What is PLT?

Project Learning Tree (PLT) is an award-winning environmental education program designed for educators working with students from pre-kindergarten through twelfth grade. PLT helps students learn about the world around them, their place within that world, and their responsibility for it. Through its many hands-on activities, PLT helps students become:

- personally aware of their presence in the environment;
- personally aware of the multiple values of natural resources, including ecological, economic, cultural, and societal;
- better able to understand their impact on and responsibility to the environment;
- equipped with the skills and knowledge to make informed decisions regarding the management and use of the environment; and
- increasingly confident in their ability to take action on their decisions.

PLT is designed to work in rural, suburban, and urban areas; in formal and nonformal educational settings; and both indoors and outdoors. The PLT activities emphasize conceptual learning and skill building and use effective, student-centered, instructional strategies, such as hands-on and cooperative learning, multiple intelligences, and others.

An Elementary activity guide is available for educators for grades PreK-8. Also available for these grades is an Energy & Society module, which provides information and activities about energy and supplements the PreK-8 guide. Secondary modules on the topics of forest ecology, forest issues, municipal solid waste, and risk, are available for educators of grades 9-12. Additional secondary module topics now in development include biodiversity, world forest ecology, and building sustainable communities.) The PLT activity guides and modules are not for sale, but are provided free or at a nominal charge to educators when they participate in a PLT workshop.

PLT promotes the *process* of education and advocates sound principles of teaching. The activities encourage educators to provide students with opportunities to gather information, communicate, cooperate, assess values, solve problems, and use critical thinking skills. Because

many PLT activities are hands-on and invite students to APPLY their knowledge and skills, educators can use them as evidence of students' learning and practice for "performance-based" assessments.

PLT is balanced on value-sensitive topics. It is especially important for workshop facilitators to keep this in mind and always maintain a balanced perspective in facilitation. The PLT activities and materials are designed to treat issues fairly and do not advocate any one particular point of view. PLT recognizes that people need information from a variety of sources in order to make their own informed decisions.

PLT's Mission

PLT uses the forest as a "window on the world" to increase students' understanding of our complex environment; to stimulate critical and creative thinking; to develop the ability to make informed decisions on environmental issues; and to instill the confidence and commitment to take responsible action on behalf of the environment.

PLT's Goals

PLT's goals are to:

- Provide students with the awareness, appreciation, understanding, skills, and commitment to address environmental issues.

- Enable students to apply scientific processes and higher order thinking skills to resolve environmental problems.

- Help students acquire an appreciation and tolerance of diverse viewpoints on environmental issues, and develop attitudes and actions based on analysis and evaluation of the available information.

- Encourage creativity, originality, and flexibility to resolve environmental problems and issues.

- Inspire and empower students to become responsible, productive, and participatory members of society.

The Five Themes

The PLT conceptual framework is built around five major themes: Diversity, Interrelationships, Systems, Structure and Scale, and Patterns of Change. (The conceptual framework can be found in the PreK-8 Activity Guide on page 375, in all of the Secondary Modules, and in Appendix G of this document on page **xx**.) Each theme covers the areas of Environment, Resource Management & Technology, and Society & Culture. PLT activities integrate the themes within science, language arts, social studies, art, music, and physical education.

The conceptual framework lets the users of this program know what kinds of knowledge students can expect to acquire while participating in PLT activities. Without a conceptual framework, the activities in the PreK-8 guide and secondary modules have no real purpose or direction. Anyone can do fun things, but teachers have to actually teach something while doing these fun things. The framework provides the structure, direction, and purpose for the activities. Though conceptual frameworks are provided, educators may develop their own frameworks based on the curricula already in place in their classrooms. It is important to remember that PLT's materials are supplementary, and as such, can and should be adapted as needed to best suit the needs of the teacher.

Although the guide contains in-depth information on specific topics, it is not designed to be an all-inclusive or comprehensive curriculum. Teachers are encouraged to fill in any gaps that they perceive with content (newspaper clippings, brochures, and other supplemental information) that relates to their community, expertise, or interests.

Appropriate activities can be used as thematic, conceptual, or storyline units. Each activity can also be used individually to teach a particular topic or reinforce the concepts indicated on the activity.

Following is a description of the five PLT themes:

1. ***Diversity***--demonstrating the wide array of habitats, societies, technologies, and cultures.

2. ***Interrelationships--***highlighting ecological, technological, and social-cultural systems as interactive and interdependent.

3. ***Systems--***teaching how environmental, technological and social systems are interconnected.

4. ***Structure and Scale--***demonstrating how technologies, societal institutions, and components of natural and human-built environments vary.

5. ***Patterns of Change--***showing how structures and systems change over time.

The knowledge that students acquire is not limited to the knowledge that is described in this conceptual framework. Teachers may choose to add other concepts and generalizations as they see fit through the use of variations or by providing a different emphasis.

Constructivism and Whole Language

Central to the curriculum activities is an emphasis on constructivist learning theory and whole language teaching strategies.

Constructivism is based on the principle that students construct new understandings by combining previous understandings with new discoveries. Constructivism, also known as constructivist learning, is the learning philosophy that has been guiding the revision of today's education. Its teaching-learning strategies are aligned with how educational researchers now believe students learn best.

In contrast to more "traditional" classroom instruction, which emphasizes that students learn because teachers teach, the responsibility for learning lies with the student. Educators are responsible for facilitating learning experiences which enable students to manipulate materials, consider points of view, participate in group work, and focus on learning concepts.

Using this technique, PLT teachers can guide their students toward new discovery and scientific understanding while helping them develop critical thinking and creative problem solving skills. *See Appendix H for Constructivism: A List of Teaching Strategies.*

PLT activities are designed using a constructivist approach: Each activity guides the student through a process that begins with awareness, moves students toward understanding, enables them to challenge preconceived notions, and motivates them to seek constructive avenues for environmental action. For example, step one in the activity is designed to create student awareness and find out what students already know about the topic. It serves as the "hook"

to develop their interest. Step two develops their knowledge and skills. Step three challenges their preconceived notions about the topic, helps them come to consensus, or builds new knowledge. Finally, step four encourages them and provides ideas on how they can take positive action regarding the new information and knowledge they have gained on this topic. The final step may also show how they can apply this new learning to other situations.

Whole language, teaching holistically rather than in "bits" and "pieces", allows teachers to integrate connecting themes, conceptual understandings and critical thinking skills rather than simple transfer of bits of information. In this way, students can engage in writing and oral language activities related to experiential learning.
Teachers who successfully employ the constructivist and whole language theories to the PLT curriculum can maximize effective teaching strategies including cooperative learning--team or group approaches to learning--and problem solving--identifying problems, determining desired outcomes and testing solutions.

Using these approaches, teachers will find that PLT activities can guide learners through the process of awareness, understanding, challenge, motivation, and action using active involvement and hands-on experience.

History of PLT

The PLT program began in the mid-1970s as a joint venture between the American Forest Institute (AFI), a forest products industry trade association dedicated to improving the management of America's forests, and the Western Regional Environmental Education Council (WREEC), a non-profit organization composed of representatives from state departments of education and natural resources agencies from 13 western states. The founders of PLT had an idea for developing an effective environmental education program. To build an effective program, the founders established two goals. The first goal was to design an environmental education program that would gain the confidence of the education community—educators must like it, trust it, and use it. The second goal was to develop partnerships between public and private sectors that ensured the curriculum was balanced, fair, and accurate—and that the curriculum encouraged students to consider all sides and factors when making decisions about the environment. In addition to creating quality materials, they also created a system of implementation. They believed that for the

curriculum to be used effectively, it should only be available through workshops.

The first edition of the PLT materials was published in 1976. They were developed by a team of writers and were thoroughly tested and evaluated. Two activity guides were available, one for K-6 grade educators and one for 7-12 grade educators. Those two guides were in use until 1993 when the materials were revised into the current PreK-8 Activity Guide and topic-specific secondary modules.

Today, Project Learning Tree is one of the most widely used preK-12 environmental education programs in the United States and abroad. PLT is available in all 50 states and the District of Columbia, as well as in several U.S. territories. It has also been formally adopted in Brazil, Canada, Chile, Finland, Japan, Mexico, Philippines, and Sweden – and is informally used in a host of other countries. It has a nationwide network of nearly 100 State Coordinators, each of whom implement PLT through a variety of different organizations and agencies in their respective states, and more than 2,500 volunteer workshop facilitators. Through workshops, more than a quarter of a million educators have received PLT and, in turn, have reached millions of young people.

PLT owes much of its success to its original development through the cooperative efforts of the industrial, scientific, and education communities. Through its commitment to balanced environmental education, PLT has enjoyed the continued full support of these communities.

Administration and Sponsors

Today, PLT is administered nationally by the American Forest Foundation (AFF) AFF is a 501(c)(3) charitable education foundation supported by grants from individuals, foundations, and industries. PLT's partners include the Council for Environmental Education (CEE), the National Association of Conservation Districts, Society of American Foresters, the USDA Forest Service, the USDI Bureau of Land Management, the National Association of State Foresters, the National Association of Professional Forestry Schools and Colleges, and the World Forestry Center to name just a few.

In **Alaska,** PLT coordination and implementation is supported by the **Alaska State Division of Forestry of the Department of Natural Resources.**

Funding for educator workshops varies from state to state and program to program, but typically is provided through the support of individual agencies, school districts, private organizations, and participant workshop fees. The PLT activity guides and other support materials are provided by the **Division of Forestry.**

Associated Programs

Building on the success of PLT, WREEC (now CEE) developed a similar program in the 1983 that uses wildlife as a focus for teaching environmental principles. This program, Project WILD, has also been tremendously successful in the United States and abroad. Recently, WREEC became the cosponsor for Project WET, an environmental education program created in 1991 designed to promote the stewardship of water resources.

Evaluating PLT

After serving as one of the most widely used environmental education programs in the nation for over 20 years, the Project Learning Tree Education Advisory Board and the PLT staff decided that it was time to take a careful look at the PLT Activity Guides in order to ensure that PLT continued to serve as a premier environmental curriculum. Thus, an extensive multi-year revision process was initiated in 1990 with a survey of more than 50,000 teachers, environmental educators, teams of scientists, natural resource managers and technical specialists. Over 3,000 students from across the nation participated in the formal evaluation of the new curriculum.

The Evaluation Process

In planning the evaluation of PLT, the advisory board and the national staff wanted to ensure that the evaluation design represented the "state-of-the-art" in evaluation studies. Thus, in addition to a summative evaluation, the PLT evaluation design also included a planning evaluation and a formative evaluation.

The ***"planning evaluation"*** helped to answer such questions as: Who should be involved in the revision of PLT? How should the revision process be done? What should the new PLT activity guide look like? What educational philosophy should be emphasized? Should the curriculum framework be revised? If yes, how? As a result of the planning evaluation, it was agreed that high on the list of key characteristics of the "new" PLT would be: teaching children "how to think, not what to think;" developing higher order thinking skills, critical thinking skills, problem-solving skills, and decision-making skills; the use of "state-of-the-art" teaching philosophy and strategies relying on constructivist learning theory, cooperative learning, case studies; and, activities that actively involve students in the teaching/learning process.

In order to assess the ongoing activities of the revision, a ***"formative evaluation"*** was initiated at the beginning of the evaluation process and was continued throughout the life of the project. This component of evaluation provided evaluative information on an on-going basis to improve both the process and the end product as well. Writing workshops were conducted which involved hundreds of PLT teachers, coordinators, and environmental education leaders. After content reviews, and accuracy reviews, the new PLT was then pilot tested by educators across the country. (Pilot testing involves teachers administering the activities with their students and providing feedback to the PLT curriculum staff and evaluator as to what worked and what did not work.) The purpose of the pilot test was to make sure that the new PLT actually worked in the "real world." On the basis of the pilot test results, the new PLT was revised again and the evaluation process then moved into the third and final phase.

The ***"summative evaluation"*** stage was to formally evaluate the effectiveness of the "end product" -- the new PLT in the classroom. This field test was conducted to determine if the new PLT was meeting the goals and objectives established for the program and whether or not the students who participated in the program benefited from it. (Field testing involves the formal evaluation of the activities including pre-test, implementing the activities, and post-test; control groups are used for comparisons.) Both qualitative and quantitative data were collected to assess the overall effectiveness of the new PLT.

The results of this extensive and comprehensive evaluation indicated that the new PLT program works! PLT **can** be an effective program for increasing environmental knowledge and effecting positive attitudinal growth in students in grades PreK through 12. In addition, teachers

who complete at least one PLT Educator Training Workshop, and who implement the new PLT activities as intended, are likely to observe knowledge gains and attitudinal change in their students. This appears to be particularly true when students are exposed to a series of new PLT activities over a relatively short period of time.

Awards and Endorsements

In 1985, President Ronald Reagan presented the prestigious President's Citation Program "Crystal Award" to the American Forest Foundation. This award recognized PLT as an outstanding private sector initiative.

PLT has also received other awards and recognition over the years from:

- North American Association for Environmental Education
- The National Arbor Day Foundation
- The Conservation Education Association
- National Wildlife Federation, and its affiliate, the California Natural Resources Federation
- National Association for Industry-Education Cooperation
- American Society of Association Executive
- Keep America Beautiful
- Solid Waste Association of North America