

What is a Plant?

All plants have the same basic structure; roots, stems, leaves, flowers, fruits, and seeds. Plants depend on these basic structures to get light, warmth, food, nutrients or vitamins, water, and air. Roots help plants stabilize themselves, while pulling water, oxide, and nutrients from the soil. Stems house the vascular system that distributes the resources obtained by the roots. Leaves use the sun, water, and carbon dioxide to create sugar or plant food. They also release excess water and oxygen. Flowers contain all of the organs necessary to make baby plants, and they produce fruit containing the seeds that house the baby plants. Once the seed hits the ground, the cycle of life begins again!

Pre-Visit Activities

Show students assorted pictures of plants and parts of plants.

Have students identify the part of the plant they see. Students should understand that even though some plants look different from one another, they all have the same basic parts.

Extension: Cut open 5 different fruits so that the seed(s) is exposed. Have students compare and contrast the seeds. Ask students to explain how the seeds got inside the fruit, what the seed is for, and why some fruits may have larger seeds than other, and more or less seeds than others.

At the Conservatory

Palm House
Ficus
Bamboo

Fern Room
Maidenhair
Tree Fern

Sugar From the Sun
Mangrove Trees
Taro
Calamondin Orange

Children's Garden
Bird of Paradise
Powder Puff Plant

Desert House
Golden Barrel Cactus
Jade

Aroid House
Peace Lily
Giant Sea Grape

Horticulture Hall
Banana Plant
Ginger

Post-Visit Activities

Plant seeds and watch them grow over time. Choose two different types of seeds that grow well indoors. Students can identify the plant parts as they begin to develop.

Bring in several varieties of fruit, vegetables, and fresh herbs. Challenge students to identify what part of the plant they come from. Have students write myths that explain how people began to eat that part of the plant.

NGSS:

K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive.

1-LS1-1 Use materials to design a solution to a human problem by mimicking how plants and/ or animals use their external parts to help them survive, grow, and meet their needs.

1-LS1-2 Read text and use media to help determine patterns in behavior of parents and offspring that help offspring survive.

2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow.

4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

5-LS1-1 Support the argument that plants get the materials they need for growth chiefly from air and water.

Additional Resources:

Plant basics: https://www.youtube.com/watch?v=qI6OL7_qFgU

Plant based lesson plans K-5: <http://classroom.hiddenvilla.org/curriculum/for-english-language-learners/1st-grade/what-plants-need-to-grow>

Function of plant parts: <http://www.dkfindout.com/us/animals-and-nature/plants/parts-plant/>

Importance of plants: <http://www.bgci.org/plantconservationday/whyplantsimportant/>

What is a Plant?

What are the basic parts of a plant?

What does a plant need to survive?

Draw each plant part and describe it's function.

Roots	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
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Stems	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
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Leaves	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
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Flowers	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
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Fruit	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
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Seeds	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
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What is a Plant?

Vocabulary

Root—the part of the plant that typically grows underground and absorb water and nutrients from the soil; also helps the plant stabilize itself and support its weight.

Stem—the part of the plant that extends from the roots and typically grows above ground. Transports water, nutrients, and sugars (created through photosynthesis), from one part of the plant to another

Leaf—the part of the plant that grows from the stem, helps the plant release excess water and oxygen; creates sugar using photosynthesis

Flower—the colorful part of a plant that holds the reproductive or seed-bearing organs of the plant.

Fruit—a part of the plant that can house a seed.

Seed—the part of the plant that contains a baby plant and all of the nutrients necessary to begin the growth cycle.

Photosynthesis—the process that leaves undergo to create sugars from carbon dioxide, sunlight, and water.

Talking Points

- ◇ Plants are the oldest living organisms on the planet. Plants are the source of food and nutrients, medicines, beverages, essential oils, and many products that we use to enhance our personal comforts. The part of the plant that we use varies from plant to plant and depends on our purpose.
- ◇ Most plants, like most people, have the same basic structure. Typically plants are made up of roots, stems, leaves, flowers, fruit, and seeds.
- ◇ There are two different types of root systems, taproot (dicots like carrots) or fibrous (monocots like Palms).
- ◇ Leaves are essential to the survival of green plants, as they are responsible for photosynthesis, and for absorbing and releasing air and water above ground. Plants have either compound leaf structures, where multiple leaves extend from one stem, or simple leaf structures, where one leaf extends from a stem.
- ◇ Photosynthesis is the process green plants use to make glucose necessary to feed and nourish the plant. This process is also the way plants absorb carbon dioxide and release oxygen.
- ◇ When the flower is ready to reproduce, a seed is created inside the ovary of the flower. Ovaries then produce flesh around the seed to protect it. Some flowers also create a hard shell around the flesh. The flower does not do anything special to produce fruit. What we call the fruit is actually the fleshy part of the fertilized, ripened, swollen ovary of the flower. This flesh surrounds and protects the seed.
- ◇ Seeds are the result of plant reproduction. Seeds are baby plant embryos and contain everything the plant needs to begin its life cycle. Like plants, seeds vary in size, shape, hardness, and basic preference for sunlight and depth. All seeds are NOT created equal!