

Experiments with Plants Concept Storyline

Unifying Concept

Evidence collected in appropriately designed experiments can be used to test hypotheses.

Unit Concept

Controlled experiments can identify the impact of external variables on the growth of plants.

Grade-Level Concept

Changes of certain variables in a plant's environment affect its growth. Controlled tests can identify the effect of these variables.

Subconcept 1

Experiments are designed to test a hypothesis.

Lesson 1: Pre-Unit Assessment: What Do You Know about Experiments?
Students discuss how to design a scientific experiment.

Lesson 2: Identifying Variables and Planning a Fair Test
Students examine the variables that affect plant growth.

Lesson 3: Outlining the Experimental Plan
Students design a controlled experiment.

Subconcept 2

Experiments may be designed to identify the effects of external variables on the stages in the life cycle of a plant.

Lesson 4: Planting the Seeds
Students plant seeds on the basis of their experimental plan.

Lesson 5: Thinning and Transplanting
Students eliminate the variable of overcrowding.

Lesson 6: Getting a Handle on Your Bee
Students study the anatomy and function of the bee.

Lesson 7: Pollination and Interdependence
Students pollinate their plants.

Lesson 8: Harvesting and Threshing the Seeds
Students harvest their crops and collect their final data.

Subconcept 3

Collecting, evaluating, and sharing data are parts of the conduct of a scientific experiment.

Lesson 9: Organizing and Analyzing the Data from the Experiment: Part 1
Students begin to review and discuss their data.

Lesson 10: Organizing and Analyzing the Data from the Experiment: Part 2
Students continue to analyze their data.

Lesson 11: The Scientific Conference: Communicating the Experiment and Its Results
Students report their results to the class.

Subconcept 4

Scientists conduct a variety of investigations to discover new information about variables that affect plant growth.

Lesson 12: Planning and Setting up Germination Experiments
Students design and conduct a controlled experiment in seed germination.

Lesson 13: What Did We Find Out about Germination?
Students analyze data from the germination experiment.

Lesson 14: Two Tropism Experiments
Students set up and conduct an experiment to determine how light and gravity affect the growth of a plant.

Lesson 15: What Did We Find Out about Tropisms in Wisconsin Fast Plants™?
Students analyze data from the tropism experiment.

Lesson 16: Post-Unit Assessment: Sharing What We Know about Experiments with Plants
Students discuss and reflect on what they have learned.

