Virtual Academy
Plants and their Parts

Goal: Students will learn the needs of plants, their parts and be introduced to the life cycle of a plant.

Standards and Correlations:

- *Cognition and General Knowledge Domains*
    - Science Inquiry and Application – Inquiry - C39 to C42, C44 to C46
    - Earth and Space Science - Explorations of the Natural World - C48 to C49
    - Life Science- Explorations of Living Things - C52 to C55
- *NAEYC Accreditation Criteria* (2A.2, 2B.4, 2C.1, 2D.1, 2D.2, 2E.2, 2E.3, 2E.6, 2E.15, 2E.17, 2F.5, 2F.7, 2F.8, 2F.9, 2F.13, 2F.16, 2G.3, 2G.4, 2G.9, 2G.10, 2G.11, 2H.1, 2L.2, 2L.3, 2L.9, 3B.1, 3D.3, 3D.7, 3F.1, 3G.3, 3G.5, 3G.6, 3G.8, 3B.1)

Overview: Plants are an important part of our world. They provide us with many essential things like food, oxygen, wood, and shade. Plants need water, soil, sunlight, and air to grow. Each plant needs a certain amount of fresh water and the right nutrients in the soil to grow. Plants make oxygen during photosynthesis by using the carbon dioxide in the air that is exhaled by animals and sunlight absorbed through their leaves. This oxygen is then released into the air through tiny holes in the plant cells known as stomata. This is how animals get the oxygen they need to live. So, plants and animals need each other to survive.

Similar to animals, each part of a plant plays a different role in its ability to live. The roots provide support to the rest of the plant by holding it in the ground. The roots also absorb water and nutrients from the soil to feed the plant. The stem, whether flexible like a flower stem or stiff like a tree trunk, is like our bones and provides structure and support for the growth of the plant. The leaves absorb sunlight and carbon dioxide and give off oxygen and water, as well as create sugar that the plant uses for energy to grow and create seeds. The flower of a plants is responsible for reproduction by creating seeds. Many flowers are brightly colored and/or have a scent to attract insects for pollination so the plant can produce seeds. All flowering plants produce fruit which contain the seeds. Fruits often turn bright colors to let animals know that they are ripe for eating, which then helps to spread the seeds further away from the host plant.

Vocabulary:

- **Plant –** a living organism that produces its own food through photosynthesis and includes grasses, trees, flowers, bushes, ferns, mosses, and more
- **Roots –** the part of the plant which attaches it to the ground or to a support that allows it to soak up water and nutrients from the ground

- **Stem –** the main body or stalk of a plant that rises above the ground and supports the plant
- **Leaf –** the green part of a plant that grows from the stem that makes food for the plant
- **Flower –** the reproductive part of the plant that creates seeds and fruit
- **Fruit –** the fleshy product of a plant that contains seeds and can be eaten
- **Photosynthesis -** the process by which green plants use sunlight to make food for the plant from carbon dioxide and water which creates energy and oxygen

Materials: video lesson and lending kit (plant pictures, seed examples, artificial plant showing roots, life cycle of a bean plant plastic models, giant magnetic plant life cycle, DIY plastic flower garden build kit, plastic fruits and vegetables bag, *"From Seed to Plant"* book, leaf stencils, leaf and flower rubbing plates)

Warm Up: Have the students sit in a circle. Ask the students what are examples of plants? Write down their answers on a board/flip chart. If they are having a hard time coming up with examples, mention that they are often green. What are things in nature that are green? Go back through the list and see if everyone agrees that everything on the list is a plant. If something is not, talk about why it does not fit into the group called plants. Go through the set of pictures that show different kinds of plants.

Main Activities: Show students the recorded lesson. After the lesson, go over the points below to reinforce information in the video.

1. Ask what does a plant need to live? Water (picture of plant being watered), soil (plant growing in dirt), sunlight, and air.
2. Let us go through the parts of the plant. Using the artificial plant with the roots, have the students name the parts of the plant as you point to it. You can also compare their bodies to the plant parts. Their feet are their roots – they keep them from falling over when they stand and support them. Their legs and trunk are the stems. Their arms are the branches, and their fingers are the leaves. Their head can be the flower.
3. Read the story *"From Seed to Plant"* by Gail Gibbons. Talk about how the seed changes as it grows. See if the students can act out the changes with their bodies.

Wrap Up: Review plant needs and parts. Have the students look around the classroom for things that came from plants (paper, pencils, tables, chairs, snacks, etc.).

Extended Activities:

- Using the plastic bean life cycle, review the progression from seed to plant. Bring out the magnetic life cycle set and have the class work together to put the magnets in the proper order from seed to plant and explain what happens at each stage.
- Using the build your own flower kit, let the students put together their own flower garden.

- Use the tote bag with the fruits and vegetables. Ask the students if they ever eat plants. See if they can name foods they eat that are plants. Ask the students if they know what part of the plant that food comes from. Go through the items in the tote bag and see if the students can figure out which part of the plant each piece is. For example, when they eat lettuce, they are eating the leaves; when they eat asparagus, they are eating the stem and flowering part; when they eat corn, they are eating the seeds. Ask them when they eat fruits and vegetables, do they eat the seeds too? See if they can tell/show you where the seeds are. For example, where are the seeds in a banana? (the little brown lines they might see when they eat them).
- Using the leaf stencils and the leaf and flower rubbing plates, let the students make their own nature art.
- Sing the song "The Roots on the Trees" to bring it all back together:

"The Roots on the Trees" (to the tune of "The Wheels on the Bus")

The roots on the trees go slurp, slurp, slurp, slurp, slurp, slurp, slurp, slurp, slurp.
The roots on the trees go slurp, slurp, slurp, all around the world.
The trunks of the trees grow strong and straight.
The trunks of the trees grow strong and straight, all around the world.
The bark on the trees protects the trees.
The bark on the trees protects the trees, all around the world.
The branches on the trees reach for the sky.
The branches on the trees reach for the sky, all around the world.
The leaves on the trees make food, food, food.
The leaves on the trees make food, food, food, all around the world.
The seeds on the trees go twirl and plunk.
The seeds on the trees go twirl and plunk, all around the world.
The wind blows the trees back and forth.
The wind blows the trees back and forth, all around the world.