



Energy in Ecosystems E-Unit Grades 3-5

To get the e-unit, go to shop.plt.org



Introduction: This unit provides activities and resources to help educators and their students explore ecosystems and some of the ways that organisms interact within ecosystems. The introduction section was created to help teachers integrate this unit into their existing curricula. It contains the following chapter heads:

- Unit Approach
- Flexibility Is Key
- Instructional Models
- Learning Progressions
- Lesson Planning Timeline and Tips
- Unit Organization and Navigation
- Book Suggestions
- Teaching Outdoors

Pre-Assessment – This pre-assessment activity enables you to gauge students’ current knowledge on the topic of energy in ecosystems.

(Time Considerations: 20-40 minutes; Setting: Classroom)

Activity 1: The Forest of S.T. Shrew – Students take a “shrew’s-eye-view” of life in the woods to gain an understanding of the variety of organisms that live in forests and to learn how living and nonliving things interact.

(Time Considerations: One to two 50-minute periods; Setting: Classroom)

Activity 2: A Home for Many – Students inventory the plants and animals that live in, on, and around trees and discover how trees meet their needs for survival.

(Time Considerations: Two 50-minute periods; Setting: Classroom/Outdoor)

Activity 3: Web of Life – By conducting research and simulating a food web, students will take a close look at a forest ecosystem and discover ways that plants and animals are connected to each other.

(Time Considerations: Two 50-minute periods; Setting: Classroom)

Activity 4: Power Plants – In this inquiry-based activity, students design investigations to explore what “power plants” need to function and grow.

(Time Considerations: One 20-minute period to introduce the activity and 15 minutes later in the day to observe demonstration, one 50-minute period to set up the experiments, 10–15 minutes once or twice a week for about a month to monitor the experiment, and one 50-minute period to wrap up; Setting: Classroom and Science Lab)

Activity 5: Every Tree for Itself – Through a simulation, students explore the ecosystem components that trees need to live and grow, and learn how organisms in an ecosystem often must compete for their needs.

(Time Considerations: One or two 50-minute periods; Setting: Classroom)

Activity 6: Invasive Species – In this activity, students research invasive species to determine their impact on ecosystems and what characteristics make them so challenging.

(Time Considerations: Two 60-minute periods, plus time for research and presentations; Setting: Classroom)

Post-Assessment – After completing all unit activities, teachers can use this final post-assessment to determine students’ knowledge depth and content gains.

(Time Considerations: 20-40 minutes; Setting: Classroom)

Appendix – The following appendices are included as a part of this e-unit.

- Standards Connections
- Books and Other Resources
- PLT Conceptual Framework
- Acknowledgements
- Technical Support