

Anoka Hennepin K-12 Curriculum Unit Plan

Department: Elementary Science

Course/Grade Level: 2nd

Unit Title: Life Science - Plants

Number of Lessons/Days: 7 required one-hour sessions, 1 optional

Unit Summary: In this unit students will describe and sort plants based on their physical characteristics. Students will explore and describe how a plant changes during the life cycle. Students will recognize the needs of a plant for survival and how the plant environment can affect these needs. Students will grow and observe brassica plants, stem cuttings, and potato spuds. The knowledge obtained will be assessed through the GRASPSS.

DESIRED RESULTS (STAGE 1)

Program Understanding and/or Minnesota State/Local/Core Standards and Technology Standard(s) addressed:

- II. Students will understand that there is a diversity of life forms, which are interdependent and inter-connected.
- IV. Students will understand that the study of science involves processes that unify science disciplines and provide students with ideas and structures to help them understand the natural world.
- V. Students will understand that the process of inquiry is the collection of information verified through observation and experimentation which allow scientists to critically analyze, draw conclusions and make inferences about the natural world.
- VI. Students will understand that scientists use various communications to share knowledge and promote understanding about our natural world.

MN Standards

- 2.1.1.2 Scientific inquiry is a set of interrelated processes incorporating multiple approaches that are used to pose questions about the natural world and investigate phenomena.
 - 2.1.1.2.1 Raise questions about the natural world and seek answers by making careful observations, noting what happens when you interact with an object, and sharing the answers with others.
- 2.4.1.1 Living things are diverse with many different observable characteristics.
 - 2.4.1.1.1 Describe and sort plants into groups in many ways, according to their physical characteristics and behaviors.
- 2.4.2.1 Natural systems have many components that interact to maintain the living system.
 - 2.4.2.1.1 Recognize that plants need space, water, food and air and they fulfill these needs in different ways.
- 2.4.3.1 Plants and animals undergo a series of orderly changes during their life cycles.
 - 2.4.3.1.1 Describe the characteristics of plants at different stages of their life cycles. *For example:* Use live organisms or pictures to observe the changes that occur during the life cycles of bean plants or marigolds.

Overarching Understanding(s) from Curriculum Map/Course Understandings:

Students will understand that....

- all living things grow and change, sometimes in predictable patterns to sustain life.
- living things interact with their habitat in order to survive.

Essential Question(s) from Curriculum Map/Course Essential Questions:

To understand, student will need to consider such questions as...

- What is a life cycle?
- What do living things need to survive?
- How do scientists find and use patterns?
- How accurate does an observation have to be?

- plants have different observable characteristics, which allow them to be classified.
- there are patterns that help make connections in the world.
- scientists ask questions and make observations to gather data to support their thinking about the world.
- scientists work individually and collaboratively to understand the natural world and learn from one another.

Topical Understanding(s) Specific to Unit:

Students will understand that....

- plants can be described and sorted into groups according to their physical characteristics and behaviors.
- plants and their surroundings work together to meet their needs for space, water, nutrients and air in order to survive.
- plants will undergo changes in their physical characteristics during their life cycle.
- scientists see patterns, raise questions, seek answers, make observations and communicate with others in order to make connections in the natural world.

- What makes a good question?
- Why and how do scientists share what they know with others?

Topical Essential Questions for Unit:

To understand, student will need to consider such questions as...

- How do plants survive?
- How do plants change during their life cycle?
- How can we describe and sort plants?
- What makes a good question?
- How do scientists learn and share about the world around them?

To understand, student will need to...

<p>know...Student will need to know the following in order to...(e.g. facts, concepts, generalizations, rules, theories, principles)</p>	<p>be able to...(Students will be able to DO...skills, procedures, processes)</p>
<ul style="list-style-type: none"> • plants have features that help them live in different environments. • plants need space, water, nutrients and air to survive depending on its environment. • plants go through a series of changes as they grow and develop. • inquiry process is the way scientists learn and study the world around them. <p>Essential new vocabulary:</p> <ul style="list-style-type: none"> ○ bud: a small bump on a stem that grows into a flower ○ cutting: to make new plants from pieces of a stem of an old plant ○ fertilizer: a vitamin added to help a plant grow ○ flower: the part of a plant that grows fruit or seeds ○ germination: to begin to grow or sprout ○ leaves: a plant part that is usually green and makes food from sunlight ○ life cycle: all the parts or stages of a living thing from birth to death, plant example: seed, sprout, stem, leaves, flower, fruit/seed ○ nutrients: food that an organism needs to live, grow and stay healthy ○ plant: a living thing that makes its own food from sunlight and cannot move from place to place on its own ○ roots: the usually underground part of a plant that helps get food and water to the plant while holding it in place ○ seed: a small plant part that can grow into a new plant ○ sprout: stage of the plant life cycle when the stem starts to grow ○ stem: the main part of a plant that develops buds ○ system: any group of parts that work together as a unit <p>Common misunderstanding(s):</p> <ul style="list-style-type: none"> • Seeds are not living. • Trees, grass, vegetables and weeds are not plants. • Bushes are baby trees. • In the life cycle of a flowering plant, the fruit develops before the seeds. • There is no continuity of life from seed to seedling. • Death is not a part of a life cycle. • All scientists conduct experiments in a lab. • The purpose of scientific inquiry is to prove that a scientific hypothesis is correct. • A scientific problem is something you solve: there is a right or wrong answer; only one test is necessary; the test is to prove that their hypothesis is correct. • You have to be given the problem in order to use the scientific method. 	<ul style="list-style-type: none"> • describe and sort plants according to their physical characteristics and behaviors. • recognize that plants need space, water, nutrients and air to survive. • describe the characteristics of plants at different stages of the life cycle. • ask testable questions, investigate to answer the student's questions and share results.