What Is A Plant and What Is Not A Plant?

OVERVIEW

What is a plant? In this exploration, children will collect different kinds of plants or plant parts, examine them, and discover that all plants have common parts and needs. Almost all plants have six parts: roots, stems, leaves, flowers, fruit or cones, and seeds. They all need sunlight, water, nutrients, and carbon dioxide. They use photosynthesis to create their own food. But plants can't walk or swim to a new place to live. How do plants travel? How do they protect themselves, and how do they make their food?

Plants are essential for the health of the planet and for all living things. Plants release oxygen that humans and other animals need to breathe. Plants provide food and habitat for humans and animals. Plants help clean the air we breathe and create nutritious soil when they decompose.

What else is all around us that is not a plant? Let's hunt for things in our landscape that are not plants: rocks, toys, gardening tools, paper, plastic, etc. and discover what is different about plants and non-plant objects.

OBJECTIVES

After this experience, children will be able to:

- identify some different types of plants in the garden and identify what they have in common. • recognize some things that are not plants and describe why they are not plants. • describe the parts of plants and the plant life cycle.
- explain how plants make their own food, protect themselves and move seeds to new locations.

SPRING ACTIVITIES

ESSENTIAL QUESTIONS

- What is a plant? What is not a plant?
- What do all plants have in common?
- What are the parts of plants?
- What do all plants need to grow?
- How does a plant make the food it needs to grow?
- How can plants move to a new place to grow?
- How do plants protect themselves from being eaten?
- How do plants help the earth, humans and other animals?

BACKGROUND

Although most young children know the word “plant” as something that grows in the ground, this exploration will help students understand why a plant is a plant, and how plants are different from other objects they observe outdoors, including animals, fungi, rocks, toys, sandboxes, etc. Plants are essential to the survival of humans and other animals. They are the foundation of the food chain, produce oxygen in our air, and provide habitats for animals.

What do all plants have in common?

Plants are living organisms that cover most of the earth, even the oceans. Some familiar types of plants are grasses, trees, vines, vegetables, cactuses, ferns and mosses. All plants need air, water, nutrients and sunlight. Plants do not have skeletons like animals have bones. Instead, they have rigid cell walls. Most plants have chloroplasts inside their cells which contain green chlorophyll. The chlorophyll absorbs sunlight and combines it with carbon dioxide in the air to make sugar in a process called photosynthesis. Plants use this sugar for food and release oxygen into the air.

Plants cannot move on their own, and rely on insects, wind, and other animals to help them move seeds and pollen to new locations.

Because plants are food for other animals, plants have learned to protect themselves. Some have spines or thorns, or poisonous chemicals to keep them from being eaten.

MATERIALS

- Companion books: *From Seed to Plant* by Gail Gibbons, *Plant Life Cycles* by Julie Lundgren and others listed in *Resources* below.
- Pictures of plant parts
- Pictures of plant life cycle
- Collection baskets or containers
- Trowels for digging up small plants by the roots
- Magnifying glasses (optional)

PREPARATION

Read some of the books related to plant parts and plant life cycles before going out to observe and collect plants. Have a simple illustration available to show plant parts and plant life cycle (or make one with the children before or after this activity).

PROCEDURE: FACILITATOR'S ROLE

- Read books to the children and lead a discussion based on the essential questions above.
- Describe what the outdoor activity will consist of: collect three to five examples of a plant or a plant part. (Depending on the time of year, these might include an acorn cap, a pinecone, a flower, a clump of grass, a tree leaf, or a whole growing plant dug up by the roots.)
- Encourage children to dig up plants that are wild weeds, which can demonstrate the root, stem, leaves, and flowers as one whole system. An alternative for acquiring whole plants is to thin young plants in the vegetable garden. Maybe there are some kale or radishes or beans that need more space to grow and taking a few will actually help the garden grow better.
- Guide the children to think about what they could collect that is not a plant: is a dead stick a plant? Is a rock a plant? What about our sandbox toys? Have each child choose one or two items that they think are NOT a plant.
- Gather in a group meeting space and share what the children have collected. With each sharing, ask questions to focus attention on what all plants have in common, and name the different parts of

the plants. Ask why the non-plant items are not the same as plants and whether they are alive.

- To get children thinking about how plants help us and the whole planet, ask the children what they think would happen if there were no plants on earth.
- Show the children pictures of plant parts and the plant life cycle and finish the session by talking about how plants make their own food, protect themselves and move to new locations. If you have examples of thorny plants or sensitive leaves that close on touch, or plants with seed pods on them, take time to examine these in their habitats.

PROCEDURE: CHILD'S ROLE

- Listen to the books; ask questions and share comments.
- Listen to instructions on what they will look for and collect.
- Collect three to five examples of plants and one or two examples of non-plants.
- Share and discuss what was collected, making hypotheses about what all plants have in common, and why plants are so important to the health of the earth, humans and all animals.

ADAPTATIONS FOR AGE AND ABILITY

Make collages or drawings of the parts of a plant. Label the parts with the corresponding words. Older children could each make their own illustrated plant life cycle poster to help them internalize the process.

Explore in more detail the ways that plants help the earth: animal habitats, food chain, cleaning air and water, etc.

FOLLOW UP

Follow up with some of the related activities in this book: *Plant Plumbing, Strawberries: How a Flower Becomes a Fruit, Seed Sprouting* and *Beneficial Flowers/Pollinators*. These activities reiterate the life cycle of plants and the parts of plants. Children will soon become familiar with the names of plant parts and the plant life cycle: sprouting, growing first leaves, then a stem, and eventually a flower, fruit and seeds within the fruit.

RESOURCES

Web links to printable *Parts of a Plant* and *What Do Plants Need* worksheets and coloring sheets are in the *Resources* section at the end of this book.

Books

From Seed to Pumpkin by Wendy Pfeffer

From Seed to Plant by Gail Gibbons

Good Job, Oliver! by Laurel Molek

How Do Apples Grow? by Betsy Maestro

Plant Life Cycles by Julie Lundgren

Plant Plumbing: A Book About Roots and Stems by Susan Blackaby

Stems by Vijaya Bodach

What Do Roots Do? by Kathleen Kudlinski

Online Graphic Aids

Parts of a Flower (or all plants)

Plant part coloring and labelling worksheet (free download)

Plant Life Cycle Poster

Videos

What is A Plant? (for ages 4+. Simply explained, with quite a bit of detail, including carnivorous plants and other adaptations plants have made to protect and feed themselves. Great photographs.)

From a Seed to a Flower (for ages 2-5; very basic video, animated with playdough)

