

Plant Dissection Lesson

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3-LS1-1 From molecules to Organisms: Structures and Processes

Develop models to describe that organisms have unique and diverse life cycles, but all have in common birth, growth, reproduction, and death.

I can make a model of a plant and identify the important functions of its parts.

Objectives

Student understandings

1. Plants parts have certain functions that ensure it will grow.
2. Plants have many benefits for our world.
3. There is a large diversity of plants in our world, but their parts share the same functions.

Materials

1. Variety of plant specimens (skunk cabbage, lily, daffodil)
2. 8 ½ by 11 white paper / one for each student
3. Plant scavenger cards and question sheets for each student
https://www.superteacherworksheets.com/science/plant-scav-hunt_WMTFM.pdf?up=1522304325
4. Large poster paper or white board
5. White board markers or sharpies.
6. Scissors, painter's tape

Focus facts

- a. Plants parts have specific functions. Roots to soak up water and minerals. They also store food for the plant. Stems which support the plant and have tubes for carrying food, minerals and water through the plant. Leaves make food for the plant. They also take in carbon dioxide and release oxygen. Flowers make seeds for the plant.
- b. Flowers have parts with specific functions that enable them to make seeds. The male parts (stamen) are filament which holds up the anther which produces pollen. The female parts (pistil) are stigma which catches pollen, style connects the stigma to the ovary. Petals attract insets to the flower for pollination. Sepals which protect and support the petals. Ovule contains the embryo sac.
- c. Trees resin which has been fossilized is known as amber, it sometimes contains plant material or small animals that were trapped inside.
- d. Some plants are carnivores, gaining nutrients by eating various small insects and spiders. A well-known example of a carnivorous plant is the Venus Flytrap and Skunk Cabbage.
- e. Bamboo can be a fast-growing plant; some types can grow almost a meter (3.28 feet) in just one day!
- f. While using energy from sunlight, plants turn carbon dioxide into food in a process called photosynthesis.
- g. Plants take water from the soil through their veins, which are called xylem. The water goes to the leaves. The leaves take carbon dioxide from the air into the plant. The carbon dioxide mixes with the water.

Energy from the sun helps this process along and turns the combination into a sugar called glucose. The glucose is plant food. It gives the plants energy to grow.

- h. In the leaves of a plant is a substance called chlorophyll. Chlorophyll makes leaves green. It also traps the energy from the sun, so the plant can use it.
- i. When plants take carbon dioxide from the air, they release oxygen. Animals use this oxygen to grow. We release carbon dioxide, which the plants use.
- j. Plants are the only organism with a wall around their cell (cell wall) which gives the plant structure. In the cell are chloroplast which contains chlorophyll which take light and make food for the plant.
- k. Around 2000 different types of plants are used by humans to make food.
- l. Onions might taste good, but they can be painful to chop. A gas is released when you cut onions that irritates your eyes, the tears you produce while this happens are your body's way of washing it from your eyes.
- m. In the agricultural industry, to ensure crops of food grow well water is often added to soil in the form of irrigation.
- n. Plant matter found at the bottom of areas with water such as swamps can eventually turn into coal due to a process called metamorphosis (changing form).
- o. There are over 300,000 identified plant species and the list is growing. 250,00 have flowers.
- p. Poison ivy produces a skin irritant called urushiol. Touching poison ivy will cause an allergic reaction, usually in the form of an itchy rash on the skin.
- q. Fertilizers are chemicals added to plants to help them grow. Important elements in fertilizers include nitrogen, phosphorus and potassium. Manure (animal waste) is also used as a fertilizer.
- r. Plants take water from the soil through their veins, which are called xylem. The water goes to the leaves. The leaves take carbon dioxide from the air into the plant. The carbon dioxide mixes with the water. Energy from the sun helps this process along and turns the combination into a sugar called glucose. The glucose is plant food. It gives the plants energy to grow.
- s. In the leaves of a plant is a substance called chlorophyll. Chlorophyll makes leaves green. It also traps the energy from the sun, so the plant can use it.
- t. When plants take carbon dioxide from the air, they release oxygen. Animals use this oxygen to grow. We release carbon dioxide, which the plants use.
- u. Plants also need minerals from the soil to grow. Nitrogen helps them grow and make leaves. Phosphorus helps grow strong roots. Potassium helps the plant make fruit and it keeps them healthy.
- v. Plants need large amounts of nitrogen, phosphorus and potassium. The soil doesn't always have enough of these nutrients. Gardeners use fertilizer to give plants more nutrients. Fertilizers are sort of like vitamins for plants. Some fertilizers are made from chemicals. Others are made from natural things like cow manure. Poop has lots of nutrients for plants.

Activity

1. Using a white board or large sheet of paper share facts with students using models and their questions to guide the discussion. It will help you to assess what they know and give them new information. Encourage them to take notes during the discussion.
2. Provide plants with flowers for small groups of students. Then give them an 8 x 11 piece of paper. They fold their paper hot dog style then into fourths. Sketch their plant using the full length of the paper. Each fourth should have a plant part flower, stem, leaves and roots.
3. Open their paper and cut along the folds up to the first fold.

4. Write the information about the functions of flowers, stem, leaves and roots from our discussion on the corresponding flap.
5. Scavenger Hunt Pass out question sheets/ one per students. Explain their job is to search for the answers by looking for the corresponding number fact card.

Debriefing 4 square conclusion

Divide a page in their journal into 4 squares. In the first square they write their new learning, the next two squares they choose someone and record their new learnings. In the last square they list further ideas they would like to explore.

Websites:

https://www.superteacherworksheets.com/science/plant-scav-hunt_WMTFM.pdf?up=1522304325

<http://easyscienceforkids.com/plants/>

<http://factsforkids.net/plant-facts-for-kids/>