



## ? GUIDING QUESTION

In what ways do forest organisms depend on each other to survive? How can we model the interconnectedness of organisms in an ecosystem?

## GRADES 3-5

## WEB OF LIFE

### PRACTICES

#### OBTAINING, EVALUATING, AND COMMUNICATING INFORMATION

Students research various organisms that live in a forest ecosystem and share how those organisms depend on each other.

#### DEVELOPING AND USING MODELS

Students participate in a “web of life” model to describe the interconnectedness of the organisms they researched.

### CONCEPTS

#### INTERDEPENDENT RELATIONSHIPS IN ECOSYSTEMS

Students research and model how organisms in a forest ecosystem depend on each other for food, shelter, and other needs.

#### SYSTEMS AND SYSTEM MODELS

Students describe a forest ecosystem in terms of its components and interactions and predict what would happen if one or more organisms in the forest system were removed.

### SCIENCE AND ENGINEERING PRACTICES

#### Obtaining, Evaluating, and Communicating Information

Obtain and combine information from books and/or other reliable media to explain phenomena.

#### Developing and Using Models

Use models to describe and/or predict phenomena.

### DISCIPLINARY CORE IDEAS

#### LS2.A: Interdependent Relationships in Ecosystems

The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or their parts and animals) and therefore operate as “decomposers.” Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem.

#### PERFORMANCE EXPECTATION

**5-LS2-1.** Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

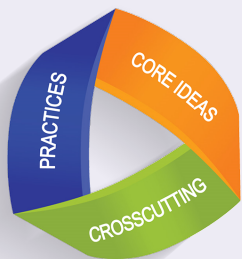
*Note: Keep in mind that no single activity can fully meet a Performance Expectation.*

### CROSSCUTTING CONCEPTS

#### Systems and Systems Models

A system can be described in terms of its components and their interactions.





# NGSS CORRELATION

## ? GUIDING QUESTION: GROUNDED IN PHENOMENA

Phenomenon-based instruction is directly connected to students' homes, communities, and cultures, thus making teaching and learning more diverse, inclusive, and relevant. PLT identifies Guiding Questions that drive phenomenon-based, three-dimensional learning for each of the 50 Explore Your Environment K-8 Activity Guide activities.

## CONNECTING PLT'S EXPLORE YOUR ENVIRONMENT K-8 ACTIVITY GUIDE TO NGSS

### IN THE ACTIVITY

The left hand column details where science connections can be found in the PLT activity.

### PRACTICES

**ENGAGING IN THE PRACTICES OF SCIENCE** helps students understand how scientific knowledge develops. Students gain skill in the wide range of approaches that are used to investigate, model, and explain the world.

### CONCEPTS

**THESE CORE IDEAS HAVE BROAD IMPORTANCE** across science disciplines, providing tools for understanding or investigating complex ideas and solving problems, and can be taught at progressive levels of depth and complexity.

Project Learning Tree is committed to supporting educators in providing instruction that helps students meet science education standards.

The Next Generation Science Standards (NGSS) define what students should know or be able to do at the end of instruction. To demonstrate learning, NGSS identifies Performance Expectations (PEs) that may be used to assess a student's knowledge and proficiency. To meet benchmarks, students engage in the three dimensions of science— Science & Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts—to explain a phenomenon or design a solution.

Activities in the *Explore Your Environment K-8 Activity Guide* provide students opportunities to explore the three dimensions of science to build knowledge and understanding. In addition, activities offer phenomenon-based learning, which involves exploring the real world through learner-centered, multidisciplinary investigations that promote inquiry and problem solving.

The NGSS Correlation pages for each activity include a guiding question, science connections found in the activity, and explicit NGSS correlations. Activities are organized around the three dimensions of science, making it useful for educators even if their state has not adopted NGSS.

### FROM NGSS

The right hand column identifies correlations to specific NGSS standards, including references to the relevant PE for focus on the grade level band.

#### SCIENCE AND ENGINEERING PRACTICES

The practices are what students do to make sense of phenomena and reflect how scientists and engineers investigate the world and design solutions.

#### DISCIPLINARY CORE IDEAS

These foundational ideas of science are grouped into four domains: physical sciences; life sciences; Earth and space sciences; and engineering, technology and applications of science.

#### CROSSCUTTING CONCEPTS

These concepts hold true across the natural and engineered world. Students use them to make connections across disciplines, connect to prior experiences, and engage with material in other dimensions.

