

Opimihaw Creek

Science Grade 3

Life Science: Plant Growth and Changes (PL)
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PL3.1 Investigate the growth and development of plants, including the conditions necessary for germination.

- a. Pose questions related to plant growth (e.g., How do very young plants look different from grown plants? How much water do plants need to grow? Do all plants grow in the same way?).
- b. Observe and explain the function of the major structures (i.e., root, stem, flower, leaf, and fruit or seed) of a variety of plants.
- c. Relate characteristics such as the number and shape of leaves, flower colour, height, and presence and type of fruit in different types of plants to the plant's environment.
- d. Sort and classify plants and/or seeds according to one or more student-selected attributes.
- e. Observe and represent, using written language, pictures, and charts, changes that occur through the life cycle of a flowering plant.
- f. Compare the basic needs of plants to the basic needs of animals and humans.
- g. Research ways in which plants rely on animals and abiotic factors (e.g., gravity, wind, and water) to support plant reproduction by dispersing seeds.
- h. Predict and investigate conditions such as the temperature, available sunlight, available nutrients in soil, and available water, which are necessary for plant germination and growth.
- i. Care for a flowering plant throughout its life cycle, tracking its growth and changes.
- j. Estimate, record, and display relevant measurements of plant growth, using rulers, tables, and bar graphs.
- k. Suggest explanations for patterns and discrepancies in the growth rate of similar plants grown in varying conditions.
- l. Explain the importance of water and light for plant growth and the mechanisms by which plants obtain water and light from the environment.
- m. Identify characteristics that remain constant and those that change throughout the life cycle of a flowering plant.
- n. Pose new questions about conditions necessary for plant growth, based on what was learned.

PL3.2 Analyze the interdependence among plants, individuals, society, and the environment.

- a. Observe, safely and respectfully, plants in local environments (e.g., classroom, flower garden, school yard, community garden, forest, reserve, and nature preserve).**
- b. Research traditional and contemporary uses of plants or parts of plants, such as food, beverages, medicine, arts, seed banks, shade, wind breaks, erosion protection, cultural celebrations, and for creating products such as dyes, shelter, and clothing.**
- c. Examine the significance to some First Nations and Métis people of offering tobacco during harvesting and how that purpose differs from using the tobacco plant for smoking.**
- d. Examine the importance of agriculture in Saskatchewan, including the variety of plants and plant-related products.**
- e. Describe examples of plant biodiversity (e.g., trees, shrubs, bushes, herbs, grasses, vines, and mosses) in various ecosystems throughout the world.**
- f. Explain how to determine whether plants are healthy and discuss societal and environmental impacts of diseased plants.**
- g. Describe ways that plants and animals depend on each other.**
- h. Assess the impact of natural (e.g., animal migration, fire, competition, and decay) and human activity (e.g., burning land, logging, fertilization, soil compaction, and picking endangered plants) on the biodiversity of plant species.**
- i. Examine the type and quantity of plants and plant matter in the diets of people who live in various communities and/or represent various cultures.**
- j. Explain how and why plants are replenished naturally (e.g., forest fires, and pollination) and artificially (e.g., tree farms, planting seedlings, and seed banks).**
- k. Defend a position related to plant use (e.g., picking plants, harvesting crops, fertilization, and planting invasive species) and protection (e.g., establishing conservation areas, planting native species, and developing alternatives to plant-based products).**
- l. Imagine a world without plants and describe the impact on animals, people, and the environment.**
- m. Respond to and acknowledge the ideas of others regarding the importance of plants to self and society.**
- n. Research lifestyles (e.g., farming, fishing, and logging) and jobs (e.g., florist, crop scientist, landscaper, gardener, fruit grower, ecologist, logger, and nursery worker) which depend on understanding and working with plants and plant-related products.**

Earth and Space Science: Exploring Soils (ES)

ES3.1 Investigate the characteristics, including soil composition and ability to absorb water, of different types of soils in their environment.

- a. Pose questions and make predictions about the characteristics and composition of soils that lead to exploration and investigation (e.g., What colours are soil? What does soil feel like? Where does soil come from? Is there water in soil?).**
- b. Examine physical characteristics (e.g., particle size, texture, moisture, particle size distribution, colour, and ability to hold together) of soils from different locations (e.g., garden, flower pot, river bed, slough, hill top, grassy field, lawn, ditch, and forest) in their environment.**
- c. Classify soils in their environment according to location and type (e.g., clay, sand, silt, and loam).**
- d. Analyze soil samples using tools such as spoons, hand lenses, jars, and filters appropriately and safely.**
- e. Make and record observations and measurements in investigations related to soil composition using techniques such as notes in point form, diagrams, tables, bar graphs, photographs, and video.**
- f. Make predictions about the capability of different types of soil to absorb water and test these predictions through exploration and investigation.**
- g. Collect and display data, using tables and bar graphs, to show the amount of water absorbed by different types of soil.**
- h. Sort soil samples according to one or more physical characteristics such as texture, ability to absorb water, particle size, and colour.**
- i. Communicate procedures and results of investigations related to the testing of water absorption of soils using drawings, demonstrations, and oral and written descriptions.**
- j. Propose answers to initial questions related to soil composition based on personal investigations.**

ES3.2 Analyze the interdependence between soil and living things, including the importance of soil for individuals, society, and all components of the environment.

- a. Suggest ways in which individuals and communities value and use soil, including the importance of Mother Earth for First Nations and Métis peoples.**
- b. Examine the interdependence between animals and soils (e.g., insects and grubs live in soil, soil provides shelter for some animals, and earthworms aerate soil).**
- c. Examine the interdependence between plants and soils (e.g., soils provide nutrients for plant growth, plant leaves die and fall onto the ground, and plant roots spread throughout soil).**
- d. Relate the characteristics of soils (e.g., composition, colour, texture, and ability to absorb water) to their uses (e.g., agriculture, berms, fuel, pottery, earth shelters, road building, habitats, landscaping, and purifying water).**
- e. Observe the effects of moving water on soils in different environments (e.g., beneath an eavestrough downspout, along a stream bank, down a slope, and under a sprinkler).**
- f. Collaboratively design and safely carry out procedures to determine the effects of moving water on different types of soils.**
- g. Propose practices that individuals and communities can take to reduce the effects of erosion on a small-scale (e.g., vegetable garden and flower pot) and large-scale (e.g., agricultural field, sports field, river bank, and road ditch).**
- h. Suggest sustainable practices (e.g., composting and fertilizing) that can affect soils positively and reduce or prevent harmful effects such as compaction and contamination of soils.**
- i. Research careers that involve an understanding of soils.**