

PROJECT LEARNING  
TREE<sup>®</sup> *AND* THE VERMONT  
FRAMEWORK OF STANDARDS

A Guide for Educators  
2006



Grades PreK-K

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Conservation Education-Vermont Project Learning Tree  
Vermont Department of Forests, Parks, and Recreation  
Agency of Natural Resources

[www.vtfpr.org/](http://www.vtfpr.org/)

call 802-241-3651 for information on Project Learning Tree or on the creation of this alignment

2006-VGA-P

# Project Learning Tree® and Vermont's Framework of Standards

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## **Project Learning Tree<sup>®</sup> and the Vermont Framework of Standards**

***What It Is-*** Project Learning Tree<sup>®</sup> (PLT) is a multi-disciplinary environmental education curriculum resource with nearly 100 activities tailored to grade levels and learning objectives. The program's activity guide is based on a conceptual framework. The main guide contains activities appropriate for grades Prek-8 with activities arranged thematically. PLT materials are used in every US state, Canada, Mexico, Japan, the Philippines, and several European countries.

*Secondary level modules* appropriate for grades 6-12 are available on specific topics. These include: forest ecology, environmental issues, municipal solid waste, environmental risk, and placed-based (community) issues related to natural resources. In addition, PLT has a multi-media kit on "Energy and Society" appropriate for elementary students, and a community service piece entitled "Greenworks!" that is connected to a grants program for schools.

PLT materials are distributed in Vermont by the Department of Forests, Parks, and Recreation. Educators can attend 6-hour workshops that provide them with the activity guide or shorter workshops for the modules and kits. The workshops offer other valuable resources such as posters, booklets and Vermont-specific materials in addition to PLT.

***Framework Correlations-*** Vermont Project Learning Tree has developed correlations with the Project Learning Tree Prek-8 Activity Guide and the Project Learning Tree Secondary materials to help educators who wish to use the materials to address these new standards. PLT aligns Particularly well with Fields of Study elements in Social Studies & History, and Science. But it has strong correlations in Vital Results Standards for Sustainability (3.9) and Continuity and Change (4.5), and Understanding Place (4.6). The activities link to other Vital Results standards as well. For example, each activity includes a literacy connection and suggestions for activities for technology applications.

***New Natural Resources and Agriculture Standards-***In September of 2005, the Vermont State Board of Education adopted new wording for 7.16, a Standard in the Design and Technology portion of the Vermont

Framework of Standards and Learning Opportunities. This standard was added to the Science Framework, with the understanding that Grade Expectations will be developed for them in the future. The alignment in this document will be revised to conform to the Grade Expectations when they are completed and will be broken out into several documents to reflect grade levels. Until then, the correlations will cover the three basic grade ranges used in the main Framework document.

***Assessment and Learning Opportunities***– Each activity includes suggestions for student assessment of that activity and ideas for extensions and/or enrichment.

For more information about PLT and its mission, log onto [www.plt.org](http://www.plt.org)

**To schedule a PLT workshop in your community, or get more information about trees and forests in Vermont, call 802-241-365**

## **PLT Connections to Instruction, Literacy and Technology All Grade Levels**

### ***Differentiated Instruction***

PLT Activities apply Best Practices for instruction through differentiation techniques that are listed in the front of each activity for ease in use. These include:

- Highlighting key vocabulary.
- Creating links to prior knowledge.
- Using paired/cooperative learning.
- Providing nonlinguistic representations.
- Using realia and hands-on learning.
- Making curricular and personal connections.
- Developing oral, reading, and writing skills.
- Incorporating higher order thinking opportunities.

### ***Literacy/Reading***

Each activity listed in the Guides include suggested “Reading Connections.” These are fiction and nonfiction books that include:

Folktales, myths/legends, poetry, chants/songs, maps and charts, and content –based books and articles that relate to culturally-diverse topics and include global connections.

Some PLT activities include “read-aloud” sections. There are opportunities for writing, role playing and vocabulary building. The Guide contains an excellent glossary with a variety of words essential for building environmental literacy skills.

PLT offers teachers a reading list on-line at [www.plt.org](http://www.plt.org) that is correlated to the activities in the guide. PLT’s web site makes some of these materials available for on-line purchase, giving educators an easy way to acquire the materials.

### ***Technology***

PLT recognizes the importance of technology at the same time it advocates strongly for outdoor student experiences learning in the natural world. The activity planning sections point out appropriate technology opportunities in applicable activities. One appendix in the guide is devoted to technology tips including ethical considerations when using web-based research.

## **Project Learning Tree® Alignment With Vermont’s Framework of Standards**

### ***Vital Results***

### **Sustainability**

- 3.9 Students make decisions that demonstrate understanding of natural and human communities, the ecological, economic, political, or social systems within them, and awareness of how their personal and collective actions affect the sustainability of these interrelated systems. This is evident when students:

<b>Prek-4</b>
3.9.a. Identify items that they consume on a daily basis and analyze the resources used in producing, transporting, using, and disposing of these items, including the origins of the resources;
3.9.b. Distinguish between personal wants and needs and identify how marketing and advertising inform their consumption patterns;
3.9.c. Identify and practice ways to repair, re-use, recycle, and (e.g., use both sides of paper), and design and implement a plan to monitor personal resource consumption;
3.9.d. Explore local natural and human communities (e.g., vernal pools, farms, mines, cities), identify the systems within them, and what is required for these communities to be sustained.

**PLT Activities from PreK-8 Guide that correlate with 3.9:**

**Grades Pre-K.** 13. *We all Need Trees*, 15. *A Few of My Favorite Things*, 16. *Pass the Plants, Please*, 41. *How Plants Grow* 46. *School Yard Safari* 74. *People, Places, Things*, 87. *Earth Manners*, 81. *Living With Fire*, 95. *Did You Notice?*

**Continuity and Change**

4.5 Students understand continuity and change. This is evident when students:

<b>Prek-4</b>
4.5.a. Demonstrate understanding that change results from new knowledge and events; and
4.5.b. Demonstrate understanding of the patterns of change (steady, cyclic, irregular) and constancy.

**PLT Activities from Prek-8 Guide that correlate with 4.5:**

1. *The Shape of Things*, 2. *Get in Touch With Trees*, 21. *Adopt a Tree*, 78. *Signs of Fall*, 79. *Tree Lifecycle*, 81. *Living With Fire*, *Earth Manners*

**Understanding Place**

4.6 Students demonstrate understanding of the relationship between their local environment and community heritage and how each shapes their lives. This is evident when students:

<b>Prek-4</b>
4.6.a. Demonstrate knowledge and history of local environments, (e.g., soils, forests, watersheds) and how their community relies on its environment to meet its needs (e.g., nutritional, recreational, economic, emotional well being);
4.6.b. Describe the role of agriculture, forestry, and industry on the development of their local community over time;
4.6.c. Demonstrate knowledge of past and present community heritage (e.g., traditions, livelihoods, customs, stories, changing demographics, land use) and recognize ways in which this heritage influences their lives.

**PLT Activities K from Prek-8 Guide that correlate with 4.6:**

**Grades PreK-4.** 1. *Shape of Things*, 2. *Get in Touch with Trees*, 3. *Peppermint Beetle*, 4. *Sounds Around*, 5. *Poet-Tree*, 20. *Environmental Exchange Box*, 21. *Adopt a Tree*, 32., *A Forest of Many Uses*, 43. *Who Works in this Forest?*, 45. *Web of Life*, 46. *Schoolyard Safari*, 53. *On the Move*, 54. *I'd Like to Visit a Place Where---*. 55. *Planning the Ideal Community*, 69. *Forest For the Trees*, 74. *People, Places, Things*, 87. *Earth Manners*

# H&SS-PK-K: PLT Alignment with GE's for Social Studies & History Inquiry

<b>H&amp;SSPK-K:1</b>	<b>Students initiate an inquiry by...</b> <ul style="list-style-type: none"> <li>Developing a question by completing prompts, "I wonder...?", "Why...?", "How is this like...?"</li> </ul>
<b>H&amp;SSPK-K:2</b>	<b>Students develop a hypothesis, thesis, or research statement by...</b> <ul style="list-style-type: none"> <li>Sharing ideas about possible answers to questions (e.g., What might we see on a field trip to a factory?).</li> </ul> <hr/> <p><i>Combined H&amp;SSPK-K, PLT Activities that Address these Skills- 4. Sounds Around, 3. Peppermint Beetle, 25. Birds and Worms ,22. Trees as Habitats, 27. Every Tree for Itself, 31. Plant A Tree, 41. How Plants Grow, 47. Are Vacant Lots Vacant?</i></p>
<b>H&amp;SSPK-K:3</b>	<b>Students design research by...</b> <ul style="list-style-type: none"> <li>Identifying resources for finding answers to their questions (e.g., books, videos, and people).</li> <li>Explaining what their jobs will be during an inquiry investigation (e.g., drawing pictures after a field trip).</li> <li>Identifying ways they will show what they have learned.</li> </ul>
<b>H&amp;SSPK-K:4</b>	<b>Students conduct research by...</b> <ul style="list-style-type: none"> <li>Following directions to complete an inquiry.</li> <li>Asking questions and observing during the investigation process.</li> <li>Recording observations with words, numbers, symbols, and/or pictures (e.g., drawing or labeling a diagram, creating a title for a drawing or diagram, recording data provided by the teacher in a table).</li> </ul> <hr/> <p><i>Combined H&amp;SSPK-K:3 and 4- PLT Activities that Address these Skills- 20.Environmental Exchange Box, 22. Trees as Habitats, 25. Birds and Worms ,27. Every Tree for Itself, 31. Plant A Tree, 41. How Plants Grow, 43. Have Seeds, Will Travel, 47. Are Vacant Lots Vacant? 65. Bursting Buds, 70. Soil Stories, , 78. Signs of Fall, 79. Tree Lifecycle, 81. Living With Fire</i></p>
<b>H&amp;SSPK-K:5</b>	<b>Students develop reasonable explanations that support the research statement by...</b> <ul style="list-style-type: none"> <li>Organizing and displaying information (e.g., table, chart, graph).</li> <li>Analyzing evidence (e.g., sorting objects, justifying groupings, role playing).</li> </ul>
<b>H&amp;SSPK-K:6</b>	<b>Students make connections to research by...</b> <ul style="list-style-type: none"> <li>Discussing if their findings answered their research question.</li> <li>Proposing solutions to problems and asking other questions.</li> </ul>
<b>H&amp;SSPK-K:7</b>	<b>Students communicate their findings by...</b> <ul style="list-style-type: none"> <li>Speaking, using pictures (e.g., sharing ideas or artifacts with classmates) or writing a story or letter by dictating ideas to a teacher.</li> </ul> <hr/> <p><i>PLT Activities that Address these Skills-20.Environmental Exchange Box, 25. Birds;</i></p>



*and Worms ,27. Every Tree for Itself, 31. Plant A Tree,41. How Plants Grow, 47. Are Vacant Lots Vacant? 66. Germinating Giants.*

<p><b>H&amp;SSPK-K:14</b></p>	<p><b>Students act as citizens by...</b></p> <ul style="list-style-type: none"> <li>• Identifying various groups that they belong to (e.g., I'm a part of a family, I'm a part of a class, I'm a part of a school, etc.).</li> <li>• Demonstrating positive interaction with group members (e.g., sharing play space).</li> <li>• Contributing to the life of the class and the school.</li> </ul> <hr/> <p><i>PLT Activities: 54. I'd Like to Visit A Place where---55. Planning the Ideal Community, 74. People Places, Things, 87. Earth Manners, 95. Did You Notice?</i></p>
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<p><b>H&amp;SSPK-K:15</b></p>	<p><b>Students show understanding of various forms of government by...</b></p> <ul style="list-style-type: none"> <li>• Identifying the need for rules in a variety of settings, and demonstrating appropriate behavior in a variety of settings (e.g., classroom, playground, field trip).</li> <li>• Explaining that rules are established for the benefit of individuals and groups.</li> <li>• Identifying authority figures who make, apply, and enforce rules (e.g., at home, in the family, school personnel, police, firefighters, etc.), and how these people help to meet the needs of the people in the community.</li> </ul> <hr/> <p><i>PLT Activities: 54. I'd Like to Visit A Place where---55. Planning the Ideal Community, 74. People Places, Things, 87. Earth Manners, 95. Did You Notice?</i></p>
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<p><b>H&amp;SSPK-K:16</b></p>	<p><b>Students examine how different societies address issues of human interdependence by...</b></p> <ul style="list-style-type: none"> <li>• Practicing communication skills with individuals and groups.</li> <li>• Identifying feelings that might lead to conflict (e.g., what happens when two people want the same thing?).</li> </ul>
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<p><b>H&amp;SSPK-K:17</b></p>	<p><b>Students examine how access to various institutions affects justice, reward, and power by...</b></p> <ul style="list-style-type: none"> <li>• Naming various social, economic, and governmental institutions in their community (e.g., schools, churches, post office, grocery store, etc.).</li> </ul> <hr/> <p><i>PLT Activities: 54. I'd Like to Visit A Place where---55. Planning the Ideal Community, 74. People Places, Things, , 95. Did You Notice?</i></p>
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<p><b>H&amp;SSPK-K:12</b></p>	<p><b>Students show understanding of human interaction with the environment over time by...</b></p> <ul style="list-style-type: none"> <li>• Identifying ways in which they take care of or hurt the environment (e.g., recycling vs. littering, planting trees and flowers).</li> <li>• Identifying ways in which they adapt to their physical environment (e.g., dressing for seasonal weather, outdoor play opportunities).</li> </ul> <hr/> <p><i>PK-K:3 and 4- PLT Activities that Address these Skills- 13. We All Need Trees, 21. Adopt a Tree, 22. Trees as Habitats ,27. Every Tree for Itself, 31. Plant A Tree, 36. Pollution Search, 41. How Plants Grow, 43. Have Seeds, Will Travel, 47. Are Vacant Lots Vacant? 65. Bursting Buds, 70. Soil Stories, 74. People, Places, Things, 78. Signs of Fall, 79. Tree Lifecycle, 81. Living With Fir, 87. Earth Manner</i></p>
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## Science and Math: Grade Expectations for Grades Pre-K-K: Inquiry

### Scientific Questioning

#### SPK-K:1

**Students demonstrate their understanding of SCIENTIFIC QUESTIONING by...**

- Developing a question by completing the prompt, “I wonder.. .?” **AND**
- Demonstrating a “questioning mind” through extended, intentional (purposeful) interactions with materials or people; Experiments with possibilities.

### Predicting and Hypothesizing

#### SPK-K:2

**Students demonstrate their understanding of PREDICTING AND HYPOTHESIZING by...**

- Stating ideas about what may happen or be observed in the future (e.g., Student thinks ahead).

SPK-K-1&2, *PLT Activities that Address these Skills*- 3. Peppermint Beetle, 25. Birds and Worms ,22. Trees as Habitats, 27. Every Tree for Itself, 31. Plant A Tree, 41. How Plants Grow, 47. Are Vacant Lots Vacant?

### Designing Experiments

#### SPK-K:3

**Students demonstrate their understanding of EXPERIMENTAL DESIGN by...**

- Explaining the process of an investigation before and during the process (e.g., “on the job” planning, investigating, and explaining can happen simultaneously). **AND**
- Using procedures that are safe and humane.

### Conducting Experiments

#### SPK-K:4

**Students demonstrate their ability to CONDUCT EXPERIMENTS by...**

- Using more than one of the senses to make observations. **AND**
- Describing obvious features of an object or event. **AND**
- Representing data in a variety of ways including words, numbers, symbols, and pictures **AND**
- Drawing scientifically:
  - a. Recording shapes, prominent features with supporting details (e.g., eyelashes on eyes), and color.
  - b. Spatially organizing and differentiating significant parts observed.
  - c. Adding essential information to a diagram provided by the teacher.

- d. Using simple equipment and nonstandard measurement tools to gather data and extend the senses (e.g., balances, scales, counters, magnifiers).
- e. Following teacher guidance to complete steps while investigating a question.

PK-K:3 and 4- ***PLT Activities that Address these Skills***-20. *Environmental Exchange Box, 22. Trees as Habitats, 25. Birds and Worms, 27. Every Tree for Itself, 31. Plant A Tree, 41. How Plants Grow, 43. Have Seeds, Will Travel, 47. Are Vacant Lots Vacant? 65. Bursting Buds, 70. Soil Stories, , 78. Signs of Fall, 79. Tree Lifecycle, 81. Living With Fire*

**Representing Data and Analysis**

**SPK-K:5**

**Students demonstrate their ability to REPRESENT DATA by...**

- Organizing a piece of data (measurement or observation) or a group representation (e.g., pictograph, bar graph, or chart).

**Representing Data and Analysis**

**SPK-K:6**

**Students demonstrate their ability to ANALYZE DATA by...**

- Sorting objects based upon current observations and justifying groupings.

**SPK-K:7**

**Students demonstrate their ability to EXPLAIN DATA by...**

- Explaining observations with the support of material props, photographs, drawings, or diagrams.

**Applying Results**

**SPK-K:8**

**Students demonstrate their ability to APPLY RESULTS by...**

- Identifying similarities between past experiences and current investigations.

***PLT Activities that Address these Skills***-20. *Environmental Exchange Box, 25. Birds and Worms, 27. Every Tree for Itself, 31. Plant A Tree, 41. How Plants Grow, 47. Are Vacant Lots Vacant? 66. Germinating Giants.*

**Grade Expectations for Grades Pre-K-K: Physical Science**

<p><b>SPK-K:9</b>  <b>Students demonstrate their understanding of the Properties of Matter by...</b>          · Observing and sorting substances that are solids and liquids and identifying their differences.</p>	<p>Science Concepts:          a. The physical properties of objects can be sorted by how they are alike or different.          b. Objects can be sorted according to their properties.</p>
<p><b><i>PLT Activities:</i></b> 1. <i>The Shape of Things</i>, 2. <i>Get in Touch With Trees</i>, 6. <i>Picture This</i>, 64. <i>Looking At Leaves</i></p>	
<p><b>SPK-K :23</b>  <b>Students demonstrate their understanding of Heat</b></p>	<p>Science Concepts:          a. The sun warms the land, air and water.</p>

<b>Energy by..</b> · Identifying the sun as a source of heat energy.	
<i>PLT Activities : 18. Tale of the Sun, 81. Living With Fire.</i>	

## Grade Expectations for Grades Pre-K-K: Life Science

<b>SPK-K:30</b> <b>Students demonstrate their understanding of Structure and Function–Survival Requirements by...</b> • Observing and recording what happens when food and water are given to living and non-living things.	Science Concept: a. There are differences between living and non-living things.
<i>PLT Activities: 13. We All Need Trees, 21. Adopt a Tree, 27. Every Tree For Itself</i>	
<b>SPK-K:34</b> <b>Students demonstrate their understanding of Energy Flow in an Ecosystem by...</b> • Caring for plants and animals by identifying and providing for their needs.	Science Concept: a. Plants and animals both need water, food and air.
<i>PLT Activities: 41. How Plants Grow, 43. Have Seeds, Will Travel</i>	
<b>SPK-K:38</b> <b>Students demonstrate their understanding of Classification of Organisms by...</b> • Sorting and identifying examples of plants and animals.	Science Concept: a. Some living things (organisms) are identified as plants or animals.
<i>SPK-K PLT Activities: 1. The Shape of Things, 2. Get in Touch With Trees, 6. Picture This! 13. We All Need Trees, 16. Pass the Plants, Please, 22. Trees as Habitats, 41. How Plants Grow, 43. Have Seeds, Will Travel, 46. School Yard Safari</i>	

## Grade Expectations for Grades Pre-K-K: Human Body

<b>SPK-K:41</b> <b>Students demonstrate their understanding of Human Body Systems by...</b> • Identifying the five senses and using the senses to identify objects in their environment.	Science Concepts: a. People use their senses to find out about their surroundings and themselves. Different senses give different information
<i>PLT Activities: 1. The Shape of Things, 2. Sounds Around, 3. Peppermint Beetle, 20. Environmental Exchange Box, 61. The Closer You Look, 64. Looking At Leaves, 78. Signs of Fall</i>	

## Grade Expectations for Grades Pre-K-K: Universe, Earth, Environment

<b>SPK-K:46</b> <b>Students demonstrate their understanding of Processes and Change over Time within Earth Systems by...</b> • Sorting and recognizing similarities and differences in a variety of rocks (from boulders to grains of sand).	Science Concepts: a. Chunks of rocks come in many sizes and shapes, from boulders to grains of sand and even smaller.
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<p><b>PLT Activities:</b> 70. <i>Soil Stories</i>,</p>	
<p><b>SPK-K:49</b>  <b>Students demonstrate their understanding of Processes and Change within Natural Resources by...</b></p> <ul style="list-style-type: none"> <li>• Identifying items that students consume on a daily basis (e.g., food, fiber, paper, wool or wood).</li> </ul>	<p>Science Concepts:  a. Natural Resources are materials that we obtain from the living and non-living environment.</p>
<p><i>PLT Activities:</i> 2. <i>Get in Touch With Trees</i>, 13. <i>We All Need Trees</i>, 16. <i>Pass the Plants, Please</i>, 62. <i>To Be A Tree</i>, 70.. <i>Soil Stories</i>, , 74. <i>People, Places, Things</i>, 87. <i>Earth Manners</i>, 95. <i>Did You Notice?</i></p>	

## Project Learning Tree Correlations 2006 (GE's Not Yet Developed)

### Natural Resources and Agriculture

PreK-4

#### Natural Resources and Agriculture

7.16 Students demonstrate an understanding of natural resources and agricultural systems why and how they are managed.  
evident when students:

**a. PreK-K Activities-** 2. Get in Touch With Trees, 6. Picture This! 13. We All Need Trees, 16. Pass the Plants, Please, 20. Environmental Exchange Box, 22. Trees as Habitats, 27. Every Tree For Itself, 39. Energy Sleuths, 41. How Plants Grow, 43. Have Seeds, Will Travel, 46. Schoolyard Safari, 55. Planning the Ideal Community, 62. To Be A Tree, 63. Tree Factory, 74. People, Places, Things, 79. Tree Life Cycle

**b. Identify the:** benefits of agriculture and natural resources (e.g., **public health, public welfare**, recreation, safe food.

**b. PreK-K Activities-** 13. We All Need Trees, 16. Pass the Plants, Please, 22. Trees as Habitats, 41. How Plants Grow,, 43. Have Seeds, Will Travel,, 70. Soil Stories, 78. Signs of Fall, 79. Tree Life Cycle, , 87. Earth Manners

**c.÷ Identify actions individuals and families can take to help manage natural resources and agriculture (e.g., walking on established trails, fishing and hunting in season, picking up litter, recycling, purchasing locally grown agricultural products).**

**c. PreK-K Activities-**4. Sounds Around, 15. A Few of My Favorite Things, 16. Pass the Plants, Please, 22. Trees as Habitats, 27. Every Tree For Itself, . 27. Every Tree for Itself, 28. Air Plants , 30. Three Cheers For Trees, 31. Plant a Tree, 32. A Forest of Many Uses, 36.Pollution Search, 38. Every Drop Counts, 39. Energy Sleuths, 41. How Plants Grow, 42. Sunlight and Shades of Green, 43. Have Seeds, Will Travel, 48. Field, forest, and Stream, 77. Trees in Trouble, 81. Living With Fire, 82. Resource-Go-Round,