

# 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.*