

## Plant Growth and Life Cycle

GRADES K-2

### Guiding Question

In what ways do plants change during their lives?

### Connecting Concepts

- All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (NGSS, LS1.A: Structure and Function)
- Adult plants and animals can have young. (NGSS, LS1.B: Growth and Development of Organisms)
- Plants depend on water and light to grow. (NGSS, LS2.A: Interdependent Relationships in Ecosystems)
- Trees have life stages that include germination, growth, maturity, reproduction, decline, and death. (PLT FLF, 1.B.2)

### Scope and Sequence

The collection and order of content below supports an intentional student learning progression.

Activity	Description
<b>A Tree's Life</b>	Students discover that trees have life stages, just like other living things.
<b>Bursting Buds</b>	Students investigate where leaves come from and how they form by observing changes in tree buds.
<b>Tree Cookies</b> (in Grades 3–5, see K–2 Variation)	Students create a “tree cookie” (a cross-section of a tree) that is their own age, marking important events in their lives.
<b>Here We Grow Again</b>	Students conduct an investigation to see how the presence or absence of sunlight, water, soil, air, or space affects plant growth.
<b>Plant a Tree</b> (in Grades 6–8, see 3–5 Variation)	Students plant a tree and track its growth over time.

See [plt.org/academic-standards](http://plt.org/academic-standards) for detailed standards correlations for each activity.

### Storyline

Students explore the growth and development of trees and other plants.

- Begin with the activity A Tree's Life, in which students model the life stages of a tree and observe and compare trees at different stages. Next, or later in the unit (depending on the time of year and when leaf buds are visible in your area), lead the activity Bursting Buds to investigate how tree leaves grow.
- Next, use the Variation for K–2 in the activity Tree Cookies to help deepen students' understanding of how trees grow. Students observe the tree rings in a cross-section of a tree (known as a tree cookie).
- Follow this with the activity Here We Grow Again, in which students observe and measure plant growth. They may create their own investigation or follow the suggested protocol, in which they observe whether the presence or absence of different elements (sunlight, water, soil, or space) affects plant growth.
- Conclude with Plant a Tree. Note that although this is a Grades 6–8 activity, the variation for Grades 3-5 is suitable for ending the unit. Invite students to help plant a tree and challenge them to track its growth over time.