

GRADE 2 ~ LIFE SCIENCES

TOPIC: Cycles of Living Things

LESSON: #1 Plant Parts

CONCEPT/STANDARD:

Plants and animals have predictable life cycles.

SUB CONCEPT:

2f Students know flowers and fruits are associated with reproduction in plants.

STATEMENT OF LESSON OBJECTIVE:

Students will become familiar with the basic needs of plants and gain an understanding of which plant part fulfills each of these requirements.

VOCABULARY

Root: the structure of the plant that usually grows downward into the soil, holds the plant in place, absorbs water and minerals, and stores food.

Tuber: a swollen, usually underground, stem

Fruit: the seed-bearing part of a plant

Flower: the reproductive structure of a seed-bearing plant

Bud: small plant structure containing undeveloped leaves, flowers, etc.

Stem: the structure of the plant that provides support for the leaves and fruit and contains tubes that transport water and nutrients

Seeds: a fertilized plant ovule containing an embryo capable of developing a new plant

Leaf: usually green, flattened plant structure attached to the stem and functioning as a principal organ of photosynthesis.

MATERIALS

Assortment of vegetables & fruits for class:

carrots, radishes, potatoes,
lettuce, spinach, celery,
peanuts, cucumbers

TIME FRAME:

approx. 60 Minutes

TEACHER PREPARATION:

1. Write a letter to families asking them to send fruits and vegetables to class
2. Bring fruits and vegetables for students who have not brought one.
3. Make sure your samples include examples of all eatable plant parts.

BACKGROUND INFORMATION:

All living things have needs, which must be met to sustain them and allow them to reproduce successfully. Plants have the following basic needs:

- collect water and nutrients—*roots*

- transport water and food material—*stem*
- support themselves--*stem*
- absorb sun for photosynthesis--*leaves*
- reproduction--*flowers*
- increase survival of baby plant--*seed*
- disperse young--*fruit*

The fruit achieves the dispersal of plants. The fruit is bright fleshy and attractive and, therefore, gets picked up by animals and dispersed elsewhere. Since the seeds are contained in the fruit they also get dispersed which give them a better chance of surviving. The seed holds the baby plant (*embryo*) as well as stored food to give the baby plant a better chance of surviving.

LESSON FOCUS:

- **What are the different parts of a plant in terms of structure and function?**
- **How do they allow the plant to meet its basic needs?**
- **Which plant parts do we eat when we select fruits and vegetables at the market?**

PROCEDURE:

1. Place all fruits and vegetables together and gather class around them. Ask students: **How they are alike? Different?** (shape, color, texture)
2. Have a student sort them and ask the class to guess the rule (attribute) for how they are sorted.
3. Discuss where they would find the fruit or vegetable in the whole plant and what function that plant part would have in supporting the needs of the plant. (See background information.)
4. Hold up each plant part and discuss the function of the plant.
5. Ask students which vegetable or fruit has seeds and then cut them open to see if their predictions were right.
6. Cut open all of the fruits and vegetables to observe how the inside helps us understand the function of the plant part in supporting the whole plant.
 - a. For example, look at the celery. You may want to put celery in food coloring and water to watch it fulfill the role of transporting water or minerals.
 - b. When a potato is cut up they see that it is just fleshy matter. The potato is a tuber, which is merely an enlarged stem whose role is to store energy.
 - c. When a seed is cut open, they can find the embryo and see the stored food for the embryo surrounding the baby plant. You may wish to use a peanut for this part since a lima bean will be used in future lessons.
 - d. The flower has the ability to attract pollinators.
7. *Optional:* Allow students to taste each of the plants or fruits or make a salad or stew.
8. Have student complete the *Plant Parts* worksheet.

CLOSURE/ASSESSMENT:

Make a salad or stew and enjoy the plant parts.

ATTACHMENT:

“Plant Parts” Worksheet & Answer Key

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(17 experiments) Students dissect flowers and two seeds to learn about plant reproduction. They observe life cycles of fruit flies and tadpoles using magnifiers. Students compare and graph plant growth, learn about plant parts, graph seeds in fruits, record population changes, and compare plant and animal needs. KIT: 20 magnifiers, 6 aquariums, coupons for frog eggs and 32 vials of fruit flies, seeds, spray bottles, food for tadpoles, and much more!

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Grade: 2nd