

**Growing Plants: Light vs. Dark**

**Grade 1: Matter and Energy**

<h2 style="margin: 0;">Lesson Plan</h2>	Assessment	Observation
	Cross-curricular	Mathematics

**Big Ideas**

- We will explore the importance of sunlight in the process of growing plants.
- We will explore whether plants grow differently in the sunlight or in the dark.

**Specific Expectations**

- Investigate how the sun’s energy allows humans to meet their basic needs, including the need for food.
- Use scientific inquiry/experimentation skills and knowledge acquired from previous investigations, to explore the effects of light and heat from the sun.
- Demonstrate an understanding that the sun, as the earth’s principal source of energy, warms the air, land, and water; is a source of light for the earth; and makes it possible to grow food.
- Demonstrate an understanding that energy is something that is needed to make things happen and that the sun is the principal source of energy for the earth.

**Description**

In this lesson, we will explore if plants can grow without sunlight. We will make predictions about the growth of the plants in the dark. We will also compare the observations made about the plants in the sunlight and the plants placed in the dark.

**Materials**

- Seeds (ideal: bean seeds or sunflower seeds)
- Plant viewer (optional), small flower pots or cups can be used
- Potting soil
- Water (watering container or spray bottle)
- Ruler
- Sunlit area and dark area without any light (cupboard, under a box)

**Safety Notes**

- Ingredients are not to be ingested.
- Follow proper handwashing routines after touching the potting soil and seeds.
- Wear gloves while handling the potting soil (optional).

---

## Introduction

### Large Group Inquiry:

- Discuss what plants need to grow. *Soil (nutrients), water, air, light*
- Pose the question: *Can plants grow without sunlight? If so, would they grow the same as when we grow them in the light?*

---

## Action

### Modelling:

- Planting - If the container does not have drainage holes at the bottom, place some pebbles at the bottom of the container. Fill the plant viewer or pot with potting soil. Plant one seed halfway down the container. Cover the seed with a shallow layer of soil. Water until the soil is moist.

### Small Group:

- In small groups, have the students plant their own plants following the steps previously modelled.
- Once all of the plants are potted, place half of the planters in a spot that receives lots of sunlight. Place the remaining pots in a dark space such as a cupboard or under a box.
- Refer to the question again: *Can plants grow without sunlight? If so, would they grow the same as when we grow them in the light?* Discuss the predictions. Have the students complete the “Predictions” handout.
- Check in on the plants every few days to water them and record observations.
- Things to observe: Are the plants in the dark space growing? If so, are they growing at the same rate as the plants in the sunlight? Are the plants the same colour? Are there any other differences when comparing the two plants?
- Using a ruler, measure both sets of plants. Use the “Observation Tracking” sheet to track the growth of the plants.

---

## Consolidation/Extension

### Wrap-up:

- Discuss the predictions and observations. What was the outcome?

### Extension:

- As an extension, you can complete this experiment again but instead observe if plants can grow without water.