

3.D.2 Plant Life Cycles

Creating a diagram of the generic plant life cycle

Grade Level	3
Sessions	(1): 1 at 50 minutes
Seasonality	Spring
Instructional Mode(s)	Whole Class
Team Size	N/A
WPS Benchmarks	03.SC.TE.04, 03.SC.LS.07
MA Frameworks	3-5.TE.2.1, 3-5.LS.0.3
Key Words	Diagram, Fruit, Germinate, Life Cycle, Plant

Summary

Students will learn to construct a diagram that demonstrates how plants change in a predictable pattern called a *life cycle*. A diagram is a useful way to convey various types of information and will show the distinct stages through which a generic plant passes.

Learning Objectives

2002 Worcester Public Schools (WPS) Benchmarks for Grade 3

1. 03.SC.TE.04 Describe different ways in which a problem can be represented, e.g., sketches, diagrams, graphic organizers, and lists.
2. 03.SC.LS.07 Recognize that plants and animals go through life cycles that include birth, growth, development, reproduction and death.

2001 Massachusetts Frameworks for Grade 3

1. 3-5.TE.21 Describe different ways in which a problem can be represented, e.g., sketches, diagrams, graphic organizers, and lists.
2. 3-5.LS.03 Recognize that plants and animals go through predictable life cycles that include birth, growth, development, reproduction, and death.

Additional Learning Objectives

1. Students will work independently to solve the problem of representing a plant life cycle graphically.

Required Background Knowledge

1. Students should be familiar with the idea that plants undergo a life cycle that includes the following stages: seed, plant, flower, fruit, seed and death.

Essential Questions

1. What is a diagram?
2. Why is a diagram useful?
3. What are the various stages of a plant's life cycle?
4. How can a diagram show different the stages of a plant's life cycle?

Introduction / Motivation

The instructor might begin by asking students to discuss, as a class, the definitions of “plant” and “diagram” (see Vocabulary with Definitions). Students may wish to comment on whether or not animals need plants to survive, and if so, why.

Procedure

The instructor will:

1. In a visible location, create a diagram of the generic “plant life cycle”. The plant life cycle usually includes the following events:
 - Seeds germinate
 - Roots and stem appear
 - Leaves appear
 - Flowers appear
 - Flowers produce pollen
 - Flowers receive pollen
 - Plants produce fruit that contains seeds
 - Seeds disperse
2. Ask students to use the attached worksheet to create a diagram of the “plant life cycle.” Students may draw and color directly on the worksheet, or may use the worksheet as a guide, creating their Plant Life Cycle Diagram on a larger separate sheet of paper.

Materials List

Materials per student	Amount	Location
<u>Plant Life Cycle</u> Worksheet	One	End of lesson plan – print or photocopy

Vocabulary with Definitions

1. *Diagram* – a symbolic representation of information that shows and explains relationships.
2. *Fruit* – the seed-bearing part of a plant.
3. *Germinate* – to begin to grow.
4. *Life cycle* – the series of repetitive events experienced by an organism as it grows, develops, reproduces, and dies.
5. *Plant* – a photosynthetic organism that reproduces itself, usually by producing fruit and seeds.
6. *Vegetable* – the edible part of a plant, such as the root, leaf, stem, flower, or bud, other than the seed-bearing embryo (fruit).

Assessment / Evaluation of Students

The instructor may assess the students in any/all of the following manners:

1. Collect student worksheets to gauge student understanding of the use, function, and proper construction of a “diagram”.
2. Collect student worksheets to determine how well students can graphically represent the “plant life cycle”.

Lesson Extensions

1. Allow students to use magnifying glasses to examine the inside of dried beans that have been soaked for several days in water. Each seed should show a tiny root as the seed begins to germinate (see Vocabulary with Definitions).
2. Use lesson 3.D.3 Corn and Bean Plant Life Cycles to teach students specifically about corn and bean plants.

Attachments

1. The Plant Life Cycle

Troubleshooting Tips

None

Safety Issues

None

Additional Resources

1. Life cycle of a plant graphically represented. <http://www.arboretum.fullerton.edu/grow/primer/cycle.asp> (27 January 2006).

