

Before you visit the Forest Discovery Trail: Pre-visit Information and Activities



For additional assistance in planning your trip to the Forest Discovery Trail, please contact Clare Long, the Conservation Education Program Leader, White Mountain National Forest, at (603) 528-8707 or at cclong@fs.fed.us. Resource specialists or forest interpreters may be available to accompany your group.

Students will learn most from the Forest Discovery Trail if they become familiar with some basic forestry concepts before visiting the trail.

Key concepts/themes to introduce

1. Plants are physiological systems that are responsible for growth and reproduction.
2. Ecosystems are composed of many interrelationships.
3. Humans are involved in the management and conservation of natural resources.

Introductory ideas for students

To care for something well, you have to learn a lot about it. For example, when taking care of a new pet or farm animal, you learn what it eats and how much, where it likes to sleep, what illnesses it could get and how to avoid and treat them, and so on.

Taking care of a forest is similar, though much more complex, since hundreds of species of plants and animals live there, each with different needs. A forest is a community, much like your own community, in which different people have different roles that help them meet their basic needs (food, clothing, water, and shelter). A community of people is made up of doctors, farmers, carpenters, resource managers, bakers, loggers, engineers, artists, teachers, firemen, and more. What would happen if there were no more farmers? Every job is important and contributes to the balance of the community.

People depend on a variety of forest resource and amenities from forests, including trees and their wood products. Every day, we use products made from trees; these trees came from our forest communities. When resource managers manage a forest well, they harvest trees carefully, in a way that provides wood for people to use, creates jobs, and maintains the forest's health. New trees grow to replace cut ones, and the forest community continues on.

The following activities will help prepare your students for the concepts/themes they will encounter during their visit to the Forest Discovery Trail.

Introductory activities for students

PLT activities

The following pages list PLT activities that help teach the core themes addressed at the Forest Discovery Trail. PLT materials are free of charge to teachers who take a low-cost, one-day training course. Contact your state's PLT coordinator to find out about upcoming workshops.

New Hampshire PLT:

- Phone: 603-226-0160
- Toll-free: 800-677-1499
- Email: info@nhplt.org
- Website: www.nhplt.org

Maine PLT

- Phone: 207-626-7990
- Email: meplt@gwi.net
- Website: <http://www.mainetreefoundation.org/programs/plt.html>

Forest Discovery Bingo

Use the *Forest Discovery Bingo* worksheet to help your students become aware of the variety of features, living and nonliving, within their local forest.

Correlations to NH Frameworks of Learning:

Science: Unifying Themes & Concepts 6a.

Correlations to ME Learning Results:

Science & Technology: B. Ecology.

Wood Wise

We use myriad forest products throughout each day, often unknowingly. Among the Project Learning Tree Fact Sheets included in this curriculum, you'll find one entitled, *How Do We Benefit From Our Forests?* This fact sheet lists many forest benefits. The Project Learning Tree High School Activity *What's A Forest to You?* lists even more, including many products students would never guess were derived from trees, from suntan lotion to chewing gum to baseballs.

Ask students to consider how they benefit from forests and then brainstorm answers. Discuss their answers as a class and fill in benefits that they may have overlooked. Have each student keep a journal for a day in which he/she lists all the forest-derived products the student uses during the day. Where did those wood products come from?

Correlations to NH Frameworks of Learning:

Social Studies: Economics 5.

Economics 9.

Science: Earth/Space Science 4c.

Correlations to ME Learning Results:

Science & Technology: B. Ecology.

Social Studies: Economics: Personal & Consumer Economics A.

Graphing forestland ownership

Maine has the highest percentage of forest land of any state in the country. New Hampshire has the second highest. Ask students who they think owns the forest land in their state. Using the *Graphing Forestland Ownership* handout, have students use pie charts and bar graphs to explore who owns our forests.

The *Who Owns NH's Forests?* fact sheet, included in this curriculum packet, offers an overview of New Hampshire's land ownership distribution. Maine teachers can download a similar fact sheet from Maine PLT's website, www.mainetreefoundation.org/programs/plt.html.

The University of New Hampshire hosts a website that allows you to view detailed maps of New Hampshire, whether you're interested in seeing an overview of the whole state or the details of a specific parcel. The maps show land ownership distribution and allow you to view aerial orthophoto and topographical overlays. You'll find this tool at <http://granitweb.sr.unh.us>.
(*This site requires a high-speed internet connection to generate maps.*)

Correlations to NH Frameworks of Learning:

Social Studies: Geography 10.

Geography 11.

Geography 15.

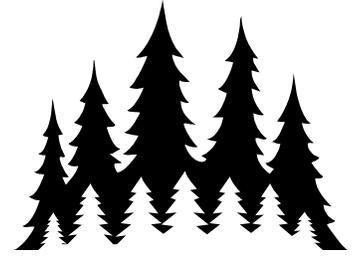
Science: Science, Technology & Society 2c.

Correlations to ME Learning Results:

Science & Technology: Inquiry & Problem Solving J.

Social Studies: Geography: Skills & Tools A.

Recommended Pre-visit PLT Activities Grades 5 through 8



Each recommended activity is correlated to the NH Curriculum Frameworks and the ME Learning Results. Abbreviated correlations are listed below. The full listing is available online at <http://www.plt.org>.

NOTE: The following abbreviations have been used in noting correlations.

Correlations to NH Frameworks of Learning:

Abbreviation: Science: Life Science 3b
Framework: Science: Life Science: Students will demonstrate an increasing ability to understand how environmental factors affect all living things (i.e. individuals, community, biome, the biosphere) as well as species interactions.

Abbreviation: Social Studies: Geography 14.
Framework: Social Studies: Geography: Students will demonstrate an understanding of the connections between Earth's physical and human systems; the consequences of the interaction between human and physical systems; and changes in the meaning, use, distribution, and importance of resources.

Correlations to ME Learning Results:

Abbreviation: Social Studies: Geography: A. Skills and Tools. MG (5-8). 1.
Learning Result: Social Studies. Geography.
A. Skills and Tools.
Middle Grades 5-8.
1. Visualize the globe and construct maps of the world and its sub-regions to identify patterns of human settlement, major physical features, and political divisions.

Abbreviation: English Language Arts: D. Informational Texts. MG (5-8). 6.
Learning Result: English Language Arts.
D. Informational Texts.
Middle Grades (5-8).
6. Describe new knowledge presented in informational texts and how it can be used.

Theme: Plants are physiological systems that are responsible for growth and reproduction.

#27: Every Tree for Itself

Try this activity to give your students an idea of the conditions that trees need to live and grow, and to help your students understand that trees must often compete for their needs.

Correlations to NH Frameworks of Learning:

Science: Life Science 3b.

Mathematics: Numbers, Numeration, Operations, and Number Theory 3c.

Correlations to ME Learning Results:

Science and Technology. B. Ecology. MG (5-8). 2.

#41: How Plants Grow

A plant is a biological system with these basic requirements for functioning and growing: sunlight, water, soil, and space. This activity allows students to explore what happens when a plant's basic needs are not met.

Correlations to NH Frameworks of Learning:

Science: Science, Technology & Society 1a, 2b.

Life Science 3b, 3c.

Mathematics: Communication & Connections 2b.

Geometry, Measurement, & Trigonometry 4c.

Data Analysis, Statistics & Probability 5a.

Correlations to ME Learning Results:

Mathematics: C. Data Analysis and Statistics. MG (5-8). 3.

Science and Technology: J. Inquiry and Problem Solving. MG (5-8). 2.

Theme: Ecosystems are composed of many interrelationships.

#8: Forest of S.T. Shrew

By taking a "shrew's-eye view" of life in the woods, your students will gain an appreciation for the variety of living things that make forests their homes, and for the variety of habitats within forests.

Correlations to NH Frameworks of Learning:

Science: Life Science 3b,

Life Science 3d.

Unifying Themes & Concepts 6a.

English Language Arts: Speaking, Listening & Viewing 3.

English Language Uses 6, 7.

Correlations to ME Learning Results:

Science and Technology: A. Classifying Life Forms. EG (3-4), 3.

English/Language Arts: E. Processes of Writing and Speaking. EG (PreK-2), 2.

G. Stylistic and Rhetorical Aspects of Writing and Speaking. EG (preK-2), 1.

- G. Stylistic and Rhetorical Aspects of Writing and Speaking. EG (3-4), 2.
- H. Research-Related Writing and Speaking. EG (3-4), 1.
- Visual and Performing Arts: A. Creative Expression. EG (PreK-2), 2.
- A. Creative Expression. EG (3-4), 4.

#22: Trees as Habitats

From their leafy branches to their tangled roots, trees provide a habitat for a host of plants and animals. In this activity, your students will discover how plants and animals depend on trees in many ways.

Correlations to NH Frameworks of Learning:

Science: Science, Technology & Society 2b.
Life Science 3b.

English Language Arts: Speaking, Listening & Viewing 3.
English Language Uses 6, 7.

Social Studies: Geography 14.

Mathematics: Communication & Connections 2b.
Data Analysis, Statistics & Probability 5a.

Correlations to ME Learning Results:

Mathematics: K. Mathematical Communication. MG (5-8). 2.

Science and Technology: J. Inquiry and Problem Solving. MG (5-8). 1.

Visual and Performing Arts: A. Creative Expression. MG (5-8). 4.

#23: Fallen Log

It's amazing how many things live in and on rotting logs. In this activity, your students will become familiar with some of those organisms. They'll gain an understanding of how decomposition takes place. And they'll gain a better appreciation for microhabitats and communities.

Correlations to NH Frameworks of Learning:

Science: Science, Technology & Society 2b.
Life Science 3b.

English Language Arts: Speaking, Listening & Viewing 3.
English Language Uses 6, 7.

#24: Nature's Recyclers

It's amazing how many organisms live off dead organic material and recycle those materials back into life. In this activity, your students will investigate the habits of one of these creatures. They will gain an understanding of how decomposition works and an appreciation for some of nature's less-heralded creatures.

Correlations to NH Frameworks of Learning:

Science: Science as Inquiry 1a.
Life Science 3b, 3c.

Language Arts: Speaking, Listening & Viewing 3.
English Language Uses 6, 7.

Correlations to ME Learning Results:

Science and Technology: J. Inquiry and Problem Solving. MG (5-8). 1.

#45: Web of Life (Variation: All Tied Up)

In this activity, students will take a close look at one particular ecosystem (a forest) and will discover the ways that plants and animals are connected to each other.

Correlations to NH Frameworks of Learning:

Science: Science, Technology & Society 2b.

Life Science 3a, 3b, 3c.

Unifying Themes & Concepts 6a, 6c.

English Language Arts: Speaking, Listening & Viewing 3.

English Language Uses 6, 7.

Correlations to ME Learning Results:

Science and Technology: B. Ecology. MG (5-8). 1.

English/Language Arts: E. Processes of Writing and Speaking. MG (5-8). 3.

H. Research-Related Writing and Speaking. MG (5-8). 6.

Visual and Performing Arts: A. Creative Expression. MG (5-8). 4.

Theme: Humans are involved in the management and conservation of natural resources.

#32: A Forest of Many Uses

Privately and publicly owned forests are often managed to some degree to provide several different resources. In this activity, students will learn how forests are managed to meet a variety of human and environmental needs.

Correlations to NH Frameworks of Learning:

Science: Life Science 3b.

Earth/Space Science 4c.

Social Studies: Geography 14.

Correlations to ME Learning Results:

Social Studies: Geography: B. Human Interaction with Environments. MG (5-8). 3.

#34: Who Works in This Forest

All kinds of people work in the forest – from forester to loggers, from scientists to naturalists. Everyone depends on properly managed forests for recreation, essential products, and a healthy environment. This activity provides students with an overview of forest-related careers.

Correlations to NH Frameworks of Learning:

Science: Science, Technology & Society 2f.

Life Science 3b.

Earth/Space Science 4c.

Social Studies: Geography 14, 15.

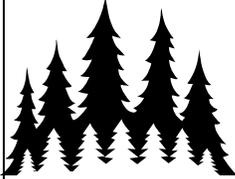
Correlations to ME Learning Results:

Science and Technology: K. Scientific Reasoning. MG (5-8). 6.

Forest Discovery Bingo



Be the first to find the following items.

3 snags (standing dead trees)	Something that is unnatural	The spot in the forest that gets the least sunlight	3 downed logs	Something that is growing
A tree that makes food for animals to eat	A leaf that has rough edges	Something that is living on something else	A hole where an animal might live	3 species of tree
The oldest thing in the forest	3 pieces of evidence that birds have been around		The spot in the forest that gets the most sunlight	A leaf that is decaying
Something that has 5 or more parts	The driest spot in the forest	A leaf that has smooth edges	The wettest spot in the forest	Something that doesn't belong in the forest
A leaf that has been eaten	The youngest thing in the forest	3 pieces of evidence that insects have been around	Something that is natural	3 pieces of evidence that a mammal has been around

Graphing Forestland Ownership



3. Using Data Set B, create a line graph of forest area over time.
 - a) In which year was the amount of forested land in New Hampshire
 - greatest?
 - least?
 - b) In which year was the amount of forested land in Maine
 - greatest?
 - least?
 - c) In which year was the amount of forested land in the United States
 - greatest?
 - least?
 - d) What similarities and differences do you notice between changes in the amount of forest area in New Hampshire, in Maine, and in the United States during this time period?

Graphing Forestland Ownership



Data Set A: Land area in Maine, New Hampshire, and the United States, acreage listed by total land area, and ownership category.

	Maine	New Hampshire	United States
Total acres	19,753 thousand acres	5,700 thousand acres	2,263,230 thousand acres
Total forested acres	17,699 thousand acres	4,818 thousand acres	748,923 thousand acres
Total forested acres owned by private individuals	9,281 thousand acres	3,267 thousand acres	363,381 thousand acres
Total forested acres owned by private industry	7,449 thousand acres	463 thousand acres	66,380 thousand acres
Total forested acres owned by government (local, county, state, and federal)	970 thousand acres	1,088 thousand acres	319,161 thousand acres
Total acres National Forest (included in government ownership)	40 thousand acres	717 thousand acres	148,456 thousand acres
Smith, Miles, Vissage and Pugh. 2002. <i>Forest Resources of the United States: A Technical Document Supporting the USDA Forest Service 2005 Update of the RPA Assessment</i> . U.S. Department of Agriculture Forest Service.			

Data Set B: Forest area in Maine, New Hampshire, and the United States between 1630 2002.

	Maine	New Hampshire	United States
1630	18,180 thousand acres	5,490 thousand acres	1,045,435 thousand acres
1907	14,900 thousand acres	3,500 thousand acres	759,140 thousand acres
1938	16,036 thousand acres	4,664 thousand acres	759,814 thousand acres
1953	17,088 thousand acres	4,848 thousand acres	756,167 thousand acres
1963	17,425 thousand acres	5,019 thousand acres	761,936 thousand acres
1977	17,718 thousand acres	5,014 thousand acres	743,633 thousand acres
1987	17,713 thousand acres	5,021 thousand acres	737,750 thousand acres
1997	17,711 thousand acres	4,955	746,958
2002	17,699 thousand acres	4,818	748,923
Smith, Miles, Vissage and Pugh. 2002. <i>Forest Resources of the United States: A Technical Document Supporting the USDA Forest Service 2005 Update of the RPA Assessment</i> . U.S. Department of Agriculture Forest Service.			

Note: 40 thousand acres = 40,000 acres
 17,699 thousand acres = 17,699,000 acres