TEKS 1.10 Organisms and environments. The student knows that organisms resemble their parents, and have structures and processes that help them survive within their environments. The student is expected to:
B) identify and compare the parts of plants.

Background Knowledge

Plants are living things that can make their own food. Like animals, plants have parts that perform different functions that help plants to survive in their environment. These parts are the roots, stem, leaves, flowers, and seeds. Plants live in different environments and vary greatly in shape and size.

Essential Questions

How do we know that plants are living things?
(Like animals, plants must take in water, air and must have food for energy. They grow and make seeds to produce other plants.)

What are the parts of a plant?
(Roots, stem, leaves, flowers, and seeds)

What is the job of each part of the plant: the roots, the stem, the leaves, the flowers, and the seeds?
(The roots take in water and nutrients from the soil. The stem moves the water and nutrients up to all parts of the plant. The leaves collect sunlight energy and take in air, so the plant can make its own food. The flowers make seeds from which new plants grow.)

What would happen to a plant if it lost one or more of its parts?
(It would probably die or it might not be able to produce seeds.)

How are young plants like their parents?
(Young plants have the same plant parts and look like the parent plants. This helps make sure they are able to do all the things they need to do to survive.)

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Where Does Your Snack Come From?

A class and small group activity.

Safety

Be aware of student food allergies and do not use peanuts.

Objective:

To identify the parts of a plant we eat.

Materials:

Assorted fruits and vegetables, such as apples, oranges, tomatoes, celery, cabbage, lettuce, corn, carrots, and broccoli, (some with leaves, if possible), and seeds such as sunflower and pumpkin seeds (two different plant parts per group of students).

Clean the fruits and vegetables thoroughly, and cut to show seeds in fruits that contain seeds.

Knife (For teacher's use only)

Paper plates or napkins

Table on chart paper to record student responses

How to Conduct:

Tell the students today they will have a healthy snack. But before eating the snack they will do a science observation. Go over the safety rules. Students will wait for the directions before eating anything.

Show the fruits and vegetables to the class and ask them to identify them one by one, then ask:
Which ones have you eaten before? Where do they come from?

Give two fruits or vegetables to each group of students.
They will work as a group to identify which part of the plant their snack comes from.
As a class, record each group's responses.

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Group	Fruit or Vegetable	Part of the plant that you eat

Allow students to eat their snacks and provide additional ones for each group to try.

Journal reflection: Which part of a plant do you like to eat most and why?

Extended Activity:

Using the school cafeteria menu, ask students which parts of the plant they ate during lunchtime.

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Brad And Benny: The Bean Plants

A whole class activity

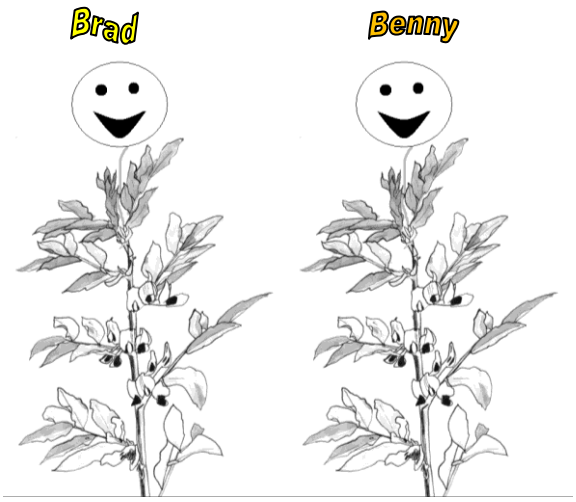
<u>Advanced preparation</u>: Begin growing two bean plants in soil three weeks before this lesson.

<u>Objective:</u>

After making observations and recording information of the two plants for two weeks, the students will understand the function of roots.

Materials:

- Two bean plants; one labeled Brad and the other one labeled Benny
- One measurement cup, graduated cylinder or beaker
- One mist bottle
- Science journals
- Timers



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How to Conduct:

1. Introduce Brad and Benny the Bean Plants to the class; have students name the parts of the plants and their function by asking:

- What part of the plant is this one? (Pointing at the leaves)
  What is the function of leaves?

2. Repeat questions for the stem and roots, then ask:

- How do you know that Brad and Benny are living organisms?
  (Because they need water, light, and air in order to survive.)

- How can we take care of Brad and Benny?
  (By watering them twice a week, and placing them in a well-illuminated place.)

- Where do I need to add water to the plant? Why?
  (In the soil.)

- What do you think will happen if we only water the leaves and not the soil?
  (Answers will vary.)

Students will record their predictions in their science journals.

3. Place the plants in a well-illuminated place in the classroom.

4. Use the measuring cup to water the soil for the plant called Brad; place the same amount of water into the mist bottle and use this bottle to water only the leaves of the plant called Benny (try to minimize water dripping onto the soil). Use the timer to measure the amount of time to mist the plant called Benny so the plant gets misted the same amount each day.

5. Water the plants once a week, as above.
Have students measure and record Brad and Benny's general appearance, such as color and relative height, twice a week for two to three weeks, then conduct a class discussion.

- How do Brad and Benny look?
- Why do you think they look different?
- What is the job of the roots?
- What can we do to help Benny grow better?

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The Class Tree

Objective:

The students will learn that leaves vary greatly in shape and size, but still have the same function.

Materials:

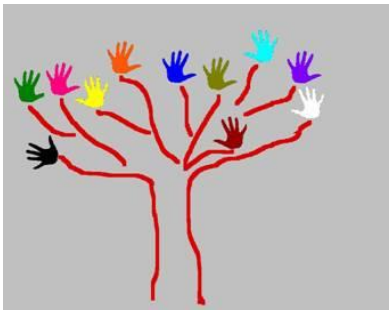
1. Construction paper in different colors
2. Crayons, markers or sketch pens
3. Tempera paint (Brown)
4. Scissors
5. Glue
6. Old newspaper for the tree trunk and the branches
7. Pushpins
8. Real leaves

How to Conduct:

1. Twist and shape newspaper to make it look like a tree trunk.
2. Then, make the branches and staple the trunk and branches to a bulletin board. Use the tempera paint to paint them if desired.
3. Take students around the school for a nature walk; have them collect different leaves. Go over safety procedures such as asking permission before touching a plant, washing hands afterward, staying with the group, etc.

Stick or pin each of the leaves onto the branches of the tree.

Observe, compare and contrast the shapes, sizes, and colors of the leaves.
Ask: Where did all the leaves come from?
What job do the leaves do for the plants?



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