

# Plant Life Cycle

## 4<sup>th</sup> Grade

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### **Benchmarks:**

SLC 5: A. Students will identify and explain events and cycles (i.e., phases of the moon, daily and seasonal orientation of the sun, life cycles of plants and animals, motion of gears etc.) and the next likely occurrences. (S04.1.05A) B. Students will create charts and graphs to show patterns over time and predict the next likely occurrences.

SLC 18: Students will describe the characteristics that determine if something is living (ability to grow and change, reacting to its environment, needing a food/energy source, taking in gases, reproducing, and having cells), dead or nonliving.

### **Objectives:**

1. Find out what the students know about plants as far as the process of growth and what is required for plants to survive.
2. Introduce the concept of a life cycle and sequence of events.
3. Illustrate how the life cycle never ends and is continuous and moves along with the seasons of the year.
4. Stress the importance of water, sunlight, and nutrients during the plant life cycle

### **Materials:**

- Construction paper cutouts illustrating the life cycle.

### **Discussion:**

Stimulate the discussion to find out what the students know so far about plants. Come up with lists of things that they associate with plant growth and what plants need to survive. Define and distinguish the terms of germination, pollination, roots, and stems.

### **Target Model:**

*-Plants need: light, nutrients, water, and heat to survive.*

*-Germination is the sprouting of a seed started usually by the seed absorbing water, passage of time, and/or chilling and warming the seed.*

*-Pollination is the transfer of pollen grains from the stamens to the ovules, resulting in the creation of a seed.*

*-The root is the part of the plant that is normally underground and is responsible for anchoring the plant and collecting water and nutrients.*

*-The stem is the main body, or trunk, of the plant, and transports water and nutrients to other parts of the plant.*

### **Procedure:**

Divide the class into groups, and pass out to each group the construction paper cutout items that illustrate the life cycle, and ask each group to put the steps in order. Ask them to think about how the seasons of the year may correspond to different steps of this life cycle...

Questions to stimulate thought:

What is a life cycle?  
What other things have life cycles?  
What do plants need to grow and survive?  
What are the different stages of the plants?  
Do all plants require the same things to survive?

**Target Observations:**

- The cutouts can be arranged as a cycle: seed → young plant → adult plant making seeds → seed
- A cycle is something that has steps that, when followed, come back to the beginning.

**Target Model:**

-Plants need: light, nutrients, water, and heat to survive.  
-Germination is the sprouting of a seed started usually by the seed absorbing water, passage of time, and/or chilling and warming the seed.  
-Pollination is the transfer of pollen grains from the stamens to the ovules, resulting in the creation of a seed.  
-The root is the part of the plant that is normally underground and is responsible for anchoring the plant and collecting water and nutrients.  
-The stem is the main body, or trunk, of the plant, and transports water and nutrients to other parts of the plant.  
*-A cycle is something that has steps that, when followed, come back to the beginning.*  
*-The life of a plant can be seen as a cycle from seed to young plant to adult plant making seeds back to a seed.*

**Procedure:**

After students have had the chance to construct their own life cycle come back as a big group and ask them what they have come up with and why they have ordered it the way they have. Then go over the entire life cycle as a group and stress the importance of a cycle and how the process is never ending and just starts over once again. Ask the students how sunlight, water, and nutrients work in the cycle (i.e. what is their importance)? During what part of the cycle is germination and pollination happening? During what stages would the plant have roots or a stem? How does a plant move from one stage to the next? Introduce photosynthesis: a process that is important in most of the plant cycle.

**Target Observations:**

- Water is important for germination, starting the cycle, and for what a plant needs to produce more seeds
- Sunlight is important for the plant to survive and produce more seeds
- Nutrients are important for the plant to survive and produce more seeds
- Germination happens in the beginning of the cycle
- Pollination happens in the middle of the cycle

- A plant will have roots and a stem during most of the cycle – when it is not a seed.

**Target Model:**

- Plants need: light, nutrients, water, and heat to survive.
- Germination is the sprouting of a seed started usually by the seed absorbing water, passage of time, and/or chilling and warming the seed.
- Pollination is the transfer of pollen grains from the stamens to the ovules, resulting in the creation of a seed.
- The root is the part of the plant that is normally underground and is responsible for anchoring the plant and collecting water and nutrients.
- The stem is the main body, or trunk, of the plant, and transports water and nutrients to other parts of the plant.
- A cycle is something that has steps that, when followed, come back to the beginning.
- The life of a plant can be seen as a cycle from seed to young plant to adult plant making seeds back to a seed.
- The things a plant needs to survive is not always the same throughout the cycle: seeds don't really need sunlight or nutrients.*
- Plants are not always the same throughout the plant cycle and they go through stages such as germination and pollination to move to other parts of the cycle.*