SCIENCE NORTH SCIENCE NORD

SUDBURY, ONTARIO, CANADA

**From Seed To Plant** **Grade 3 Life Systems**

# Lesson Plan

| | |
|---|---|
| Assessment | Research, Experiment |
| Cross-curricular | Language |

## Big Ideas

- Plants have distinct characteristics.
- There are similarities and differences among various types of plants.

## Overall Expectations

- Investigate similarities and differences in the characteristics of various plants, and ways in which the characteristics of plants relate to the environment in which they grow.
- Demonstrate an understanding that plants grow and change and have distinct characteristics.

## Specific Expectations

- **1.1** Assess ways in which plants are important to humans and other living things, taking different points of view into consideration and suggest ways in which humans can protect plants.
- **2.2** Observe and compare the parts plants.
- **2.3** Germinate seeds and record similarities and differences as seedlings develop.
- **2.6** Use appropriate science and technology vocabulary, including stem, leaf, root, pistil, stamen, flower, adaptation, and germination, in oral and written communication.
- **3.1** Describe the basic needs of plants, including air, water, light, warmth, and space.
- **3.5** Describe ways in which humans from various cultures, including Aboriginal people, use plants for food, shelter, medicine, and clothing.

## Description

In this lesson, students will consider ways in which plants are important to humans. They will explore plants in their community while trying to identify their major parts. Students will germinate seeds and record some of the similarities and differences as seedlings develop.

## Materials

- Sticky notes and/or chart paper
- *Student Observation Sheet*
- Fast germinating seeds (i.e. nasturtium, morning glory, sunflower, tomato, beet, radish)
- Soil
- Water
- Containers for seed germination

## Safety Notes

Students will be growing their own seeds. Gloves should be worn when using soil and planting seeds.

## Introduction

On sticky notes, ask students to write ways in which plants are important to humans. Students can come up with several answers using specific examples of plants that they are familiar with. Once each student has identified a few examples of how plants are important, have students share their answers and add their sticky notes onto a large piece of chart paper. Discuss why plants are useful for a variety of purposes and use this to introduce the role humans can play in helping plants to grow. Ask students what the needs of plants are and record their answers on chart paper. This can be used as reference for when they begin to grow their own quick germinating seeds.

## Action

Take students on a walk in the community. As they explore, have students use the *Student Observation Sheet* to draw and label 3 plants that they see, being careful not to harm them. Ask student to identify the root, stem, flower, stamen, pistil, leaf, seed, and fruit of the plants where possible. As they explore, have students consider different types of plants and think about what plants need in order to grow and develop.

After your exploratory walk, return to the classroom and have students take a look at the different seeds available to plant. Have students make predictions of what they think the process will look like and document it on their observation sheet. Have different students or groups plant different seeds and determine an observation schedule so that they will be able to compare the differences as the seeds are growing. Students will make 14 observations of their plant which can be done in the *Student Observation Sheet*.

## Consolidation/Extension

During the time when their seeds are germinating, have students research how their plant is used in various cultures. Encourage students to consider ways in which humans can continue to protect plants like these so that they will be available in future for others.

For a visual representation on how nutrients are moved from roots to leaves, place a stalk of celery in a cup of water and add a few drops of food colouring. In a few days observe how the food colouring moved up the xylem of the celery and into the leaves.

## Resources

- Flowering Plant Life Cycles: https://www.sciencelearn.org.nz/resources/82-flowering-plant-life-cycles
- Life Cycle of a Plant Online Activity: http://www.sciencekids.co.nz/gamesactivities/lifecycles.html
- Seedling Time-lapse: https://www.youtube.com/watch?time_continue=8&v=26PeQDCMGrI
- Plant Growing Time-lapse: https://www.youtube.com/watch?v=W-