

Plants

CONTENT STANDARD: Life Science

CONTENT TOPIC: Plants

CONCEPT: Plants reproduce and grow in various ways.

CONTENT OBJECTIVE: To understand environmental factors which affect plant growth and how plants adapt to the environment

INSTRUCTIONAL OBJECTIVES: The learner will:

- List the factors necessary for plant growth.
- Explain that different plants require different environments to thrive.
- Describe how plants adapt to their environment.

OUTLINE OF CONTENT:

I. Factors necessary for plant growth

A. Water

1. All plants need water

2. Some plants need more water than others

B. Light

C. Air

D. Nutrients

II. Different plants require different environments

III. Trees lose their leaves in the fall

IV. Trees grow new leaves in the spring

V. Trees shed their leaves to help conserve food and water in the winter

CLASSROOM CONNECTORS

TIME REQUIRED: 30 minutes

MATERIALS:

Classroom Connector: Small cups, potting soil, seeds/seedlings and water

SET:

Today, we are going to identify what plants need for growth. Who can help me list them on the board? We know all plants need WATER. LIGHT is also necessary for their growth, as well as air and nutrients (food).

Plant Cycle:

Seed: Seeds are easily stored, compact, and are usually dark brown (protective coloring). They survive in extraordinary circumstances.

Germination: With water, the right temperature and the right location (e.g. soil) the seed begins to make a new plant.

Stems and Roots: Stems put up towards the light, leaves unfold to take more sunlight, and branches appear. Roots push down to anchor the new plants while they take up minerals and water from the soil.

Leaves and Flowers: Leaves gather light, CO₂ and water. Flowers start the seeds process over.

Pollination: Flowers are pollinated in various ways – by bees, and other animals or even by the wind. At the base of each flower, seeds are formed.

Seeds: Then seeds are scattered by dying plant, falling off plant, carried away by the wind, etc...

We are going to observe some plants for the next few days, to see what happens when they are given (or not given) these necessary factors for growth.

ACTIVE PARTICIPATION:

Divide the class into six (6) teams. Give each team some soil, small cups and seeds. Have each team place some soil in each cup. Plant a seed(s) in each cup and then water.

CLOSURE:

Observation Questions: Things to watch for (observe) while plant(s) grow.

1. What will happen if we don't give our plants enough light? Can we use the light inside or do we need the sun? Where is the best place to keep our plants so that it will get enough light?
2. What will happen if we don't give our plants enough air (oxygen for roots, CO₂ for leaves)? What happens if we water too much?
3. What will happen if we don't have enough food (nutrients) for our plant? What type of food is best for our plants?
4. What will happen if we don't give the plant enough water? What happens if we water too much?
5. How can we test and answer the questions above?

What are the factors necessary for healthy plants? Discuss adequate light, water, air, nutrients. Let the children carry the plants home for care. Students should chart the growth of the plant for a couple weeks. The students can then bring the grown plant back to school and review.