

Eating Plants

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Grade Level(s)

K - 2

Estimated Time

2 hours

Purpose

Students will identify the structure and function of six plant parts and classify fruits and vegetables according to which parts of the plants are edible.

Materials

Activity 1:

- Live strawberry plant or *Parts of a Strawberry Plant* poster
- *Parts of a Plant Template 1* copied on colored paper, 1 per student
- *Parts of a Plant Template 2* copied on white paper, 1 per student
- Green paper, 1 sheet per student
- Hole punch
- Brown yarn

Activity 2:

- *Eating the Alphabet* by Lois Ehlert
- *Plant Part Chart*
- *Fruit and Vegetable Cards*
- Copy paper
- Hole punch
- Yarn
- 6 hula hoops
- Plant parts cards

Activity 3:

- Carrots
- Asparagus
- Spinach
- Broccoli
- Strawberries
- Sunflower seeds

Essential Files (maps, charts, pictures, or documents)

- "Parts of a Plant" templates 1 & 2
- Plant Part Chart
- Fruit and Vegetable Cards

Vocabulary

flowers: contain the parts of the plant necessary for reproduction

fruit: the part of the plant that contains seeds

leaves: use energy from sunlight to carry out photosynthesis

roots: act as an anchor, holding the plant in place

seeds: grow into new plants

stems: provide support for leaves, flowers, and fruit

Background Agricultural Connections

Roots act as anchors, holding a plant in place. They take up water and nutrients a plant needs from the soil. Roots can also store extra food for future use. Beets, carrots, radishes, and turnips are examples of edible roots.

Stems provide support for leaves, flowers, and fruit. Water, nutrients, and sugars travel to and from other parts of the plant through the stem. Asparagus is a stem that can be eaten. Potatoes, often mistakenly thought to be roots, are actually enlarged underground stems called tubers.

Leaves use energy from sunlight to carry out photosynthesis and make food for the plant. Edible leaves include arugula, cabbage, lettuce, mint, and spinach. Celery and rhubarb, commonly thought to be stems, are actually the part of a leaf called the leaf stalk or petiole.

Flowers contain the parts of the plant necessary for reproduction and play an important role in pollination. The shapes, colors, and scents of some flowers attract insect and animal pollinators. Following pollination, the fertilization process occurs within the flower. During fertilization, the ovary swells and seeds are produced. The flowers of some plants are edible. Broccoli and cauliflower are flowers that can be eaten.

Fruit is the part of the plant that contains seeds. This botanical definition includes many foods that are typically considered to be vegetables, such as cucumbers and green peppers, as well as more commonly recognized fruits, such as apples, oranges, bananas, and strawberries.

Seeds have three parts—the embryo, the endosperm, and the seed coat. The embryo grows into a new plant, the endosperm provides nutrients for the embryo, and the seed coat is the protective outer covering that encloses the embryo. With proper conditions, seeds will grow into new plants. Corn, wheat, peanuts, black beans, and sunflower seeds are examples of edible seeds.

It is important for students to understand that not all roots, stems, leaves, flowers, fruits, and seeds are edible and that some may even be harmful to humans if eaten. Stress the importance of not eating parts of wild plants unless a trusted adult is confident that the plant parts are safe to eat.

Interest Approach – Engagement

1. Ask a student volunteer to make a sketch of a plant on the board. Encourage just a simple plant with a stem, leaves, roots, and a flower.

2. To begin introducing the lesson and to assess prior knowledge, point to each part of the plant (roots, stem, leaves, flower) and ask the students if they know the name of that portion of the plant. Label each part as you discuss it. Inform your class that they will be learning more about each of these plant parts and which portions of the plant that we eat.

Procedures

Activity 1: Plant Drama

1. Show students the *Parts of a Strawberry Plant* poster or a live strawberry plant. Point out the roots, stems, leaves, flowers, fruit, and seeds of the plant.
2. Using the information found in the *Background Agricultural Connections* as a guide, explain the functions of each plant part.
3. Have the students act out each part of the plant.

Roots: Sit on the ground, and pretend to anchor yourself in place to represent roots holding a plant in place. Make sucking noises to represent the water and nutrients being absorbed from the soil.

Stems: Stand up straight to represent a stem supporting leaves, flowers, and fruit. Move your arms up your body from your feet to your head. This represents water, nutrients, and sugars moving through the stem.

Leaves: Hold hands high in the air to represent leaves receiving energy from the sun to make food for the plant.

Flowers: Make fancy poses to represent a flower attracting pollinators.

Fruit: Pretend to hold a baby to represent the fruit protecting the seeds.

Seeds: Roll into a ball on the ground and then slowly begin to stand up to represent a seed sprouting and growing into a new plant.

4. Provide each student with a *Parts of a Plant Template 1*. Have students cut out the flowers and fold up each petal on the dotted line.
5. Twist green paper into the shape of a stem, and attach it to the back of the flower. Cut out leaf shapes, and attach them to the stem.
6. Use a hole punch to make holes at the bottom of the stem, and tie brown yarn through the holes to represent roots.
7. Using the strawberry plant or poster as a reference, have the students attach each plant part from *Parts of a Plant Template 2* onto the corresponding petal.



Activity 2: Edible Plant Parts

1. Before this activity, make six plant parts cards: ROOT, STEM, LEAF, FLOWER, FRUIT, SEED.
2. Read *Eating the Alphabet* by Lois Ehlert.
3. Identify examples of roots, stems, leaves, flowers, fruit, and seeds from the book. Refer to the *Plant Part Chart* found in the Essential Files at the beginning of this lesson.
4. Have students make fruit and vegetable “beanbags” using the *Fruit and Vegetable Cards*. Place each fruit and vegetable page on top of a piece of blank copy paper. Cut out the two pages together around the dashed lines for each fruit or vegetable.
5. Punch holes around the outside edges of each fruit or vegetable card. Put crumpled paper between the two sheets of cut-out paper and use yarn to sew around the edge of each “beanbag.” Staples can be used as an alternative to sewing with yarn.
6. Place six hula hoops on the floor. Lay plant part cards inside each hula hoop to distinguish them as roots, stems, leaves, flowers, fruit, or seeds.
7. Separate the class into two teams. Each student will determine which edible plant part is shown on their beanbag and then try to throw it into the correct hula hoop.
8. Each player can earn three points for their team. Two points can be earned for correctly identifying the edible part of the plant. An additional point can be earned if their beanbag lands in the correct hula hoop. The team with the most points wins.



Activity 3: Edible Masterpieces

1. Ask families to donate samples of carrots, asparagus, spinach, broccoli, strawberries, and sunflower seeds. Wash all produce.
2. Provide time for students to wash their hands.
3. Instruct the students to use the fruits and vegetables to model the parts of a plant by creating edible plant art. Use carrots to make the roots of the plant, asparagus to make the stem of the plant, and so on.
4. Label each part of the plant.
5. Photograph the edible creations before inviting students to enjoy their artwork as a snack.



Concept Elaboration and Evaluation

After conducting these activities, review and summarize the following key concepts:

- Plants have several parts. Each part has a purpose to keep the plant healthy and growing.
- We eat different parts of plants such as the stem, leaf, flower, fruit, or root.
- Farmers grow many types of plants to provide different kinds of fruits, vegetables, and grains for our diet.

Enriching Activities

▪ Taste Testing Activity:

Before the following activity, wash and cut fruit and vegetable plant part samples and put them on a large tray. Prepare a fruit and vegetable dip. Make 4 columns on the board labeled roots, stems, leaves, and flowers. Ask students what fruits and vegetables they have eaten yesterday and today. As they name fruits and vegetables, list them in the appropriate column. Explain that fruits and vegetables are important to our health because they contain vitamins and minerals that help keep us healthy. They also contain fiber to help clean out our bodies. Eating a variety of vegetables and fruits of different colors is a healthy eating habit. Have the students wash their hands in preparation to try some vegetables and fruits. Show them actual samples of roots – an entire carrot; stems – a celery stalk but remind them it is really a leaf stem; leaves – a lettuce leaf; and flowers – an entire apple or orange. Have them guess what they are and what part of a plant they come from. Give each student a small paper plate and a

napkin. Show the tray of fruits and vegetables and encourage the students to try at least two to three different fruits and vegetables. Offer ranch dressing and cream cheese mixed with brown sugar to use as dips. The dips may encourage them to try new vegetables and fruits. If choosing is difficult for your students, prepare sample plates for them. Optional: Challenge students to try one root, one stem, one leaf, and one flower. Discuss and describe the differences in flavor, texture, and color between the root, stem, leaf, and flower.

▪ **Plant Parts Role-Play:**

- Guide students in a role-play activity where they pretend to be a plant. Start by pretending that it is spring and you are seeds that have been planted in the ground. Curl up on the floor or “ground” like a seed in our garden. You are underground. The soil or ground is all around you. Spring rains come down and soften the seed coat so that your roots start to grow into the soil.
- Ask students, “What part of your body can you use to become roots?”
- *Feet and legs are the roots growing out of the seed and pushing down into the soil. Roots are the first plant part to grow out of seeds. Wiggle your toes as your roots start growing out of the seed.*
- Ask students, “What part of your body is the stem?”
- *Your body is the stem. Wiggle your bottom, shoulders, and elbows. Pop up your head and start growing tall. Stand up tall and straight so that your stem is growing above the ground. (Above ground is the height of desks or tables.)*
- Ask students, “What parts of your body could be the leaves and branches?”
- *Your arms could be branches and your hands and fingers could be leaves. Put your arms out away from your body and wiggle your hands and fingers as if they were leaves fluttering in the breeze. Reach toward the sky to catch the sun’s rays.*
- *Stand up straight with your head held high and a big smile on your face because your head is a beautiful flower on top of a sturdy stem. Move it back and forth like it is enjoying the sunshine and the breeze.*

Suggested Companion Resources

- [Eating the Alphabet](#) (Book)
- [Grow it Again](#) (Book)
- [How Flowers Grow](#) (Book)
- [Tops & Bottoms](#) (Book)
- [What is a Fruit? What is a Vegetable?](#) (Poster, Map, Infographic)
- [Jr. Sprout - Funky Foods](#) (Booklets & Readers)
- [Jr. Sprout - Healthy Eating](#) (Booklets & Readers)

Sources/Credits

Enriching Activities (Plant Parts Role-Play and Taste Testing Activity) contributed by Minnesota Agriculture in the Classroom.

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Common Core Connections

Speaking and Listening: Anchor Standards

- CCSS.ELA-LITERACY.CCRA.SL.2

Language: Anchor Standards

- CCSS.ELA-LITERACY.CCRA.L.6