

Patterns of Change

GRADES 3–5

Guiding Question

What patterns do you notice in the ways that trees and ecosystems change over time?

Connecting Concepts

- When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. (NGSS, LS2.C: Ecosystem Dynamics, Functioning, and Resilience)
- Forest ecosystems are complex and dynamic and continuously undergo natural change, adaptation, ranging from gradual change (e.g., succession, climate adaptation) to abrupt change (e.g., fire, disease). (PLT FLF, 1.C.4)

Scope and Sequence

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

Activity	Description
Did You Notice? (in Grades K–2, see 3–5 Variation)	Students create a timeline showing ways that their community has changed over time.
Signs of Fall	Students look for signs that fall is coming and conduct an experiment to learn about the changes that deciduous tree leaves undergo.
Fallen Log	Students examine organisms that live in, on, and under rotting logs or other decomposing pieces of wood and look for signs of decomposition.
A Tree's Life (in Grades K–2, see 3–5 Variation)	Students research and draw diagrams of the life stages of a tree.

See plt.org/academic-standards for detailed standards correlations for each activity.

Storyline

Students explore the concept that trees and ecosystems change over time, exhibiting cyclical patterns.

- Introduce the unit with the Grades 3–5 Variation in the activity Did You Notice? Have students create a timeline showing ways that their community has changed over time, focusing on the trees present in the community. Ask students what other ways trees and ecosystems change.
- Next have students explore some of the changes that individual trees and other organisms undergo during fall, using the activity Signs of Fall. In addition to changing leaves, encourage students to look for more subtle ways that organisms prepare for winter. (Note that this is best conducted in the fall months, so you may need to alter the order of the unit activities to fit your schedule.)
- In the activity Fallen Log, invite students to look for organisms that live in, on, and under rotting logs or other pieces of wood. Encourage them to look for signs that the wood is decomposing and to consider the role of decomposition in both the change and stability of ecosystems.
- Conclude with the Grades 3–5 Variation in the activity A Tree's Life. Invite students to research the stages of the tree life cycle and make diagrams that include the life stages and the life events of the tree. To conclude, combine their diagrams into a "History of the Forest" exhibit and have students describe the patterns of change they have observed through the unit activities.