the flower. Discuss the function of each of the plant parts. Ask the students if they want to eat an entire plant today, roots and all! Show the students the Mung bean sprouts and have them observe the seed and early root, stem and leaf. Eat one yourself and see which students want to try one as well. Tell the students they are going to observe different plant parts that we eat and see how it is they do their job.

Instructional Procedure: This lab is easiest when ran as stations for the students to move through. At each station, ask the students the names of the vegetables and fruit they know. Tell them the names of the plants they don't know.

I. Roots

1. Find the roots of the whole plant you are given. Look at them carefully and study their structure with a hand lens. Discuss how their long and branching structure helps anchor the plant to the soil.
2. Look at a carrot, turnip, rutabaga, beet, radish, and sweet potato. These are roots we eat. Some plants store food in their roots and we eat that stored food. Sort the roots by color and smell. Taste a carrot.

II. Stems

1. Celery is a stem we eat. Take one of the celery stems that were soaked in colored water. Cut a section of the stem and look at the colored tubes that carried the food coloring from the bottom of the stem all the way to the leaves. Discuss how one of the jobs of stems is to transport water and sugar up and down the plant.
2. Look at the stems of asparagus, broccoli, cauliflower, celery, and rhubarb. Discuss how these stems are rigid and how they would do a good job supporting the leaves of the plant. Sort them by vegetables the students can identify and those they can't. Describe the differences in their color and odor. Let students taste some celery.

III. Leaves

1. Leaves can be very different. Look at the different types of needles, vegetable leaves and more common leaves and discuss how they are the same and different. Some differences are color, size, edibility, and shape. Though all the leaves look different their purpose is the same. Look for the veins in the leaves. These veins move food and water throughout the leaf and to the stem.
2. Look at the leaves of lettuce, onions, spinach, celery, artichoke, bok choy, cabbage, mustard greens, kale, leeks and radicchio. Sort the leaves by texture. Describe their color and odor, and taste some spinach.
3. Rub a spinach leaf on a piece of paper. This green color that rubs off is a pigment called chlorophyll. It is chlorophyll that traps light in a leaf and changes it into sugar.

IV. Flowers, Seeds and Fruit

1. The purpose of a flower is to make seeds for the plant. The seeds will then grow into new plants. Look at the broccoli and cauliflower flowers. These are flowers that we eat. Some flowers turn into fruit.
2. Look at the apples, cherries, mangos, avocados, oranges, tomatoes, zucchini, cucumber, strawberries, squash; all are fruit made from flowers. These fruit have the seeds inside to start a new plant. See if you can find the seeds. Discuss how a tasty fruit gets eaten or moved by an animal and the plant's seeds get dispersed. Sort the fruit by size and shape. Describe their color and odor and taste some small tomatoes as well.
3. Look at the seeds we eat. Study corn, peas, green beans, sunflower seeds, and lima beans. The seed of the plant stores food for the new plant to grow. All these seeds that we eat are very nutritious because of their stored food. Taste some sunflower seeds.