

Plant Growth and Development Concept Storyline

Unifying Concept

Plants and other organisms are part of an organized system that regulates their life cycles and their interactions with the environment.

Unit Concept

Plants can grow and develop only in environments in which their needs are met.

Grade-Level Concept

To move through their life cycle, plants need light, water, and nutrients from the soil. To reproduce, plants must be pollinated.

Subconcept 1

Organisms go through distinct stages as part of a process known as the life cycle.

Lesson 1: Pre-Unit Assessment: What Do You Know about Plants?

Students observe bean seeds and reflect on what they know about plants.

Lesson 2: What Is Inside a Seed?

Students identify the parts of a bean seed.

Lesson 3: Planting the Seed

Students plant their Brassica rapa seeds.

Lesson 4: Thinning and Transplanting

Students discuss the purpose of thinning and transplanting and carry out these tasks.

Lesson 5: How Does Your Plant Grow?

Students create bar graphs and begin to keep records of the growth of their plants.

Lesson 6: Observing Leaves and Flower Buds

Students observe the leaves and buds that have formed on their plants.

Lesson 7: Observing the Growth Spurt

Students measure and record plant height, make predictions about plant growth, and analyze their data.

Lesson 12: Observing Pods

Over a two- to three-week period, students examine the development of the fertilized pods.

Lesson 16: Harvesting and Threshing Seeds

Students harvest their seeds and compare the number of seeds harvested with the number planted.

Subconcept 2

Living things are interdependent; for example, plants depend on bees for pollination.

Lesson 8: Why Are Bees Important?

Students share what they know about bees.

Lesson 9: Getting a Handle on Your Bee

Students examine dried bees using a hand lens and make bee sticks.

Lesson 10: Looking at Flowers

Students study the anatomy of a flower and read about the crucifer family.

Lesson 11: Pollinating Flowers

Students cross-pollinate flowers using their bee sticks and read about the interdependence of flowers and bees.

Subconcept 3

Models can be used to identify the structures, functions, and behaviors of living organisms.

Lesson 13: Making a Brassica Model

Students construct a model of the Brassica plant.

Lesson 14: Making a Bee Model

Students construct a model of a bee.

Subconcept 4

Records, notes, and graphs help people understand how plants move through the life cycle and what factors affect their growth and development.

Lesson 15: Interpreting Graphs

Students apply their science and math skills to interpret graphs.

Lesson 17: Post-Unit Assessment: Sharing What We Know about Plant Growth and Development

Students discuss and reflect on what they have learned.