

Observing Plant Growth and Development



Grade Levels

Pre K-2

Overview

The following activity is an introductory lesson in the basics of observation skills for young children. Students will germinate seeds and observe the growth of their plants. They will learn basic plant anatomy, and about what plants need in order to grow and survive.

Background

Phenology is the study of the timing of life cycle events, done mostly through personal observations. Plants need sunlight, water, air, and soil to grow. As plants grow and develop, we can observe the changes they make from seed to flower to fruit. In order to make fruits and seeds, many plants need the help of pollinators.

Real-world Connection

Observation skills are necessary for scientific study and are included throughout elementary standards. In addition, observation skills are necessary for all aspects of learning academically, socially, and emotionally. Many of the foods that we eat are thanks to plants and pollinators.

Citizen Science Connection

Nature's Notebook is not critical to completing the activity, but can be used as a supplement to this activity.

Estimated Time

20-30 mins per day for 5 days

Learning Objectives

Participants will be able to:

- Make observations and document them
- Identify the parts of a plant and understand how those parts help a plant survive
- Understand and explain the role of pollinators

Next Generation Science Standards

LS: Life Science			
Kindergarten		Grades 1-2	
K-LS1-1	Use observations to describe patterns of what plants and animals (including humans) need to survive	2-LS2-1	Plan and conduct an investigation to determine if plants need sunlight and water to grow
K-ESS3-1	Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live	2-LS4-1	Make observations of plants and animals to compare the diversity of life in different habitats

Conducting the Activity

Materials

Resources needed

- Dry seeds such as peas or beans
- Plastic zipper storage bags (small)
- Paper towels
- Water
- Permanent marker
- Tape
- Nature Notebook either printed as a sheet or cut and stapled into a booklet
- Plastic cups
- Soil

Engage

Connect to prior knowledge

- Ask your students about living things and what they need to survive. Is a plant living? How do you know?
- Ask students if they have ever encountered seeds before. Do they know what seeds are for?
- Discuss observation, and what senses we use to make observations
- Discuss the parts of a plant (roots, stems, leaves, flowers, fruits). And how each part is used to help a plant get food and water.

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NOTES ON ACTIVITY

Conducting the Activity

Explore

Hands-on learning

1. The night before you begin the activity, submerge the seeds in water. Leave them in the water overnight, and drain them before beginning the activity.
2. Give each student 1 plastic zipper bag, 1 paper towel, 1 permanent marker, 1 nature notebook, and 5-10 seeds.
3. Have each student write their name on the bag in permanent marker.
4. Dampen the paper towel, fold it, and place it inside the bag.
5. Place the seeds on one side of the paper towel inside of the bag. Lightly press the seeds into the paper towel. Close and seal the bag.
6. Hang the sealed bags in a window using tape and/or string, making sure that the seeds are visible from inside the classroom.
7. On Day 1 of their nature notebook, have the students illustrate what the seeds look like. Label any parts of a plant that they can identify.
8. Have the students make observations daily for 5 days. Each day they should draw what the seeds and sprouts look like, and identify parts of the plant that they see growing.
9. On the fifth day, give each student a plastic cup with soil so that they can plant their seeds. Discuss what plants need in order to survive.
10. Students may bring their seedlings home and place them in a windowsill, or keep them in class to continue to observe the plant growth and development. Both peas and beans can grow flowers and fruits.

Explain

Listening and communicating understanding

- Discuss what plants need in order to survive - sunlight, water, and soil with nutrients
- Discuss how the parts of the plant help it to get what it needs to survive.
- Discuss how plants make fruits and seeds with pollination. Plants need animals (pollinators) so that they can make seeds.

Extend

Group projects, real world connections

1. Go outside and see what parts of a plant students can identify. How do these parts look different in different plants?
2. If you continue to grow your seeds in class they will grow flowers! students can pollinate the flowers with q-tip, and then see the fruits grow. Many of the fruits and vegetables that we eat rely on pollinators to survive. What can we do to help pollinators?

Evaluate

Summarize, check for understanding, assess

- The nature notebook can assess their observation skills
- Use the supplemental worksheets to enhance the lessons
- Have the students share their observations with each other
- Share any questions the students may have

My Nature Notebook

Day 1

Name _____

Day 2

Day 3

Day 4

Day 5

What do plants need?

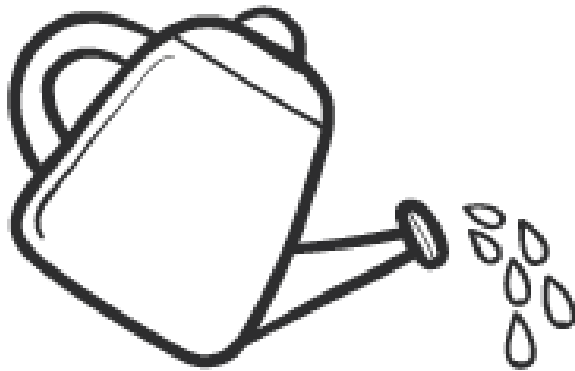
Color the picture. Plants need water, soil, air and sunlight to grow.



Name _____

What do plants need to grow?

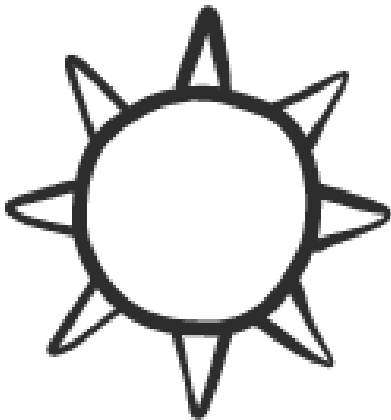
Color the pictures. Match each picture with the correct word



sun



air



soil



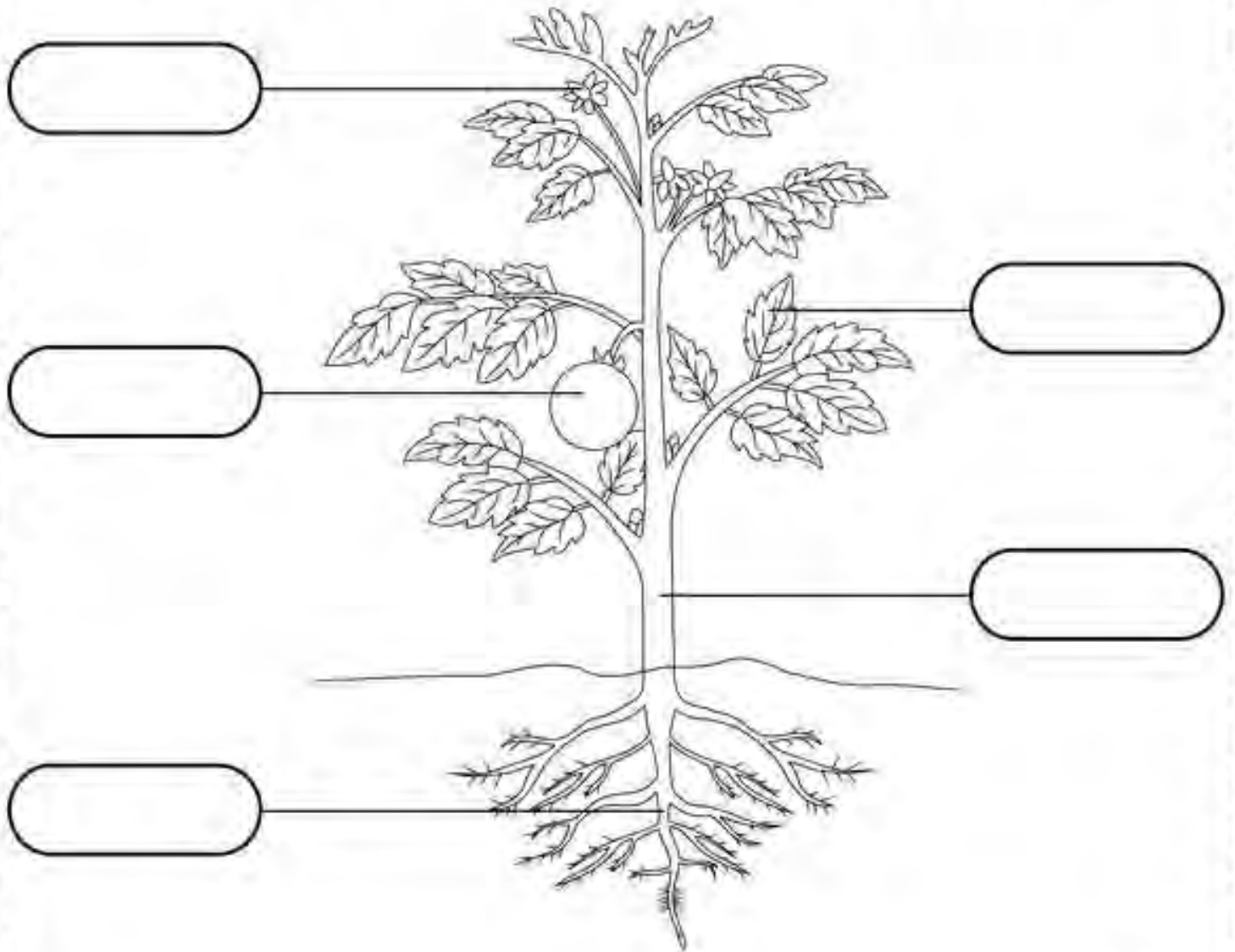
water

Name _____

Name: _____

Date: _____

Label the Parts of a Plant



Word Box

Flower

Fruit

Stem

Leaf

Root

Name _____

Sort the words into the correct box.

Plant Parts

Plant Needs



seeds

sunlight

leaves

water

fruit

flower

air

soil

stem

roots

Name: _____



Pollinators



Pollen is the sticky powder that is inside flowers. Pollen is what helps the plant to make seeds. To make seeds, the pollen needs to move to different parts of the plant or different plants. Birds, bats, butterflies, bees, other animals and wind help to move pollen. They are called pollinators. When pollen moves to different parts of the plant or other plants, pollination happens. Pollination is when more seeds or fruit are produced.

- ❶ What is pollen?

- ❷ Where is pollen found?

- ❸ List 3 pollinators:

- ❹ Why is pollination important?