**Concept Storyline: *Plant Growth and Development***

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| **Unifying Concept** | **Unit Concept** | **Grade-Level Concept** |
| Plants and other organisms are part of an organized system that regulates their life cycles  and their interactions with the environment. | Plants can grow and develop only in environments in which their needs are met. | 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 Seeds** *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 the 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.*

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