



# SOUTH CAROLINA PROJECT LEARNING TREE

## **Facilitator Handbook**

Revised 2020



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# Introduction

This handbook is a guide for conducting Project Learning Tree (PLT) workshops. It explains PLT's mission and objectives, the goals of a PLT workshop, your responsibilities as a facilitator, how to find a workshop site, how to publicize your workshop, and what to include in the workshop itself. It discusses materials, equipment, and resource specialists you may want to involve in your workshops, as well as suggestions for workshop follow-up. It also examines topics you may want to model and discuss, including environmental education, teaching outdoors, cooperative learning, differentiated instruction, and others.

If you are a new facilitator, you may use this handbook as a step-by-step guide for planning and conducting your workshops. If you are a seasoned PLT facilitator, you may use it to find new ideas to enhance your workshops. The table of contents will help you locate specific information you need.

Workshop facilitators have been the lifeblood of PLT for more than 40 years. They have successfully trained hundreds of thousands of educators to use PLT materials, and continue to assist in expanding the reach of PLT nationwide and internationally. Without the time and energy these facilitators provide to the program, PLT would not have attained the recognition it has for being the cornerstone for environmental education.

Now that you have joined the ranks of these very important facilitators, you will benefit from their experiences. This handbook is the direct result of what others have learned by doing workshops, and includes lots of suggestions for you. We hope you will add to this handbook your own experiences, things you want to try next time, and ideas you pick up along the way.

If you find an approach that works and want to share it, please do so with your state PLT coordinator and the PLT national office.

We give our sincere thanks to all of you who have chosen to become an integral part of the PLT network.

# Acknowledgments

Project Learning Tree’s Facilitators Handbook is a culmination of efforts from many individuals, including state PLT Coordinators, PLT Operating Committee members, and PLT staff.

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## *I. About PLT*

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### *1. What is PLT?*

Project Learning Tree (PLT) is an award-winning environmental education program designed for educators working with students from pre-kindergarten to twelfth grade. Through hands-on, interdisciplinary activities, PLT helps young people learn *how* to think – not *what* to think – about complex environmental issues. PLT can help address state and national standards. It provides the tools educators need to bring the environment into their classrooms and the students into the environment.

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, and in formal and nonformal educational settings. PLT activities work 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.

At the heart of PLT is a set of activity guides for educators to use with their students. (Please see section 4. *The PLT Materials* for a list and description of each of PLT's materials.) For those working with elementary students, the *PreK-8 Environmental Education Activity Guide* and *Energy & Society* program kit offer exciting and challenging activities. For those working with ninth through twelfth graders, there is a series of topic-specific secondary modules. Most of the PLT activity guides are not for sale, but are provided to educators when they participate in a PLT workshop. The Green Jobs, Forests of the World, Biodiversity, and Biotechnology secondary modules can be downloaded and/or purchased from the PLT Shop website. The PLT GreenSchools Investigations and Nature Activities for Families can be downloaded for free from the PLT website or a print copy can be purchased from the PLT Shop.

PLT promotes the *process* of education and advocates sound principles of teaching. The PLT materials encourage educators to provide students with opportunities to gather information, communicate, cooperate, access values, solve problems, and use critical thinking. 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, especially pertaining to thinking in terms of systems, civic participation, inquiry, and the arts.

PLT models quality environmental education and thus is balanced on values-sensitive topics. The 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. **Hence, it is critical that workshop facilitators keep this in mind and practice this balanced perspective.**

## **2. PLT's Mission and Goals**

### **PLT's Mission:**

Project Learning Tree advances environmental literacy and promotes stewardship through excellence in environmental education, professional development, and curriculum resources that use trees and forests as windows on the world.

### **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.

## **3. A Brief History of PLT**

The PLT program began in the mid-1970s as a collaboration 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 comprised of representatives from state departments of education and natural resources agencies from 13 western states.

The founders of PLT developed an effective environmental education program based on three goals. The first goal was to design an environmental education program that would gain the confidence of the education community—educators would have to 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. The third goal was to design a system of implementation for the program. By making the materials only available through workshops, the founders were helping to ensure that the curriculum would be used effectively. Educators participate in workshops to learn how to use the materials effectively with their students and make them locally relevant.

The PLT materials were developed by a team of writers and were thoroughly tested and evaluated. Two activity guides were produced, one for K-6 grade educators and one for 7-12 grade educators. The first editions of these supplementary curriculum guides were published in 1976.

In 1982, AFI executed a licensing arrangement with the American Forest Foundation (AFF), which thereby became the co-sponsor with WREEC of PLT. In 1986, AFI was realigned with other industry associations and became the American Forest Council (AFC). AFC continued to administer PLT for AFF and WREEC. In 1993, AFC was realigned with other forest and paper industry associations. At that time, AFF became a wholly independent, publicly supported, 501(c)(3) non-profit education organization and took over all administration for PLT. Also in 1993, the PLT materials were extensively revised into a PreK-8 Activity Guide and topic-specific secondary modules. PLT's PreK-8 Environmental Education Activity Guide underwent its most major revision in late 2005 to address education reform and today's most pressing environmental issues. For example, new features include reading connections, technology connections, and differentiated instruction; new activities focus on invasive species and climate change. Secondary modules tailored to high school students have continued to be developed and include topics such as Forest Ecology, Forest Issues, Places We Live, Risk Assessment, Solid Waste, Biodiversity (on line) and the newest module, Forests of the World.

Building on the successful model of PLT, WREEC formed a partnership in 1980 with the Western Association of Fish and Wildlife Agencies to develop Project WILD, a program similar to PLT which uses wildlife as a focus for teaching environmental principles. Using the successful PLT development and implementation model, Project WILD published a K-6 guide and a 7-12 guide in 1983, and subsequently combined the guides into one volume in 1992. In 1989, WREEC partnered with Montana State University to form Project WET that in 1995 published a K-12 guide, a water and wetlands-based environmental education curriculum designed to promote the stewardship of water resources. Then, in 1996, in order to reflect a broader nationwide interest, WREEC changed its name to the Council for Environmental Educational (CEE) and restructured its board of directors and membership. CEE has primary responsibility for Project WILD. Project WET Foundation is now its own 501(c)(3) non-profit organization.

In 2017, The Sustainable Forestry Initiative Inc. (SFI) and the American Forest Foundation (AFF) announced that SFI had become the new home of Project Learning Tree (PLT). SFI is an independent, non-profit organization dedicated to promoting forest sustainability and supporting the links between sustainable forests and communities through grant programs, carefully targeted research, youth education, supply chain assurances, and partnerships that effectively contribute to multiple conservation objectives. PLT's integration into SFI provided an opportunity for the program

to expand its reach and impact. And SFI's role as a sustainability leader will be bolstered by PLT's expertise in education, an increasing focus in SFI's community engagement work.

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; several U.S. territories; and six other countries (Brazil, Canada, Chile, Japan, Mexico, and Uruguay) PLT curriculum has been translated into seven languages. For fourteen years now, Peace Corps volunteers worldwide have received training in PLT.

In each of the 50 states, PLT is implemented by sponsoring organizations through steering committees with representatives from state education, resource, and environmental agencies; business groups; universities; other non-profits; and preK-12 schools. In other countries, PLT partners with a non-governmental organization or government agency that shares PLT's mission, goals, and instructional strategies. International partners adapt, translate, and deliver a version of PLT for use in their country. At the national level, PLT's partners include Federal agencies (ranging from Bureau of Land Management, to US Fish & Wildlife Service, to the USDA Forest Service), industry, environmental organizations, educators, and academics.

Thousands of people work together under the PLT umbrella to help young people learn the skills they will need to become responsible environmental decision makers. PLT has a nationwide network of nearly 70 PLT State Coordinators and more than 3,000 volunteer workshop facilitators. About 30,000 educators attend PLT professional development workshops each year. More than 500,000 educators have received training in how to use PLT. Although the exact figure is not known, literally millions of children have, as a PLT saying goes, "learned how to think, not what to think" about complex environmental issues through exposure to PLT.

## **4. The PLT Materials**

At the heart of PLT are the supplementary elementary and secondary curriculum materials, which offer exciting and challenging activities that focus on the total environment. Below are descriptions of the materials PLT offers to educators.

### ***Experiences for Early Childhood Activity Guide***

Contains over 130 experiences that engage children in outdoor play and exploration and is specifically designed for educators who work with children ages three to six.

### ***PreK-8 Environmental Education Activity Guide***

PLT's *PreK-8 Environmental Education Activity Guide* contains 96 hands-on interdisciplinary activities on such topics as water and air quality, ecology, climate change, urban environments, and recycling. The guide is designed so that an educator can use a single activity or many activities over the course of a quarter or year.

### ***E-Units***

PLT's e-units are fully-contained units of instruction. The "E" in e-unit stands for "electronic," which means they are fully housed online.

- ***Grades K-2: Tremendous Science!***

- For K-2 teachers, Tremendous Science helps young children explore, experience, and collect data to understand how trees grow, the roles trees play in ecological systems, and how humans and trees interact.
- **Grades 3-5: Energy in Ecosystems**
  - For 3rd-5th grade teachers, Energy in Ecosystems uses the forest as a lens to help students explore and understand the interactions and energy flows present in all ecosystems.
- **Grades 6-8: Carbon & Climate**
  - For 6th-8th grade teachers, Carbon & Climate helps introduce students to some of the complex issues involved in climate change.

### ***Secondary Modules***

PLT's interdisciplinary secondary modules are intended for grades 9-12, but can be adapted for other audiences such as middle school students, entry level college classes or adult community groups. They encompass key concepts from social science, sciences, humanities, and math. Modules currently available are:

- *Exploring Forest Careers: Green Jobs*
- *Exploring Environmental Issues: Focus on Forests*
- *Exploring Environmental Issues: Municipal Solid Waste*
- *Exploring Environmental Issues: Focus on Risk*
- *Exploring Environmental Issues: Places We Live*
- *Exploring Environmental Issues: Biodiversity*
- *Exploring Environmental Issues: Biotechnology*
- *Global Connections: Forests of the World*
- *Southeastern Forests & Climate Change (free download at: <https://www.plt.org/curriculum/southeastern-forests-climate-change/>)*
- *Teaching with i-Tree (free download at: <https://www.plt.org/curriculum/teaching-with-itree/>)*

### ***Energy & Society***

PLT's Energy & Society program kit helps students in grades PreK-8 learn about their relationship with energy and investigate the environmental issues related to energy's role in society. The kit includes:

- *Energy & Society Activity Guide*
- *Energy & Me Music CD (with Billy B)*
- *Energy & Me Music and Dance DVD*

### ***GreenWorks!***

Since 1992, Project Learning Tree has offered GreenWorks! grants to schools and youth organizations for environmental service-learning projects that link classroom learning to the real world. Students implement an action project they help design to green their school or to improve an aspect of their neighborhood's environment. By participating in a PLT workshop, educators meet one of the criteria to apply for a *GreenWorks!* grant. See the PLT website for more information.

## ***Earth & Sky Correlations***

PLT teamed up with the Earth & Sky Radio Program to combine the power of radio, the internet, and PLT. Earth & Sky is a successful short format science radio program heard by millions of listeners throughout the U.S. and abroad that highlights the wonders of science and nature through daily radio shows.

The *Earth & Sky* radio shows have been correlated directly to PLT activities to help enhance teachers' use of the radio shows and PLT materials. Shows and topics that correlate to PLT PreK–12 activities can be identified on the *Earth & Sky* website by the PLT logo. Along with PLT correlations, these Earth & Sky radio shows contain a list of additional resources that have been compiled by PLT, including background materials, supplementary resources, related web links, suggested speakers, and field tour sites. Use of the *Earth & Sky* shows can enhance the teaching of PLT activities by connecting educators with this integrated multimedia educational experience that provides access to accurate, reliable, and understandable scientific research and data. Some ways that educators might use the radio shows include: An engager to a PLT activity; a homework assignment to introduce concepts and provoke questions; or a follow-up piece to reinforce or build upon concepts covered in a PLT activity.

For more information, go to the curriculum resources for each activity at [www.plt.org](http://www.plt.org), or go to [www.earthsky.org](http://www.earthsky.org) and click on Teachers.

## ***Reproduction of PLT Materials***

Please note that all PLT curriculum materials are **protected under copyright laws**. The Student Pages may be copied for educational use in conjunction with a PLT activity. No other reproduction of PLT materials is allowed without written permission. All requests for permission must be submitted to the American Forest Foundation. See the inside front cover of each guide for more information. For reprint or adaptation guidelines, see the PLT website under “Curriculum.”

Copyright rules specific to the online *Exploring Environmental Issues: Biodiversity Secondary Module* can be viewed at the PLT website by clicking on “Curriculum/Biodiversity.”

## **5. PLT's Conceptual Framework**

PLT's curriculum materials are developed with a conceptual framework serving as its foundation. The conceptual framework is arranged around five major themes:

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

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

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

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

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

Each theme includes the areas of Environment, Resource Management & Technology, and Society & Culture. PLT activities integrate the five themes within science, language arts, social studies, math, art, music, and physical education.

PLT's conceptual framework can be found in Appendix 2 of the PreK-8 Guide and in each of the secondary modules. Also, see Appendix F of this handbook.

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 specific direction. The framework provides the structure, direction, and purpose for the activities. Though a conceptual framework is provided, formal educators, in particular, may want to develop their own frameworks based on their school's curricula. Use the PLT Lesson Planning Worksheet in Appendix D to help educators connect their curricula to PLT activities and local resources.

Each PLT activity lists concepts from the framework that are emphasized. Activities can be grouped as thematic, conceptual, or storyline units. (Suggested storylines are provided in Appendix 3 of the PreK-8 Guide.) Activities can also be used individually to teach a particular topic or to reinforce a concept listed. Educators may choose to add other concepts to an activity by using variations or by providing a different emphasis.

Although the PLT curriculum 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 the gaps with content that relates to their community, expertise, or interests, and/or that addresses specific state standards.

## **6. PLT Teaching Strategies**

PLT activities reflect a variety of "best practice" teaching strategies. They emphasize constructivist learning theory, the whole language approach, inquiry-based teaching, and cooperative learning strategies.

The **constructivist theory of learning** is based on the principle that students construct new understandings by combining previous understandings with new discoveries. 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.

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 Section IV, part 2 for more information on Constructivist Teaching.

The Biological Science Curriculum Study (BSCS) developed an instructional model for constructivism, called the "**Five Es**". The five Es are: Engage, Explore, Explain, Elaborate, and Evaluate. This model for learning is now being used in some textbooks and by educators to support learners' need to construct their own understanding of new ideas. The E-Units were developed around this instructional model and future PLT guides will also incorporate this model.

PLT also incorporates the **whole language** approach. Whole language is a method of teaching reading and writing that emphasizes learning whole words and phrases by encountering them in everyday contexts and books. Students frequently engage in writing and oral language activities related to experiential learning. PLT supports whole language instruction by engaging students in meaningful reading, writing, and communication experiences within a relevant and meaningful context. In addition, relevant literature books (both fiction and nonfiction) are listed in each PLT activity in the PreK-8 Guide.

An **inquiry-based approach** to learning promotes the development of such skills as identifying problems, developing relevant questions, determining desired outcomes, selecting possible solutions, testing solutions, and evaluating outcomes. PLT activities encourage this type of skill building.

PLT also emphasizes **cooperative learning**, a strategy in which students work together in small groups to achieve common goals. While helping students develop collaboration and communication skills, cooperative learning also promotes the equality of all students by encouraging them to work with each other to complete projects.

Using those approaches, teachers will find that PLT activities encourage learners through the process of awareness, understanding, challenge, motivation, and action using active involvement and hands-on experiences.

## **7. Curriculum Development and Revision Process**

To ensure that PLT supports the needs of educators, PLT uses an extensive multi-layered curriculum development and evaluation process to guide the creation and revision of its materials. The process includes research, surveys, writing workshops, and reviews with educators and resource professionals; revisions based on pilot testing and field testing in the classroom; and formal evaluation by independent consultants.

The 1993 edition of the PreK-8 Guide began with a survey of more than 50,000 teachers, environmental educators, teams of scientists, natural resource managers and technical specialists. More than 300 educators participated in writing workshops and editing sessions. Another 300 educators participated in formative and summative evaluations.

Beginning in 2003, PLT again embarked on a revision process to improve its curriculum materials. During the three-year process, focus groups of classroom teachers, curriculum specialists, nonformal educators, natural resource managers, and university faculty reviewed and revised PLT activities. Writing teams gathered the information and integrated the new materials into the guide. The new PreK-8 Guide, first published in 2006, includes the following:

- strengthened teacher support for differentiated instruction

- strengthened reading connections
- improved assessments
- technology connections
- new activities on invasive species and climate change

Please see “*Cutting-Edge Environmental Education*” in the introduction of the PreK-8 Guide for a detailed description of each of these improvements. (Note: A major revision to the PreK-8 Guide is scheduled to be released in 2021)

## **8. Evaluation of PLT Materials**

The PLT materials have undergone extensive evaluation to determine their effectiveness with students. The Research Commission of the North American Association for Environmental Education conducted a summative evaluation in 1994 of Project Learning Tree. The evaluation consisted of both traditional pre-test/intervention/post-test procedures and alternative assessment techniques. All activities in the *PreK-8 Environmental Education Activity Guide* were evaluated. A total of 240 teachers and 5,000 students in the U.S. and Canada who used PLT over a period of 12 months participated in the research.

The evaluation confirmed increased knowledge and positive attitudinal growths among students exposed to PLT. In addition, teachers who had completed at least one PLT teacher workshop, and who implemented the PLT activities as intended, were more likely to observe knowledge gains and attitudinal change in their students. This appeared to be particularly true when students were exposed to a series of PLT activities over a relatively short period of time.

The study also showed that short-term exposure to PLT produced positive, long-term effects when it comes to improving environmental knowledge and attitudes. Researchers further concluded that PLT increased knowledge in surprisingly little time. In fact, the average knowledge growth for students in grades 2-8 who were exposed to PLT for two to three weeks was no less than the equivalent of seven months of (normal, regular, traditional) teaching.

The secondary modules have also undergone formal evaluations with similar results. Dr. Louis Iozzi, at Rutgers University-Cook College, evaluated the *Focus on Forests*, *Forest Ecology*, and *Municipal Solid Waste* modules. Christina Gomez-Schmidt and Dr. Michaela Zint at the University of Michigan evaluated the *Risk* module.

In addition to the PLT-directed evaluations, the NAAEE and the California Department of Education each reviewed the PLT materials through their respective curriculum/materials evaluation projects. PLT was given excellent evaluations by both organizations.

Please visit the PLT website at [www.plt.org](http://www.plt.org) for more information on PLT evaluations.

### **Sources:**

California Department of Education. *Communities: A Review of Curricula on Natural and Built Environments*. Environmental Education Compendia Series. 2002

North American Association for Environmental Education. *Project Learning Tree National Field*

*Study.* Dr. Tom Marcinkowski, Florida Institute of Technology and Dr. Lou Iozzi, Rutgers University. December 1994. (An executive summary of this research can be found at [www.plt.org](http://www.plt.org) under “About PLT – Evaluation.”)

North American Association for Environmental Education. *The Environmental Education Collection: A Review of Resources for Educators – Volume One.* 1997.

North American Association for Environmental Education Resource Review. <http://www.naaee.org/programs-and-initiatives/resource-review>. 2007.

## **9. PLT’s Administration and Partners**

Project Learning Tree is nationally administered by the Sustainable Forestry Initiative, Inc (SFI). SFI is an independent, non-profit organization dedicated to promoting forest sustainability and supporting the links between sustainable forests and communities through grant programs, carefully targeted research, youth education, supply chain assurances, and partnerships that effectively contribute to multiple conservation objectives. PLT's partners include the Bureau of Land Management, ee360, Green Schools Alliance, National Association of Conservation Districts, North American Association for Environmental Education, Wildlife Habitat Council, U.S. Fish and Wildlife Service, and the U.S.D.A. Forest Service.

From the beginning, PLT has been administered under the direction of a broad-based national Education Operating Committee that brings together all the PLT partners. The committee includes representatives from state coordinators, national PLT sponsors, education, industry, and other partners. A list of PLT Education Operating Committee members is provided in the “Acknowledgments” section of the PreK-8 Guide and on the PLT website at [www.plt.org](http://www.plt.org).

The Project Learning Tree national staff is responsible for the “behind the scenes” component of the PLT program. This includes the development and implementation of all curriculum materials, supporting materials, communication materials, and special projects. The PLT national office is located inside the SFI office at 2121 K Street, NW, Suite 750, Washington, DC 20037. The PLT website provides a list of current national staff and their contact information.

### **SC Sponsorship**

In 1980 the State Department of Education brought Project Learning Tree into the state and ran the program for approximately 4 years until grant funding for the environmental education coordinator’s position was eliminated. At that point, a consortium of interested partners entered into an agreement with the national Project Learning Tree program to coordinate the program for the state.

In South Carolina there are three primary sponsors: The South Carolina Forestry Commission, which provides the coordinators position and is in charge of the day-to-day logistics of the program; the South Carolina Forestry Foundation which provides the non-profit financial status for the program in the state; and the State Department of Education which provides advice and membership on the state Steering Committee. Through an MOU, these three entities work together to coordinate the program in South Carolina with the national office. In the past decade, the S.C. PLT program has become nationally recognized and one of the leading state programs in the nation.

## **10. Related Programs**

Building on the success of PLT, the Council for Environmental Education (CEE) – formerly known as the Western Regional Environmental Education Council (WREEC) – developed a similar program in 1980 that uses wildlife as a focus for teaching environmental principles. This program, Project WILD, has also been successful in the United States and abroad. In 1989, CEE partnered with the The Watercourse at University of Montana to co-sponsor the development of Project WET, an environmental education program designed to promote the stewardship of water resources.

## **11. Awards and Endorsements**

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

PLT has also received other awards and recognition from the:

- USDA Forest Service
- North American Association for Environmental Education
- National Arbor Day Foundation
- Conservation Education Association
- National Wildlife Federation
- National Association for Industry-Education Cooperation
- American Society of Association Executives
- Keep America Beautiful
- Renew America
- Solid Waste Association of America
- Parents’ Choice
- Children’s Music Web Awards

For an up-to-date list of awards presented to the National PLT program, check the PLT website under About PLT/Awards.

In South Carolina, Project Learning Tree and its officers have been awarded:

- The 2006 Environmental Education Association of South Carolina annual award for Outstanding Leadership in Environmental Education.
- The 2006 Charles H. Flory Distinguished Service Award was presented to the PLT Coordinator in recognition of outstanding leadership in Forestry Education.
- In 2006 the National PLT Gold Star Award was presented to the S.C. Coordinator for outstanding contributions to the PLT program.
- In 2019 the National PLT Gold Star Award was presented to the S.C. Coordinator for outstanding contributions to the PLT program.

## **12. Correlations to State and National Standards**

Project Learning Tree's activities have been correlated to many state and national standards. These correlations can be found on PLT's website at [www.plt.org](http://www.plt.org). The national correlations include:

- Common Core State Standards
- National Social Studies Standards
- Next Generation Science Standards
- National Head Start Association
- National Association for the Education of Young Children
- Girl Scouts
- Boy Scouts
- The Private Eye
- Full Option Science System (FOSS)
- NAAEE's *Excellence in EE Guidelines for Learning* (PreK–12)

South Carolina Project Learning Tree has also provided an extensive correlation to the S.C. State Department of Education Curriculum Standards in science, math, language arts, and social studies for the Early Childhood, PreK-8 and Focus on Forests activities. These correlations can be found at the national web site at [www.plt.org](http://www.plt.org). Included in these correlations are:

- A list of curriculum standards with the PLT activities that directly support the standard or reinforce the standard for each major subject area.
- A reverse correlation where a list of PLT activities are given with the corresponding standard for each grade level in each major subject area.
- A cross correlation where all the PLT activities are listed and any corresponding standard under each major subject area are listed all together for multidisciplinary correlations.



## *II. What is a PLT Workshop?*

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### **1. Workshop Goals**

The main goals of any PLT Professional Development Workshop are:

- To encourage educators to approach learning and teaching from an ecological and multi-disciplinary perspective.
- To prepare educators to use PLT materials by modeling a sample of PLT activities and teaching strategies.
- To show educators how they can incorporate PLT into their current and future lesson plans and curriculum.
- To increase educators' confidence in teaching environmental education concepts.
- To enrich educators' knowledge of content included in PLT lessons.
- To create a setting in which educators can meet other professionals in their region interested in environmental education.
- To provide a fun and motivating forum that encourages educators to enjoy their own learning process.

The workshop protocol has been used throughout PLT's history because it has been proven that educators will more readily use the materials if they see for themselves how PLT will enhance what they are already teaching. In the workshop setting, educators experience the modeling of various activities, and consider how to adapt activities to fit their own curricula and styles. In some workshops, participants select activities to present to each other in small groups. During the activity wrap-ups, where attendees are encouraged to share ideas, participants learn from each other. Participants also get to observe different teaching styles and exchange creative ideas.

## **2. Workshop Design**

The workshop should show participants how to use PLT to teach science, math, language arts, social sciences, art, health, and even physical education. Nonformal educators – such as environmental educators, outdoor school teachers, interpreters, docents, homeschoolers, or youth organization leaders – should be shown how PLT can be used as a resource of activities to enhance their work with both students and adults.

In addition to introducing the PLT materials, the workshop should model effective teaching strategies and encourage educators to explore new ways of teaching. Wherever possible, use hands-on instructional methods and help participants work out any problems they foresee using these methods with their students.

The entire workshop structure should follow the “AKCA” (Awareness, Knowledge, Challenge and Consensus, Action) model, which is the model that individual PLT activities are structured around. The AKCA model leads students from awareness, to knowledge, to challenge, and finally to action. When applied to the workshop setting, the model will lead the educators from an awareness of PLT, to adding to what they know about PLT, to challenging them to experience PLT, and finally to them actively leading activities and exploring ways to use the activities with their students. See Section IV for ideas on additional educational topics to model and discuss.

The following chart provides possible PreK-8 workshop formats, with a description and benefits and challenges of each.

See Section III for information regarding planning and conducting secondary workshops.

## *Possible PreK-8 Workshop Formats*

<b>Format</b>	<b>Description</b>	<b>Benefits</b>	<b>Challenges</b>
<p>One-Day In-service Workshop</p> <p>(See Appendix C for sample agendas)</p>	<p>One day-long session, 5-6 hours.</p>	<ul style="list-style-type: none"> <li>• Focuses on needs of classroom teachers</li> <li>• Can hold workshop during scheduled school district in-service days</li> <li>• Allows teachers to work in grade level teams</li> </ul>	<ul style="list-style-type: none"> <li>• Competition with other in-service trainings</li> </ul>
<p>One-Day General Workshop</p> <p>(See Appendix C for sample agendas)</p>	<p>One day-long session, 5-6 hours.</p>	<ul style="list-style-type: none"> <li>• Draws educators from diverse settings – school teachers and Scout and 4-H leaders, museum staff, after-school program leaders</li> <li>• Agenda can be flexible</li> </ul>	<ul style="list-style-type: none"> <li>• Many other competing activities if on weekends</li> <li>• Educators may not want to use weekend for professional development</li> <li>• Difficult for educators to get off work if on a weekday (unless it is an inservice training for formal educators)</li> </ul>
<p>Blended Online/Face-to-Face Workshop</p> <p>(PreK-8 workshop only)</p>	<p>3-hour online pre-workshop course &amp; 3-hour face-to-face workshop</p>	<ul style="list-style-type: none"> <li>• State coordinator manages online portion and facilitator manages face-to-face portion</li> <li>• Flexibility for scheduling</li> </ul>	<ul style="list-style-type: none"> <li>• Participants must register and complete online course ahead of face-to-face workshop or they can't go home with the guide (can be mailed once online course is completed)</li> <li>• Participants technology profficiency</li> </ul>
<p>Two or more After-School or Evening Workshops</p> <p>(See Appendix C for sample agendas)</p>	<p>Two or more sessions scheduled a week or more apart, 2–3 hours each.</p>	<ul style="list-style-type: none"> <li>• You can focus on one school or organization</li> <li>• Time between sessions allows participants to try out activities and reflect on experiences</li> <li>• Participants are more likely to use materials immediately with students</li> </ul>	<ul style="list-style-type: none"> <li>• Educators are often tired after a full day of work</li> <li>• Some may not show back up for the second session after the first session if they receive their books.</li> <li>• Twice as expensive as far as travel goes.</li> </ul>
<p>Preservice Workshop – at a University/College</p> <p>(See Appendix C for sample syllabus)</p>	<p>Professor is a PLT facilitator and integrates PLT into course, or a PLT facilitator is invited to the class on specific days</p>	<ul style="list-style-type: none"> <li>• Professors who are PLT facilitators reach new students each year</li> <li>• Guest facilitator provides ease of workshop implementation</li> </ul>	<ul style="list-style-type: none"> <li>• Competition with other course requirements</li> </ul>

<p>Preservice Workshop – in the Community</p> <p>(See Appendix C for sample agendas)</p>	<p>Usually at a nature center or community EE location. Can be for all preservice educators or a combo of preservice and other formal or non-formal educators.</p>	<ul style="list-style-type: none"> <li>• If a combination audience, allows preservice educators to participate in a workshop with experienced educators</li> <li>• Enables preservice educators to visit a community EE site off campus</li> </ul>	<ul style="list-style-type: none"> <li>• Students may have difficulty traveling off campus</li> <li>• Diverse backgrounds of participants creates a challenge in preparing the agenda</li> </ul>
<p>Early Childhood Workshop</p> <p>(with emphasis on “make &amp; take”, ie., making the materials needed to do the activity)</p> <p>(See Appendix C for sample agendas)</p>	<p>Single or multi-session, totaling 5-6 hours. Participants receive PreK-8 Guide &amp; do several “make &amp; take” activities. Is highly interactive with connections to music &amp; movement, visual &amp; performing arts, use of senses, outdoor observations, &amp; Reading</p>	<ul style="list-style-type: none"> <li>• Participants leave with materials to do several activities</li> <li>• Targeted audience makes prep easier</li> <li>• Very interactive format with music, arts, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Activities require more time to complete when making the materials</li> <li>• Participants do not typically have strong science backgrounds and require more content</li> </ul>
<p>Summer Institute or Advanced Workshop</p> <p>(See Appendix C for sample agendas)</p>	<p>Typically two or more days long. An institute explores one or more topics in-depth, such as fire ecology, urban forestry, children’s literature, and technology.</p>	<ul style="list-style-type: none"> <li>• More in-depth look at the content and teaching strategies covered in PLT activities</li> <li>• Can offer field trips and hands-on sessions with content specialists</li> </ul>	<ul style="list-style-type: none"> <li>• Requires longer time commitment by participants</li> <li>• Requires more planning and preparation</li> </ul>

### **3. Time Requirements**

When planning your workshop, keep in mind that educators must attend a workshop that is at least **five hours** long to receive the *Project Learning Tree PreK-8 Environmental Education Activity Guide*, and at least **three hours** long to receive the Experiences for Early Childhood module. Secondary modules require a minimum of **four** hours for two modules. E-unit workshops require a minimum of **four** hours each. Virtual workshops require a **1.5-hour** videoconference plus the accompanying online course for the guide.

If you are also a Project WILD or Project WET facilitator, you may wish to combine one of these two programs with PLT into one workshop. If so, the workshop must be at least **eight hours** long. If you are combining PLT, Project WILD, and Project WET, each program should be allocated 4 hours each – making the workshop 12 contact hours in length.

### **4. Workshop Fees**

In South Carolina, PLT workshops require a \$20 workshop fee per participant. These fees cover costs incurred by SC PLT, such as books, facilitator travel reimbursement, snacks for the workshop, and supplies for the workshop. Any additional fees charged must be approved by the state coordinator prior to planning the workshop. These additional fees generally can cover the costs of a meal, special materials provided, meeting room fees, and any other direct costs you or the sponsoring organization incur. If academic credit is provided, the college or university may require additional fees or tuition. The \$20 per participant fee is waived for in-service teachers if the workshop is scheduled for a school or school district and college students majoring in education, forestry, wildlife, natural resource management, environmental science, or parks, recreation, and tourism management.

Under no circumstances will S.C. PLT or an individual associated with SC PLT profit from conducting a PLT workshop in the state.

### **5. PLT Facilitator Responsibilities**

As a facilitator, you set the stage for learning and encourage participants to explore and develop as professionals. A facilitator serves as a guide, helping workshop participants gain a better understanding about the PLT program, its use, and potential impacts on students' environmental awareness and understanding. Your job is to help people feel comfortable in the group, to listen as much or more than you talk, and to help others understand what they have learned.

The PLT facilitator is responsible for:

- Structuring a positive, hands-on experience that allows each member of the group to participate in activities, and so far as possible, achieve his or her reason for being at the workshop.

- Modeling the PLT philosophy of “awareness” (what is PLT, and what does it contain) to “action” (participants make plans for use of PLT, then go home and use it). See the previous Workshop Design section for more information on “Awareness to Action.”
- Motivating (through an enthusiastic presentation) and assisting the participants in understanding how they can integrate PLT into their teaching.

The role of the Project Learning Tree workshop leader is to help the participants make their own observations, interpretations, and conclusions about PLT, and to assist the group in discovering and realizing the potential PLT holds for them.

A PLT workshop facilitator also must put his or her biases and interests aside. This is particularly difficult since many of the issues we talk about and many of the PLT activities we work with touch important aspects in our own lives. For more ideas on this topic, see “**Two Hats**” in Appendix 13 of the PreK-8 Guide.

### ***Workshops***

Once you are certified as a PLT facilitator, we hope that you will be willing to plan and conduct at least one six-hour workshop each year. We encourage you to team up with other facilitators and resource specialists and we welcome alternative workshop styles.

See **Appendix C** for sample agendas that illustrate the wide variety of workshop styles.

### ***Other Ways to Become Involved***

In addition to conducting workshops, consider becoming involved in PLT in other areas such as promotion, networking, and recognition. For example, you might:

- Promote PLT at conferences, fairs, and other gatherings.
- Provide 1-2 hour sessions to introduce participants to PLT. This can be done at a conference, local school board or teachers’ meeting, or for a service-learning group or after-school program.
- Serve as a PLT resource in your region.
- Help find participants for workshops and promote media coverage of PLT events.
- Serve as a mentor and help other new leaders become certified as PLT facilitators. Contact the State Coordinator for more information.
- Enrich your state PLT program by sharing your ideas, techniques, resources, and other information in your facilitator newsletter, and in the national PLT newsletter, *the Branch*. Send your ideas to your State Coordinator.

- Share your recommendations to your State Coordinator for nomination of individuals and organizations for annual PLT recognition/awards.
- Follow-up with a team of teachers in a particular school or district, about integrating PLT activities across grade levels.
- Support a particular teacher in writing a GreenWorks! Grant proposal, by offering feedback or a letter of support.
- As a certified PLT facilitator, you may be asked to make a presentation to a local school board, teachers' meeting, or other informal gathering. Please see the sample agenda below. Feel free to alter the agenda to meet your needs.

### **Sample Agenda for 1–2 Hour Presentation**

1. Introduction  
You might have people introduce themselves (if necessary), and have each person name one thing that an environmental education program, like PLT, could provide for them. Make a list of their needs (you may want to refer to this later).
2. Distribute PLT's promotional brochure, and briefly describe the referenced guides, programs, and resources. Alternatively, you might show a PowerPoint on PLT. (Check with your State Coordinator for PLT PowerPoints.)
3. Do a carefully selected PLT activity that targets the group you are working with.
4. Give an overview of other selected PLT activities.
5. Refer to the needs they expressed earlier and discuss how PLT may fit their particular needs.
6. If time permits, you may want to do another PLT activity.
7. Explain how they can participate in or schedule a PLT workshop.



### *III. Planning & Conducting a PLT Workshop*

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Most of the work for a successful workshop is done before the workshop day. Following are suggestions for planning and conducting your workshop to ensure success, as well as information about a few essential post-workshop tasks. See the “Workshop Planning Checklist” that follows for a summary of all these tasks.

#### **1. Arranging the Workshop**

PLT workshops generally happen in one of two ways. Sometimes a sponsoring organization identifies a need and then arranges with a facilitator to plan and present the workshop. More often, a PLT facilitator decides to do a workshop and arranges it through a sponsoring organization or workshop facility.

To arrange a workshop, begin by checking with your school, school district, teaching colleges or universities, county office of education, or other organization to find out whether they would be interested in sponsoring a workshop. Other possibilities include contacting local nature centers, county parks, other agencies, or conservation-oriented organizations (such as an urban forestry organization, Girl Scouts, or 4-H) and gaining their interest in sponsoring a workshop.

Although sponsors are not required, some workshop sites require proof of liability and accident insurance before you can hold a workshop there. *PLT cannot cover facilitators with insurance for workshops.* Therefore, we recommend that you find a sponsor for your workshop that can provide you with the necessary insurance protection.

#### **2. Co-Facilitating**

We highly recommend that you co-facilitate your workshop, especially if you are a new workshop facilitator. You may co-facilitate with one or two others who attended your facilitator training or with an experienced PLT facilitator (lists of facilitators are available from your State Coordinator). If possible, you might co-facilitate with a resource specialist trained in PLT (for more information, see *Inviting a Resource Specialist* that follows).

Co-facilitating has many advantages, both for you as the facilitator and for the participants. It is helpful to have someone to share ideas with, to help plan the agenda and your delivery, to help gather necessary materials, and to share the responsibility for presenting activities and for fielding questions. Participants will have the advantage of seeing varying teaching styles and will learn from presenters with different areas of expertise. In addition, if one facilitator has an emergency, the other facilitator(s) can cover and the workshop will not have to be cancelled.

If you do work with a co-facilitator, be as explicit as possible with each other *before* the workshop. It is important to identify what each of your roles will be. You may find it useful for each of you to write your answers to the questions in the “Co-Facilitating that Works” chart below and discuss your responses. This cooperative planning early on will allow for smooth transitions between facilitators and will also enhance your working relationship.

### **Co-Facilitating That Works:**

As you begin to plan a workshop with a co-facilitator, consider these questions and share your answers with each other to help clarify your roles.

- For which parts of the workshop would you like to be responsible? Which parts would you like your co-facilitator to handle?
- What would you really like to include in the workshop because it is important to the targeted audience, because it worked well in other workshops, or for another reason?
- How will you make transitions between each of your presentations?
- If necessary, how will you adjust your agenda?

## Workshop Planning Checklist

### Planning for the Workshop

- Find someone to co-facilitate the workshop.
- Request permission from your school system or organization (if necessary).
- Select and reserve workshop site for the date, time, and number of hours needed.
- Submit workshop plan to district or college for approval (if necessary).
- Submit workshop proposal and planning form to State Coordinator at least six weeks prior to the workshop date if possible. This allows enough time for your Coordinator to process the PLT guide orders.
- Develop and distribute promotional materials such as flyers, pre-registration forms, posters, or articles at least four weeks prior to the workshop date.
- Develop workshop design, taking into consideration:
  - the audience
  - workshop objectives
  - constraints (for example, space or time)
  - strategies for overcoming constraints
  - requirements for credit (district, college, or university), if offered
  - materials and equipment needed for activities
- Outline workshop agenda and plan schedule.
- If possible, contact/invite a resource specialist.
- If planned, arrange for refreshments and snacks.
- Gather support materials such as AV equipment, paper, pens, and art materials.
- (Optional) Send confirmations and maps to those registered.
- (Optional) If possible, visit workshop site to check things out.

### At the Workshop Site

- Set up workshop space (if possible, the afternoon or evening before).
- Check to be sure equipment is working.
- Locate restrooms, light switches, plugs, and easiest access to the outdoors.
- Select appropriate areas to conduct activities.
- During the workshop, orient participants to the restrooms and refreshments.
- Provide a brief overview of the agenda, including when breaks and lunch will be taken.
- At the end of the workshop, be sure each participant fills out a Participant Information Form and Participant Survey Form (evaluation).
- Distribute PLT certificates.

### Post-Workshop Tasks

- Complete the Facilitator Survey Form and send it to your State Coordinator along with the completed Participant Survey Forms.
- Complete the Workshop Expenses Summary Form and send to the State Coordinator.
- (Optional) Send thank you letters with a list of workshop participants, addresses, and phone numbers. Remind participants of any follow-up meeting.

### **3. Offering Credit**

Offering credit can be a big incentive to potential workshop participants. If you are affiliated with a college or university, you may be able to offer college credit. If you are interested in doing this, you will need to make all the arrangements with the school. Depending on the school's specific requirements, your workshop may need to be longer than is required by PLT (usually a total of ten to fifteen hours) and participants may need to complete a written assignment. Also, participants will usually need to pay a fee to the college or university for the credit.

In South Carolina, participants in PLT professional development workshop qualify for Certificate Renewal Credits under category 6: Professional Training. This is part of SC PLT's MOU with the State Department of Education. As a facilitator, you must supply the participant with a certificate of attendance and an agenda for them to submit to their district personnel in charge of issuing these credits. You may also want to include the following announcement on your advertising:

*Project Learning Tree® is the environmental education program of the Sustainable Forestry Initiative and sponsored in South Carolina by the S.C. Forestry Commission, the State Department of Education, and the S.C. Forestry Foundation. Participation in PLT professional development workshops qualify for Certificate Renewal Credits under category 6: Professional Training (1 hour of direct participation = 1 renewal credit).*

Foresters and other resource professionals participating in the Society of American Foresters' (SAF) "Continuing Forestry Education and Professional Development Recognition Program (CFE)" may be able to earn Category 2 credit by participating in a PLT workshop. Contact your Coordinator for the name of the SAF person in your area to verify CFE credit. Be sure to allow time for the paperwork involved in receiving this credit for your workshop participants.

### **4. Deciding Where and When**

Two important considerations you will need to keep in mind when designing your workshop are the workshop site and time frame. Everything you do during the workshop will depend to some degree on these two factors.

#### ***Workshop Site***

Successful workshops have been conducted in a variety of settings—from school sites to city parks, from museum classrooms to wooded retreats. Before selecting a site for the workshop, think about its advantages and disadvantages and compare these to the workshop goals. For example, a workshop at an environmental education center in a regional park can acquaint teachers with resources available to them in their area, while one held at the school site might help teachers see how PLT activities can be used in their own classroom and will show them that the environment is wherever we are!

Think about ways you might overcome any disadvantages or constraints the space presents. For example, a retreat location may be wonderful for the spirit, but consider ways to include activities and discussion that help teachers relate to the day-to-day classroom setting. A meeting room can help participants focus on the day's task, but can be stifling for nature lovers; plan a way to get participants outside for at least part of the workshop.

Wherever you plan to conduct the workshop, be sure to reserve the facility well in advance. Some facilities may book up quickly.

### ***Workshop Length and Time***

A PLT workshop needs to be at least five hours long for participants to receive the *PreK-8 Environmental Education Activity Guide*, four hours for an E-Unit, at least three hours for an early childhood, and at least two hours for a secondary module. You have a lot of flexibility in terms of how this time is distributed.

For a five-hour workshop, you may wish to conduct one day-long face-to-face workshop or do a blended 2-hour online pre-workshop course then 3-hour face-to-face workshop. Participants may be more focused during a one-day session.

For the five-hour or longer workshops, there are advantages to two or more shorter sessions spaced over a two- to four-week period. One possibility is to have an after school workshop for an hour or two, and concentrate on activities that fit into the teachers' curriculum. Between sessions, you may ask participants to conduct with their students the activities you presented during the first workshop session (or other activities they select). At the following workshop session, they can share what happened, and discuss adaptations or extensions they developed. Participants are also able to review the PLT activity guides and prepare additional activities for classroom use or for presenting to other participants at the next workshop session. This multiple session format provides a wonderful opportunity for the participants to try out activities while they are excited about PLT. If you decide to use this format, be sure that participants have an incentive and are accountable for attending *all* sessions. For the after school format, you may want to provide high-energy snacks or dinner. (See the chart "Possible PreK-8 Workshop Formats" in Section II for more ideas.)

The secondary module workshops must be a minimum of two hours, with an additional hour added for each secondary module introduced at the workshop. For shorter workshops (three hours or less), it is best to hold them in one time block. If possible, arrange to include a field experience for participants or provide a guest speaker to complement the PLT secondary module materials. **See Appendix C for sample agendas, and Appendix D for suggestions specific to secondary workshops.**

## **5. Publicizing Your Workshop**

Pre-workshop publicity announces your workshop to those who may be interested in attending. **See Appendix B for sample publicity materials.**

Effective publicity gives potential participants enough information in advance so they know what to expect, including:

- a brief description of PLT
- the goals of the workshop and key concepts to be covered
- who will be conducting the workshop
- the sponsors
- the date, time, and location (including a map and directions, if necessary)
- if the workshop is two or more sessions, that attendance is required at all sessions
- the registration fee (see “Workshop Fees” in Section II), and how to pay it
- whether credit is available
- what participants will receive: a PLT activity guide
- the materials they receive are correlated to state and national academic standards
- contact person, including address and phone number for further information
- appropriate clothing (for example, dress for the outdoors)
- whether a bag lunch is needed
- registration deadline or cutoff date

Use your imagination to create a flyer, poster, or announcement that conveys this information (Helpful Hints are included below). Use whatever format works well in your setting. Whenever possible, make use of existing communication channels within your organization or within your school, district, or county education system. For example, announcements can be sent by mail or fax to local schools (addressed to the principal or curriculum supervisor), or can be advertised on teacher workroom bulletin boards. You may want to include the workshop on the county or district calendar. In addition, the PLT national website offers a spot for posting state workshops.

As with most advertising, word-of-mouth is usually best. For example, if you are inviting educators from more than one school site, ask one person at each site to help spread the word and send extra announcements for that person to share. Many department chairs and lead teachers are willing to forward workshop announcements by email to groups of teachers they commonly work with.

Another possibility is to announce your workshop through the newsletters and websites of various local educational associations (such as local science, social studies, or math councils) or environmental education and outdoor education organizations.

Press releases may be sent to local newspapers for their calendar section or for a regular section they may offer on schools/education. Your state coordinator can also list workshops on the PLT national website and advertise your workshops through local list serves and other means.

It will be helpful to know in advance the number of people who will be attending your workshop. You may want to include a tear-off registration form at the bottom of your flyer. Besides letting you know how many people to expect, a pre-registration form can also help you plan to meet their specific interests. To encourage early sign-ups, you may also state “Enrollment is limited,” or “Register by (date).”

In order to make the workshop experience as positive as possible for those attending, you might consider setting a minimum and maximum number of participants. If you do this, make sure you have a way to contact participants before the workshop to let them know they are registered or if the workshop is canceled. Many PLT facilitators have stated that 10 is the about the minimum and 40 the maximum number of people for a successful workshop. Generally, the PLT state coordinator will work with you in contacting facilitators and arranging your workshops. In South Carolina we generally like a ratio of 1 facilitator for every 10 participants. Workshops larger than 40 participants can be handled but must be coordinated specifically to meet the needs and space of the workshop and participants.

## *Helpful Hints for Making Flyers*

### General Rules:

- Define the audience and make sure the flyer is geared to that audience.
- Keep the flyer simple. Give just the information needed and avoid distractions.
- Make sure the style of the flyer and the information given are consistent.

### Things to think about when making a flyer:

- Who is the audience? What do they need to know?
- What kind of heading will you use? How will it “catch the eye” and be recognized?
- How will you inform? What is the right amount of information?
- Be sure to include WHO to contact, WHAT to bring or expect, WHEN to come, WHERE the workshop is to be held, and HOW to get there.
- How can you group your information into chunks that inform and can be distributed nicely throughout the flyer?
- How will you format your flyer? A symmetrical format is “calm” whereas an asymmetrical format communicates “action.” What typefaces will you use? Never use more than three different typefaces per piece — too many typefaces will look disorganized.
- What art can you include? You are encouraged to include the PLT logo and graphics, which you can obtain from your state coordinator.

## 6. Considering the Audience

Before you plan the specifics of your workshop, it is helpful if you know some of the needs and interests of your participants. If you have enough lead time, you might prepare a pre-workshop questionnaire to find out their expectations for the workshop, what grade level and types of young people they work with, academic standards they are working on, and any special needs they have. If you know beforehand that the group you will be working with has a special area of interest, you may want to tailor the entire workshop to suit their needs.

Even if you do not know the specific needs of your audience, before you begin planning try to visualize what the audience would want from the workshop. Is their attendance mandatory or voluntary? If it is mandatory ask yourself, “Why would the participants *want* to attend?” and be prepared to show what they can gain from using PLT with their students. For information about ways to meet the needs of your audience as adult learners, see “**Working with Adults as Learners,**” in Appendix D.

You might also consider whether there are any local issues or current movements in education the participants might be concerned about. If you identify possible issues or trends, think about how you could address these during the workshop. For ideas on topics you might model and discuss, see Section IV.

## 7. Selecting PLT Activities

After you have considered your audience, you are ready to select PLT activities to present. Do this in tandem with planning the agenda (see “Planning the Agenda” that follows) so that you get an idea of how much time you will have for activities. In a five-hour PreK-8 workshop, we recommend that participants’ experience a minimum of *five* PLT activities. In a two or three-hour secondary workshop, we recommend that participants are engaged in at least *two* PLT activities. Research on professional development suggests that participants are more likely to do those activities in their classroom that they did in workshops. Therefore, the more activities you have time to model the better.

The PLT activities you choose for the workshop should depend on the goals of your workshop, the interest areas of the participants, the time and space available, and your own personal preference. For a diverse group of educators, select activities that reflect the interdisciplinary nature of the materials, their usefulness in many subject areas and at all grade levels, and, if possible, the range of concepts addressed by PLT. If you know that your audience has a special area of interest, select activities to meet their needs. If the workshop focuses on a particular theme, grade level or academic standards, choose activities that tie in with that theme.

Select activities that involve a variety of learning strategies, for example, creative writing, simulation games, drawing, outdoor investigations, and mathematics. You might also want to select activities that demonstrate PLT’s ability to help students move from awareness of environmental issues to action.

Give participants an opportunity to participate in action-oriented activities, as well as a chance to sit periodically during other activities. By providing variety, you give participants a nice sampling of the activities in the guides, and create a more enjoyable and well-rounded workshop. Also allow for a mix of indoor and outdoor activities, weather permitting. Educators can see first-hand how flexible PLT is and they get a chance to enjoy the outdoors, too.

In general, plan to include activities *you* find exciting — your enthusiasm and excitement will be contagious. Many facilitators are more comfortable using PLT activities they have experienced themselves or have done with their students. Trying out an activity will help you in several ways: you will know first-hand how the activity works; you may develop interesting extensions or variations or locate valuable resource materials you can share; and you can bring in student work to demonstrate the activity's effectiveness.

Feel free to modify any of the PLT activities with your own ideas and adaptations to fit local issues or interests, the time and space available for the workshop, and your own leadership style.

Through your variations, you will be emphasizing an important idea: The PLT activities are useable as written, and they can also serve as points of departure for new explorations. Clearly convey this flexibility during your presentations.

You might also plan your workshops in a way that shows how PLT incorporates current practices of conceptual learning. For example, you might use a storyline to connect the activities you choose to demonstrate. These activities can be built around one of the PLT themes, or focus on a special interest in your community.

If you plan to have workshop participants present activities to each other, keep in mind that they will also be selecting some activities during the workshop. You might lead participants through a few activities, then form small groups that select, prepare, and present an activity. The participants can be asked to select activities that follow a storyline or theme.

In addition, you should have a plan to include participants with physical limitations. Think about how you would include someone with limited physical mobility in all activities.



## 8. Planning the Agenda

After you have considered your audience and have begun selecting activities to present, you are ready to plan the workshop agenda. The following sections and the “PLT Workshop Agenda Highlights” that follow will give you some ideas about elements to include. Also look at the **sample “Workshop Agendas” in Appendix C** for approximate times to allow for various types of workshops, including workshops for a secondary module.

PLT workshops should follow the steps to lead the workshop participants from an *awareness* of PLT, to *knowledge* about the specifics of the PLT program, to an opportunity to *challenge* the ideas or come to consensus on the new ideas, then finally to *action*—to use PLT materials in their teaching.

<i>PLT PreK-8 Workshop Agenda Highlights</i>			
AKCA Model Stage	Activity	Description	Time
Awareness	Welcome	Introduce presenters, brief overview of agenda and workshop goals, logistics	10 min.
	Getting Acquainted	Participants introduction; icebreaker	20 min.
	Background on PLT	See Section I of this handbook or the PLT guide for information on PLT’s mission, goals, sponsors, history, etc.	15 min.
Knowledge/Skills	Lead selected activities	Lead a series of activities that demonstrate a storyline or meet a goal related to state content standards or other local objectives; provide time for feedback, application, and reflection	2 hours
	Distribute PLT guides – “Hike” through Guide	Overview of the PLT activity guide – themes, activity components, appendices, copyright	15 min.
	Discuss other resources	Guest speaker; special topic (content specialist, reading connections, <i>GreenWorks!</i> , <i>Earth &amp; Sky</i> , etc.)	30 min.
Challenge	Personal use	Small groups select and lead a PLT activity (or facilitator leads additional activities) Try using “PLT on the spot” strategy	90 min.
Action	Individual Planning	Individuals explore: How can I use PLT in my classroom or other situation?	20 min.
	Wrap Up	Evaluation – survey forms, certificates	15 min.
	Feedback	Were needs met?	5 min.

The most critical workshop elements are:

- Welcome and Overview
- A brief history of PLT and acknowledgment of national and state sponsors
- PLT Activities experienced by participants (minimum of 5 activities for the PreK-8 Guide and 2 per secondary module)
- “Hike” Through the PLT Guide(s)
- PLT Resources (website)
- Other Resources
- Individual Planning
- Discussion of how the PLT activities meet standards (national, state, local, or school)
- Evaluation, Feedback, and Certificates
- Discussion of ongoing or follow-up support

Following are things to consider when planning each of the above workshop elements.

### ***Welcome and Overview***

Plan how you will welcome the participants, introduce yourself and other presenters, and give a brief overview of the agenda. No matter how clearly you have stated the workshop purposes and timeframe in your pre-workshop publicity, it is a good idea to restate them when you begin the workshop. People feel more comfortable if they know what to expect — and when.

Next, you may want to state the objectives of the workshop, and then ask participants to briefly write their individual and professional goals for being there. This should be something that they keep to themselves. Later in the workshop, take a moment to check in with them – how are they coming along in meeting their goals? You may also want to point out that while it is the facilitator’s responsibility to meet the goals of the workshop, it is the participants’ responsibility to make sure that they leave the workshop having met their own goals.

Plan how you will have participants introduce themselves. They are coming together for the workshop as learners and, especially if they do not know each other beforehand, you will enhance the learning environment by creating a friendly and informal atmosphere at the beginning of the workshop. You may want to provide nametags for participants, as well as leaders.

If appropriate, you may do a quick needs assessment to pinpoint the specific needs and expectations of each participant. For example, each participant might say, “My name is \_\_\_\_\_, I teach at \_\_\_\_\_, and I am particularly interested in \_\_\_\_\_ about PLT.” If you would prefer something lighter, you might plan an icebreaker activity. **(For ideas, see the “Sample Icebreakers” in Appendix D).**

## ***PLT History***

PLT is proud of its history and by offering brief highlights can give educators a better understanding of PLT's goals and purposes.

The history should include:

- when, why, and by whom PLT was initiated
- how the PLT guides were developed and evaluated
- that PLT is adopted by states and foreign nations on a volunteer basis
- a mention of PLT's national partners and of the awards PLT has received
- PLT's history and sponsors in your state

All the information you'll need to do this is in Section I of this handbook. Also, forms and presentations are available on SCPLT's website at <https://www.state.sc.us/forest/scpltfirms.htm> that you can use during your workshop. Your coordinator has also provided you with a Power Point presentation that you can use to introduce SC PLT on the flashdrive included with this notebook.

## ***PLT Activities Presented by You***

Plan how you will present each activity. If you have invited a resource specialist, consider asking that person to lead appropriate activities (see "Inviting a Resource Specialist" later in this section).

Plan to present PLT activities in a way that engages the participants as learners first, then allows them to reflect on the activities from their perspective as educators (for more information, see **"Working with Adults as Learners" in Appendix D**). To help participants reflect on the activity, you might have a quick debriefing after each activity. For example, you might invite them to share:

- what they learned through the experience
- what they would like their students to learn
- how they might adapt the activity to fit the needs of their students (for example, to fit a particular grade level or students with special needs)
- extension ideas
- how the activities relate to state standards
- any classroom management ideas or other suggestions they might have

***This debriefing is often the most important part of the activity.***

Depending on your audience, you might have them share in small groups or in the group as a whole (for a comparison of Group Methods, see the box below). You might also consider modeling and discussing learning cycles in your activity presentation and debriefing. For more ideas on how to do this, see the box that follows on "Leading a Group Activity Using the Experiential/Learning Cycle."

### ***Group Methods***

<b>Method</b>	<b>Main Feature</b>	<b>Strengths</b>	<b>Weaknesses</b>
Lecture	Provides information.	Provides presentation of information in an organized, systematic way.	Provides few opportunities for interaction. Can be dull. Participants may not listen.
Lecture Discussion	Provides information and opportunities for interaction.	Provides efficient presentation while allowing audience to probe areas of interest to them.	Tends to make lecturer the only authority. Usually involves only “vocal” participants.
Large Group Discussion	Provides opportunity for extensive interaction.	Provides pooling of ideas, knowledge, and experiences. People can contribute at own level.	Becomes unwieldy with groups larger than 20-30 people.
Small Group Discussion	Allows almost 100% participation.	Provides pooling of ideas, knowledge, and experiences. More people can contribute at same time.	Can be time-consuming to report back to larger group.

## *Leading a Group Activity Using the Experiential/Learning Cycle*

Learning is a cyclical process that builds on the learner's previous experiences and knowledge. Consider modeling this cycle when leading a Project Learning Tree activity:

### Experiencing

The learning process usually starts with experiencing: the learner becomes engaged by doing, observing, or saying something. Start the activity by involving participants, rather than "telling" what will happen.

### Processing

The processing phase involves learners in thinking about and sharing what happened. Use questions to help participants process their experiences: What was \_\_\_ like for you? What did you feel when \_\_\_ happened? What do you think the consequences of \_\_\_ were?

### Generalizing

In this phase learners explore what they learned from the experience and abstract generalizations from it. Ask participants question such as: What did you learn from this activity and what would your students learn? What was the most difficult part? What would you do differently another time?

### Applying

This phase helps the learner confer personal meaning into the generalization. In your workshop, ask questions such as: How will you use this with your students? What will you do with the information gained in this workshop? These bring closure, and lead to new experiences.

### ***“Hike” Through the PLT Guide***

Plan how you will help participants become familiar with the contents of the activity guide(s). You may choose to conduct a walk-through using questions in a competition between small groups or in a “Jeopardy” game format. **See Appendix D for sample questions and answers.** Or, you might prefer to lead the whole group through the guides pointing out important elements along the way. See the box below for important topics to cover on your “hike” through the PreK-8 Guide. See Section 10 that follows for information on Secondary Module “hikes.”

#### ***“Hike” Through the PLT PreK-8 Guide***

##### ***Topics to Cover***

##### **Copyright – PLT Policy**

##### **Introductory Pages**

- Acknowledgements, more in Appendix 16
- PLT mission & goals
- What is environmental education (EE)?  
PLT = Quality EE
- Teaching methods & strategies
- PLT program overview & network

##### **Activities**

- Icons, p. 9
- Activity components, p. 10-11
- References & resources by activity in Appendix 4

##### **Appendices**

- Glossary
- Conceptual Framework & storylines
- Earth & Sky, differentiated instruction, technology connections
- Two Hats, teaching controversial issues, and much

## ***PLT Resources***

Allow some time during the workshop to let participants know about the wealth of PLT resources that are available to them. A brief overview of these resources follows:

- The PLT website, at [www.plt.org](http://www.plt.org), includes additional resources to support PLT activities, standards correlations, special initiatives, and more.
- The *Earth & Sky* partnership with PLT provides a correlation of PLT activities to *Earth & Sky* radio shows, (please see Section I for more information and visit the Teachers Section of the Earth & Sky website at [www.earthsky.org](http://www.earthsky.org) ).
- GreenWorks! is the service-learning component of PLT that blends service activities with academic curriculum. PLT provides a helpful guidebook (available at [www.plt.org](http://www.plt.org)) and offers competitive grants for implementing projects.
- PLT has an online community that allows educators to share their lesson plans, ideas, and resources.(available at [www.plt.org](http://www.plt.org))
- PLT provides an online newsletter, the *Branch*, to inform workshop participants about new PLT projects and resources.

## ***Other Resources***

Consider how you will introduce participants to books, materials, or local resources that can supplement the PLT activities. You could display books and materials at a resource center throughout the day. For resources such as parks, arboretums, nature centers, museums, local conservation groups, you might make a “resource list” chart that participants add to throughout the day — then copy and send the ideas to participants afterwards.

If the workshop is at a park or nature center, perhaps a staff member could welcome the group. They could take a few minutes to discuss the center, what it has to offer for groups, and additional resources for educators.

## ***Individual Classroom Planning***

One of the initial questions participants are most likely to ask when they attend the workshop is “How can I use PLT in my classroom (or other setting)?” Individual classroom planning is an important component to include. Once your workshop participants have become familiar with PLT and some of the activities, they need time to directly connect these new materials to the needs of their students and to their own teaching goals.

Plan adequate time for this component, even if you have to shorten something else. You might lead a brainstorming session and ask everyone to share their ideas. Another approach would be to have participants form groups and devise plans for implementing PLT in their classrooms, and then come together for discussion with the whole group at the end.

You could also ask participants to select lessons that they will be using in the next month or so. This helps to emphasize that PLT is not something extra, but rather it helps teachers teach what they already have to teach in the classroom.

Participants might also work independently to prepare specific plans for using PLT in their everyday teaching. Use PLT’s Lesson Planning Worksheet to assist with this process (see

**Appendix D for a sample**). You might ask participants in advance to bring textbooks and lesson plans to the workshop. This works well in a school or inservice setting.

### ***Evaluation, Feedback, and Certificates***

Plan time for each participant to complete a Participant Evaluation Form at the end of the workshop. **See Appendix A for a sample.**

It is very important that these evaluation forms are turned in since this is how PLT-trained educators are added to the national PLT database and how State Coordinators keep track of trained teachers. You might also allow time for verbal feedback and suggestions for improving future workshops. Once participants have turned in their forms, you may want to give them a certificate of completion (**see Appendix A for a sample Certificate**).

This is also a good time to encourage participants to let other teachers, administrators, and others know about the workshops and resources that PLT provides.

### ***Ongoing Support***

Of particular importance to formal educators is the need to provide ongoing support and mentoring. One method that incorporates this is to deliver the workshop in small chunks with assignments for trying out some of the activities in between the workshop sessions. If possible, the facilitator can assist in the classroom, through modeling, resources, and so forth. The sessions can be tied together with the school's goals and standards.

In addition, by checking off the appropriate box on the evaluation form, educators can stay in touch with PLT by receiving the *Branch* online newsletter. The newsletter provides information on PLT's new curriculum projects, educator tips, EE resources, and more.

## **9. Determining the Schedule**

Once you have thought about how you will present the different workshop elements, you will need to decide how much time to allow for each element and the order of the elements.

When planning the schedule, remember that the pacing of workshop activities is important. Offering a variety of activities helps participants stay interested in the materials and ideas you present. Keep in mind that certain modes work better at certain times of the day. For example, after lunch – when many of us tend to get sleepy – you might consider physical movement or visual activities outside that can be more stimulating than making lists or watching a video. If possible, include “alone time,” when individuals can reflect on the ideas or events of the workshop, as well as small group time, when they can share ideas with each other.

Be sure to include time for breaks. Short frequent breaks can do wonders for reviving everyone's energy level.

## **10. Planning and Conducting a PLT Secondary Workshop – Additional information**

### ***The Basic Elements***

The basic elements of a PLT secondary educator workshop are similar to those of a PreK-8 educator workshop. The beginning should include the following:

- Welcome & overview of goals
- Participant introductions/ice breaker
- Introduction to PLT (state/national history, what is PLT) with an emphasis on why PLT has developed a series of secondary modules

The next is **modeling of activities**. Workshop facilitators model activities from the modules that the participants will receive. It is recommended that you model at least two activities and also use the icebreaker as an opportunity to introduce another activity. Key elements of modeling include:

- Going through and conducting the steps of the activity
- Finding out how the participants could use the activity with their intended audience
- Debriefing at the end of the activity (adaptations, questions, etc.)

After the participants get a feel for the activities, it is time to hand out the modules and go for a **“hike” through the guide**. Following are two sample secondary module “hikes.”

## ***“Hike” Through “Exploring Environmental Issues: Focus on Forests”***

(This “hike/quiz” can be done verbally with prizes awarded)

1. Where is the copyright information located and what are the stipulations for reprinting PLT materials without permission?

*Inside the front cover. Only student pages may be reproduced without permission.*

2. What are the four primary objectives for students who participate in the activities from this guide?

*Page 13, Objectives of the Module*

- *Identify the ecosystem services that forests provide.*
- *Define forest health, and describe different ways to monitor it.*
- *Describe how economic and social systems play a role in managing forests for a variety of uses.*
- *Explain how natural and human influences—including climate change, fire, forest ownership, invasive species, and succession—affect forests.*

3. What is the difference between carbon sequestration and carbon sink?

*Carbon sequestration is the removal and storage of CO<sub>2</sub> from the air by plants. A carbon sink occurs when the amount of sequestration exceeds the release of carbon over a specific period of time. Activity #8, page 133 or Glossary, page 151.*

4. What are the six major sections in the Focus on Forests guide?

*Acknowledgements, About PLT, Why Study Forests?, Background Information, Student Activities, and Appendices.*

5. How do you know if a word/term can be found in the glossary?

*It is highlighted in bold and italics type.*

6. What are PLT’s goals?

*See About PLT, page 7.*

7. Name two activities that help to teach mathematics.

*Four activities teach math: Monitoring Forest Health, Who Owns America’s Forests, Forest to Faucet, and Climate Change and Forests*

8. Name an activity that can be used in a Government and Politics class.

*Story of Succession OR Climate Change and Forests  
Subject Area Correlation, pg 15*

9. What are the 7 Forest Health Indicators used in Activity 1, Monitoring Forest Health?

*Tree Crown and Condition, Forest Diversity, Lichen Abundance, Soil Condition, Regeneration, Snags and Coarse Woody Debris, and Wildlife  
Forest Health Summary Student Page, pg 51*

## ***“Hike” Through “Exploring Environmental Issues: Forests of the World”***

(This “hike/quiz” can be done verbally with prizes awarded)

1. What are the stipulations for reprinting PLT materials without permission?  
*Inside the front cover. Only student pages may be reproduced without permission.*
2. What are the primary objectives for students who participate in activities from this guide?  
*Page 11-12, Objectives of the Module*
  1. *Demonstrate an understanding of how different cultures, people, and societies view and define forests.*
  3. *Describe different ways that people around the world interact with forests.*
  4. *Identify geographic factors that determine the major types of forests around the world.*
  5. *Explain how environmental and human factors have affected and continue to affect the world’s forests.*
  6. *Describe how economic, political, and social systems play a role in managing forests around the world for a variety of uses.*
  7. *Define sustainability as it relates to the world’s forests, including ecological, economic, and social elements of sustainability.*
  8. *Explore efforts around the world to protect and conserve forests and forest resources.*
3. How do you know if a word/term can be found in the glossary?  
*It is highlighted in bold and italics type.*
4. Name two activities that help to teach Geography.  
*Five activities teach Geography: #2, 3, 4, 6, 9. They are listed in the subject chart at the bottom of page 12 or can be found in the sidebar at beginning of each activity.*
5. Where can you find information on production, trade, and consumption of forest products?  
*Appendix F*
6. What are ways that a teacher might use the World Forest Tour cards found in the Student Pages on pages 23-30?  
*The cards describe forest issues in different countries. They are organized by Making a Living, The Forest Provides, Wildlife, and People and the Forest. Teachers may copy (and laminate) the cards and use them with students as discussion topics, as journal writing prompts, or as a jump-start for research projects. Individual activities also give suggestions for using the cards. Background Information, pg 13.*
7. What is carbon sequestration?  
*Carbon sequestration is the removal and long-term storage of carbon dioxide from the atmosphere through the use of both natural and industrial processes.  
The Forest Planet Student Page, pg 21 or Glossary, page 113.*
8. What are PLT’s goals?  
*See About the World Forestry Center and Project Learning Tree, page 7.*
9. Using the Global Connections map, look at the equator and the tropics. What do you notice about forest coverage in relation to these lines?  
*Forests are heavily concentrated in this area.*

Consider also the following extensions of a hike:

- Divide the group into teams of 3-5 people and assign each team a theme. Their goal is to plan a 3-5 day unit around that theme, using activities from the module you are presenting in the workshop. They should write up their plan and then have each team present their plan to the whole group.
- Divide the group into teams of 3-5 people and assign each team an activity from the module. Their goal is to create a “coat-of-arms” for the activity so that it gives a clear synopsis of what it is about. They should include things like time considerations, materials needed, extensions, and the basic objectives of the activity.

Once the hike is complete, you should again explore the potential for **using the activities** from the module(s) with students.

Before the formal closing it is a good time to go over any remaining **questions**. Finally, the participants should fill out the evaluation forms to receive their certificate of completion.

### ***Adding to the Basic Elements***

While the basic elements get the job done, it can be a more meaningful and effective workshop if you are able to:

- Invite a local resource specialist (i.e., forester, solid waste specialist, toxicologist, natural resource manager, etc.) to share local resources and to answer content related questions
- Set up learning stations that allow participants to get a taste for more activities
- Spend some time on lesson planning in small groups where educators can share ideas on how they are going to implement the activities in their classes

### ***Planning a Secondary Workshop***

The essential details for planning an educator workshop are found in Section III of this handbook. The major difference for a secondary workshop is that there is often less time to work *with*. Here are some time guidelines:

If you have:	You can cover:
2 hours	→ 1 module
3-4 hours	→ 2 modules
5-6 hours	→ 3 modules

If you plan to cover more than 1 module, you may consider grouping the modules to work around a theme (see some specific examples below). It may also be useful to find out what subject(s) the participants teach and create a workshop that is tailored to those needs.

### ***Possible Secondary Module Workshop/Session Formats***

You may want to consider trying one or more of the following secondary module workshop or session formats:

- Hold a two-hour workshop after school
- Hold a session at a conference (1-3 hours)
- Embed in a one-day science or social studies professional development inservice day
- Embed in secondary methods science and social studies courses

### ***Setting up a Workshop around a Theme***

If you are able to cover more than one module at a workshop, you may want to use one theme that ties the modules together and shows how they can complement each other. Below are a few thematic ideas along with the corresponding activities.

### **Sample Topics and Supporting Activities (by module)**

<b>Module →</b>	<b>Places We Live</b>	<b>Focus on Forests</b>	<b>Biotechnology</b>	<b>Municipal Solid Waste</b>	<b>Focus on Risk</b>	<b>Biodiversity</b>
<b>Topic/Focus ↓</b>						
<b>Forest Issues</b>	Green Space	Tough Choices			Decision-Making (Part B-Wildfires)	Global Invaders; Protected Areas
<b>Solid Waste &amp; Risk</b>	Far Reaching Decisions		Bio-remediation	Waste -to - Energy	Risk Perception	
				Recycling and Economics	Plastics, Risk/Benefit	
<b>Math and EE</b>				Recycling and Econ.	Probability and Risk	
<b>Decision Making</b>	A Vision for the Future	Tough Choices or Squirrels vs. Scopes	Biotechnology & You	Landfills	Decision-Making or Weighing the Options	Protected Areas; Potatoes, Pesticides, & Biodiversity

### ***Promoting Secondary Workshops – Reaching the Secondary Audience***

One of the biggest challenges is marketing the PLT workshop to secondary educators. When doing PR for your workshop, include the following information – as applicable - in your flyer or other publicity materials:

- Correlation to state and/or national standards
- Credit for professional development requirements (if available)
- Networking opportunity
- What in-depth content will be presented
- Eligibility for GreenWorks! -- highlight service learning
- Encouraging quotes from teachers who have taken a workshop
- Hands-on opportunities
- Career connections
- Content experts—speakers
- Fee waived or stipend for substitute teacher
- Materials and other EE resources participants will receive

If possible, try to find out who your prospective audience is beforehand so you can advertise according to their specific needs.

### ***Learning Stations***

Since time is a limiting factor during the workshop, learning stations provide an opportunity for participants to check out some of the activities that you do not get to model. The basic idea of learning stations is that you display the objectives of the activity, any necessary props, and any student pages. If you happen to have done the activity and you have any photographs or completed student pages that would be excellent as well.

As an example, if you are facilitating a workshop for the Municipal Solid Waste module, you can set up the Landfill activity at a learning station (if you are unable to model it). The station would include a poster board with the objectives, maybe some background information or the steps of the activity, and the student pages. You could also have a landfill in a bottle so that the participants could see what it takes to put it together.

The following is a list of activities for each module that could work well as learning stations:

## Secondary Learning Stations

<b>Biodiversity</b>	<b>Focus on Forests</b>	<b>Municipal Solid Waste</b>	<b>Places We Live</b>	<b>Risk</b>
<p><b>Global Invaders:</b> Student pages, “Common Characteristics” on p. 2; student presentation samples f/ Part A; world map to show species movement</p>	<p><b>Who Owns America’s Forests:</b> Copies of maps showing forests around the U.S. (could use the PLT map); copies of the student pages.</p>	<p><b>Source Reduction:</b> Samples of overly packed items and efficiently packaged items; the student pages.</p>	<p><b>Mapping Your Community Through Time:</b> Aerial photos and GIS maps, regional planning documents.</p>	<p><b>Chances Are...Understanding Probability and Risk:</b> A collage of the overview, instructions, graphs, and charts – with some pennies scattered around.</p>
<p><b>Protected Areas:</b> Student pages; samples of group representations f/ Part A and Protected Area presentations f/ Part B</p>	<p><b>Tough Choices:</b> Highlight the elements of an environmental issue – can put each element on a piece of paper and then highlight the topics that are discussed.</p>	<p><b>Composting:</b> Student page on compost bin designs; Appendix 6 – Composting in a Bottle (show different materials separately and then have one completed example).</p>	<p><b>Green Space</b> Maps of your local community, green maps of your community.</p>	<p><b>Risk Assessment:</b> The student pages, plus some packets of artificial sweetener.</p>
	<p><b>Words to Live By:</b> Cut out and enlarge the information on pages 44 – 46 and display on a poster.</p>	<p><b>Waste-to-Energy:</b> Display titles of the interest groups; have the interest group positions on pieces of cardboard; the W-T-E facility graphic on page 81.</p>	<p><b>Far-Reaching Decisions:</b> Link to various websites showing your ecological footprint.</p>	<p><b>Electro-magnetic Fields:</b> Student pages 134-5 (with 134 filled out) on the poster (along with the overview, etc.); index card with the interest group positions; an EMF reader, if available.</p>

## **11. Inviting a Resource Specialist**

Consider inviting a resource specialist — someone involved in the field of resource management or conservation — to the workshop you are planning. This person can help with specific content information or provide technical assistance in hands-on activities. The resource specialist can help provide one-on-one contact with participants and can handle specific questions that may not be appropriate for the entire group.

Adding a resource specialist to your workshop can complement your expertise and provide participants with two perspectives during one workshop. Meeting and working with a resource specialist can also give participants a local resource contact who may help them plan classroom visits or identify field trip sites. They may also be able to help by providing supplies such as tree cookies or water test kits, and by offering ideas for “action” projects.

Resource professionals include individuals with expertise in such areas as forestry, biodiversity, air quality, solid waste management, soil conservation, risk management, or wetlands. Specialists may be found at local, state, or federal natural resource agencies, private conservation groups, or colleges and universities. If you are planning in advance, you can ask the State Coordinator for ideas about who to contact to help with the theme of your workshop.

Once you have identified a resource specialist, clarify your expectations for his or her involvement in the workshop. Help the specialist understand that the objective of the workshop is to help educators feel confident in using PLT with their students, so they must not be overwhelmed by the activities or information presented. Send the specialist a copy of the workshop agenda and review the specialist’s roles during different times. For example, discuss whether the specialist will participate with educators in a particular activity or whether he or she will provide expert commentary to introduce the activity. Also discuss strategies for facilitating rather than forcing learning.

## **12. Planning for Food and Beverages**

Snacks and beverages will help participants feel comfortable and welcome. **Find out ahead of time whether the sponsoring organization will provide snacks and beverages or whether you will be responsible.** Remember to provide a choice of beverages and food to accommodate different dietary requirements. Also find out whether the workshop site has equipment for serving food and beverages such as a hot water pot, cups, spoons, or serving trays. If not, you may need to make arrangements for these items.

If the workshop will be an all-day session, you should also consider how much time to allow for the lunch break. If there are restaurants nearby, you will need to allow enough time for participants to get there and back. (If participants will be going out, it may be helpful to provide a list of close-by restaurants with directions and their menus.) If there are no restaurants nearby, ask participants to bring a bag lunch or consider providing a simple catered lunch or buying groceries for a sandwich, fruit, and cookie smorgasbord. Whatever you decide for lunch, be sure

to allow the time needed for the type of lunch you plan. In addition, remember that participants will need to know what to expect *ahead of time*.

### **13. Planning for Health and Safety**

Medical emergencies may occur at any time. As a PLT facilitator, be aware of your own safety, use common sense, and do not put yourself in any possible danger. To be prepared, consider the following:

- Bring a first aid kit or check to see that one is available at the workshop site. It should include basic supplies such as band-aids, antibiotic ointment, an ice pack, and rubber gloves. Let participants know that you have a first aid kit on hand.
- Be familiar with your site. Locate exits, hazards, sources of water, and telephones; and be able to explain the location.
- Know the emergency numbers for the area.
- Consider the physical safety of your participants. Encourage them to participate in activities within their physical capabilities and “comfort zone.”
- Make sure to have water and shelter available.
- In case of an emergency, use a “land line” rather than a cell phone to make emergency calls; that will allow emergency 911 operators to trace your location, and reception is more reliable.
- If individual medical issues arise, stay calm and seek medical attention.
- Check the weather for any possible severe weather advisories that may be predicted for the day of a workshop.

### **14. Gathering Materials and Equipment**

Well before the workshop date, carefully plan what materials and equipment you will need for your workshop. Decide what you will need to present each agenda item and what participants will need. Find out what equipment is available at the workshop site and how you can reserve the equipment you need.

#### ***Materials from the State Coordinator***

At least **four weeks** before your workshop, send a completed “**Workshop Proposal Form**” to the State Coordinator. The coordinator will send you the following materials:

- PLT activity guides.
- **PLT participant information forms, participant evaluations, and photo release forms.** During the workshop wrap-up, participants *must* complete the evaluation form. Survey responses are used to measure progress toward the statewide implementation goal. Return the forms to the State Coordinator as soon after the workshop as possible.
- **PLT Certificates.**
- Other supplementary materials on hand.

### ***Other Materials***

In addition to the materials from the State Coordinator, you may want to bring the following supplies as well as any other props for specific activities you are planning. If you conduct workshops often, you may wish to keep a workshop box, full of miscellaneous items such as these:

- Masking tape
- Flip chart and easel
- Non-permanent marking pens, different sizes and colors
- Pens or pencils
- Scissors
- Name tags
- Paper clips, rubber bands
- Supplies and props needed for specific activities such as blank paper, crayons, or instructions
- Resource materials for participants to peruse, including children’s literature that supplements PLT activities and related environmental education curricula and guides
- First aid kit and emergency numbers (in case of an accident or medical emergency)
- Extra extension cord (for audio-visual equipment)
- Release forms (for use of photos or videos), see **Appendix A** for sample
- Computer and LCD projector, and any other audio-visual equipment that the host site is not providing

**REMEMBER:** S.C. PLT will reimburse you for any supplies and materials you need to conduct your workshop, but you must keep your receipts and submit a “Facilitator Expense Form” to obtain this reimbursement.

### **15. Preparing Necessary Visuals**

Think about any visuals you will need, such as flip charts or overhead sheets, and prepare them before the workshop. See the box below on “Visual Aides Compared” for tips on making them as effective as possible. Be sure to consider the group size when choosing delivery methods.

Develop a written agenda and write it on a flip chart or reproduce copies for all workshop participants.

### **16. “Day of” Workshop Tasks**

When you have finished planning and preparing for the workshop, you can focus your attention on setting up and conducting the workshop. When the workshop is over, do not forget a few essential post-workshop tasks that are described in the next section.

<b>Visual Aids Compared</b>			
<b>Visual Aid</b>	<b>Advantages</b>	<b>Disadvantages</b>	<b>Tips for Use</b>
Chalkboard or Dry-Erase Board	<ul style="list-style-type: none"> <li>▪ Familiar and convenient</li> <li>▪ Allows spontaneity</li> </ul>	<ul style="list-style-type: none"> <li>▪ Lettering may be hard to read</li> <li>▪ Can lose eye contact when writing on board</li> <li>▪ Bad for large groups</li> <li>▪ Chalk dust is dirty; dry-erase pens have strong odor</li> </ul>	<ul style="list-style-type: none"> <li>▪ Plan use of space in advance – especially if you have drawing or charts.</li> <li>▪ Write heavy and large.</li> <li>▪ Use colors, if possible.</li> <li>▪ Write some things on board ahead of time and cover until used.</li> <li>▪ Keep the group talking while using. Ask follow-up questions.</li> </ul>
Flip Charts	<ul style="list-style-type: none"> <li>▪ Can store and use readily</li> <li>▪ Can use for display after presentation</li> <li>▪ Materials are easily prepared and can be prepared ahead</li> </ul>	<ul style="list-style-type: none"> <li>▪ Bulky and awkward to handle</li> <li>▪ Not legible for very large groups</li> <li>▪ Time consuming to produce</li> <li>▪ Paper can rattle, crease, rip, or smudge</li> </ul>	<ul style="list-style-type: none"> <li>▪ Make charts simple to read and understand.</li> <li>▪ Have them in correct order and set up ahead of time.</li> <li>▪ Keep the number of charts to a minimum.</li> <li>▪ Write information reminders or key points lightly in pencil on the chart. You'll be able to read these during the session, but they won't be visible to participants.</li> </ul>
Overhead Projector	<ul style="list-style-type: none"> <li>▪ Can maintain eye contact</li> <li>▪ Materials are easily prepared and can be used over again</li> </ul>	<ul style="list-style-type: none"> <li>▪ Requires practice</li> <li>▪ Not every workshop venue will have equipment</li> </ul>	<ul style="list-style-type: none"> <li>▪ Set up equipment beforehand and check it.</li> <li>▪ Practice using overhead: don't stand in front of image, don't look behind you at screen, and don't move the transparency.</li> </ul>
Presentation from Software (such as Powerpoint)	<ul style="list-style-type: none"> <li>▪ Can prepare ahead</li> <li>▪ Can easily make changes to presentation for next time</li> <li>▪ Can print out hand-outs from presentation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Can make presentation seem "canned"</li> <li>▪ Requires time and some skill to prepare</li> <li>▪ Can become difficult to read if too much information presented</li> <li>▪ Requires lots of equipment</li> </ul>	<ul style="list-style-type: none"> <li>▪ Keep slides simple.</li> <li>▪ Do not get carried away with special features.</li> <li>▪ For a consistent, professional look, use templates provided in software package.</li> <li>▪ If possible, try out presentation on a test audience.</li> <li>▪ Set up all equipment in advance and test to make sure everything works.</li> </ul>
Hand-outs	<ul style="list-style-type: none"> <li>▪ Good for reinforcement and review</li> <li>▪ Good for presenting ideas for discussion</li> <li>▪ Can eliminate need for participants to take notes</li> <li>▪ You can copy and use them again</li> </ul>	<ul style="list-style-type: none"> <li>▪ Must prepare in advance</li> <li>▪ Distribution can be distracting</li> <li>▪ Cost of copying</li> </ul>	<ul style="list-style-type: none"> <li>▪ Design handouts clearly to promote understanding.</li> <li>▪ Number handouts beforehand in case you want to refer to a particular handout.</li> </ul>
Video/DVD	<ul style="list-style-type: none"> <li>▪ Compels attention, making presentation dramatic</li> <li>▪ Good for introducing or reinforcing a topic</li> </ul>	<ul style="list-style-type: none"> <li>▪ May be difficult to locate the right video for your purpose</li> <li>▪ Doesn't work well with large groups (unless you have projection equipment)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Set up beforehand and check machine operation.</li> <li>▪ Brief participants – give them something to watch for.</li> <li>▪ Preview thoroughly.</li> </ul>

## Setting Up

Allow yourself at least 60 to 90 minutes to set up the workshop space. If possible, you may want to set up the night before the workshop. By setting things up in advance, you will be more at ease.

***If you are not already familiar with the workshop site, locate restrooms, the quickest or easiest way outside (for outdoor activities), and light switches and plugs for audio-visual presentations. If you will be using any audio-visual equipment, test and set it up in advance.*** Remember, the arrangement of tables and chairs can help or hinder your workshop. Arrange the room in a way you feel will best accommodate your workshop goals. For example, if you will be presenting both small group and large group activities, arrange tables and chairs to promote small group activities and enable participants to get up and move around in larger groups. If it is a smaller group, a circle of chairs may be most appropriate.

### ***Facilitator Skills Checklist***

A good workshop facilitator promotes participation in many different ways:

- Setting a relaxed climate for learning.
- Listening to understand participants' needs.
- Developing a credible trust level with participants—never putting people down, but being firm when necessary.
- Having a composed and friendly manner.
- Having a sense of humor.
- Being an active listener—not boxed in by preconceived notions or answers.
- Conveying key concepts, but not overwhelming participants.
- Organizing time, materials, and people effectively.
- Being well prepared.
- Encouraging feedback and questions from workshop participants.
- Increasing the quality of participation by using "wait time," pausing three seconds or more after asking a question and after a participant response.
- Being willing to learn from mistakes and experiences to improve leadership skills.

Set up the materials you will be using so they will be easily accessible when you need them. You might want to establish one table as your “home base” and place on it the items you will need during the workshop such as handouts and materials for the PLT activities you will lead.

Set up a table near the entrance with a sign-in sheet, nametags, and pens. If you like, make a sign that asks participants to make name tags for themselves and to print their names on the sign-in sheet as they would like them to appear on their PLT certificates. You may want to set up a separate table to display materials such as children’s books about trees and forests, sample student projects for specific PLT activities, or other resources.

Post the workshop agenda where everyone can see it or have copies available for each participant on the sign-in table. If beverages or snacks will be provided, set up a convenient — but separate — snack area.

## ***Conducting the Workshop***

If possible, allow time before the workshop to greet the participants. This will help them feel welcome and will also help you feel more at ease with the group as a whole.

Begin the workshop on time to be fair to those who come on time. Throughout the workshop, keep in mind the checklist of facilitator skills (see box). Keep an eye on the pacing of activities and when participants need a break or a change of pace.

For one-day workshops, some facilitators like to fill in the PLT certificates during the lunch break so that they can distribute them at the end of the workshop.

Be sure to reserve time at the end of the workshop for participants to fill out the Participant Survey Forms.

## ***Getting Release Forms***

If you took pictures or videos during your workshop that you or your organization would like to use in the future, be sure to have participants complete a release form. **See Appendix A for a sample.**

## **17. Post-Workshop Tasks**

When the workshop is over, pat yourself on the back! Then take time to do the following essential tasks.

### ***Evaluating the Workshop***

Spend some time evaluating the workshop for yourself: What went well and what things would you like to improve for the next workshop? Jot down your thoughts. You will find these notes helpful when planning future workshops.

### ***Sending Forms to State Coordinator***

**As soon after the workshop as possible, complete the Facilitator Workshop Cover Sheet, Co-facilitator Forms, In-kind/Expense forms, and mail/e-mail it to the State Coordinator along with the completed participant information forms, workshop surveys, and photo releases.** Without these forms, the State Coordinator cannot place participants on the mailing list to receive future mailings and notifications.

### ***Additional Follow-Up (Optional)***

The extent of your post-workshop follow-up will depend on your available time and resources. If time permits, a thank you note to each participant along with a summary of key concepts and a list of names and addresses of the workshop participants is helpful. This helps participants begin their own local PLT network. If you did not distribute the certificates during the workshop, you may send them with a thank you note. If participants will be receiving college or district credit for attending your workshop, provide the follow-up needed to secure their credits.

Curriculum specialists and mentor teachers may appreciate additional follow-up to determine the long-term effectiveness of their inservice training programs. A few weeks after the workshop, you may decide to phone or e-mail a few of the participants to see how they are doing with the activities. If appropriate, suggest that they contact other workshop participants to compare notes regarding effective ways of using PLT. You might send a brief follow-up questionnaire to your group at the end of the school year to encourage their use of [www.plt.org](http://www.plt.org) and the *Branch* newsletter, and to see what success they have had with the activities. This can provide you with good justification for future workshops, and indicate where your workshop might benefit from changes and modifications.



## *IV. Topics to Model and Discuss*

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In addition to introducing the PLT materials, your PLT workshop should be a vehicle for helping teachers learn new teaching strategies and techniques. Consider organizing your workshop with a focus on a theme or topic, such as:

1. Education Reform and PLT
2. Constructivist Teaching
3. PLT and Thinking Processes
4. Learning Styles
5. Multiple Intelligences and PLT
6. Cooperative Learning
7. Early Childhood Education and PLT
8. Using PLT to Teach Technology
9. Using PLT to Support Differentiated Instruction
10. Focus on Reading with PLT
11. Addressing Controversial Issues
12. Leading Successful Outdoor Activities
13. A Focus on Urban and Community Forests

These topics are described below, with suggestions for addressing them in a workshop.

### **1. Education Reform and PLT**

During the past two decades, many systemic reforms have taken place in schools. In general, these reforms have focused on new approaches to teaching and learning, site-based governance, new roles for teachers, and accountability.

The PLT program has responded to these changes, and has evolved accordingly. Consider highlighting in your workshop how PLT supports these educational reform measures. For example:

- **New Methods of Teaching and Learning.** The most recent revision of the PreK-8 Guide strengthened the activities' grounding in the "constructivist" approach to teaching and learning. This approach is founded on the premise that learning is a dynamic process in which learners fit new information together with what they already know.

As you model activities in your workshop, point out how PLT activities employ a constructivist approach by beginning with a question or other task to help students engage their current knowledge, and then build on that knowledge through active learning. (For more information, see the following section, Constructivist Teaching.) In addition, you might have participants identify how they would use or modify a specific PLT activity to incorporate other new approaches in their teaching.

- **Site-Based Governance.** PLT is an ideal resource for educators whose districts or schools embrace site-based governance. In your workshop, help participants see how PLT's storylines, conceptual framework, indices, and state standards correlations can help them design units of instruction that meet state or district standards.

- **New Roles.** The wide variety of PLT activities allows the educator to explore new roles. To help your workshop participants see and explore this aspect of PLT, model activities that demonstrate different teacher roles – such as direct instruction, inquiry, leading, managing, or facilitating – and have participants identify and compare the roles.
- **Accountability.** All PLT lessons include assessment opportunities to help teachers determine whether their students have learned the concepts addressed. By using these assessments, educators can be confident that the activities also meet the specific grade level standards indicated in PLT correlations to state standards. During the curriculum planning time of your workshop, suggest that participants select the assessments they would use with specific activities to ascertain their students’ understanding of the concepts.

**Source:** Based on “How Does Project Learning Tree Support Systemic Reform?” by Bill Andrews, former Education Program Consultant, Office of Environmental Education, California Department of Education. *Branch*, Spring 1998.

## **2. Constructivist Teaching**

Constructivism, also known as constructivist teaching or 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.

Constructivism differs from the more “traditional” classroom teaching model, which emphasizes that students learn because teachers teach. Instead, constructivism views knowledge as a mental construct that is built on and added to by the learner. Thus, learners do not passively absorb knowledge, but dynamically adapt their understanding of new experiences in light of what they already “know.” Educators are responsible for facilitating learning experiences that enable students to manipulate materials, consider points of view, participate in group work, and focus on learning concepts.

Constructivism also includes another component: authentic assessment of student progress. Rather than paper-and-pencil tests as the only measure of student learning, assessment can include demonstrations of information, discussions, position papers, checklists of science process skills, and videotapes of presentations.

During your workshop, you can help educators ensure that their students are “constructing” attitudes, knowledge, and skills while participating in PLT activities. Following are some suggestions.

- While planning your workshop activities, adapt them to have as much of a local emphasis as possible so that participants can incorporate their experiences to their local situation. Point out to participants that PLT activities are meant to be flexible in this way.
- Model asking participants their ideas about a concept before doing an activity that teaches the concept. Discuss how this technique helps assess students’ prior knowledge and helps students make sense of the new concept based on what they already understand.
- Help participants identify ways the activities you conduct would enable students to build on their own experiences and knowledge.

- After conducting an activity, invite participants to brainstorm a list of open-ended questions they might ask their students. These kinds of questions encourage inquiry, and help students clarify their own thinking.
- During the curriculum planning time, have participants identify ways they could measure their students' learning using authentic assessment as part of a unit.

**Source:** Adapted from “Constructivism: A List of Teaching Strategies” by Dr. Darleen Stoner, Professor, Environmental Education, California State University, San Bernardino.

### **3. PLT and Thinking Processes**

Two essential skills needed by students are critical thinking and the ability to problem-solve. Rather than being taught *what* to think, students need to be taught *how* to think, and to develop a process for “thinking through” an issue.

PLT activities can help teach essential thinking processes because they provide opportunities for students to practice these processes. Following are specific science thinking processes from *Science Framework for California Public Schools*, California Department of Education (1990) that also apply in other subject areas.

**Observing** is the process by which we use our senses to gather information and construct a view of the world and how it works.

**Communicating** through language and symbols enables us to convey ideas to others in the present and for the future.

**Comparing** builds on the process of observing, and deals with the concepts of similarities and differences.

**Ordering** is the process of putting objects or events in a linear format.

**Categorizing** puts objects or events together in groups or classes using a logical rationale.

**Relating** involves seeing relationships between and among things — relationships such as interactions, dependencies, and cause-and-effect events.

**Inferring** deals with matters and ideas that are remote in time and space — not experienced directly.

**Applying** is the process that puts knowledge to use — sometimes in a practical sense, or sometimes tying together information into a theory or framework.

Teachers participating in your workshop will appreciate you helping them to:

- **Be aware of thinking processes that are involved in PLT activities.** Emphasis on thinking processes, as well as content, will help educators in PLT workshops to teach PLT concepts more effectively and provide the necessary rationale for using PLT in meeting district or school curriculum objectives. Help teachers identify thinking processes in the activities you present.
- **Identify thinking processes specifically.** Being specific about the processes involved in a particular activity will help teachers identify how it fits into their curriculum. For example, encourage teachers to recognize when students will compare renewable to nonrenewable resources, relate the presence of trees to local temperatures, or predict the effects of deforestation on soil erosion.

- **Recognize nonverbal evidence of thinking and problem solving.** While evaluating or assessing learning is an important part of teaching, results of written products and tests dominate student records of achievement. Teachers need assistance in identifying ways to give credit for and to record nonverbal behaviors that indicate thinking and learning. When debriefing PLT activities during the workshop, ask teachers to list nonverbal behaviors students might exhibit that would indicate their understanding and learning.
- **Recognize ways to adapt activities to various cognitive levels.** Children progress through cognitive stages acquiring the specific thinking processes. They do not skip stages. An awareness of general age ranges and their corresponding expectations for thinking ability is useful in adapting activities to specific grades. Teachers appreciate help in analyzing parts of an activity for thinking process requirements as well as knowledge requirements. “What’s going on in the students’ head?” should be a frequent question for teachers to ask when familiarizing themselves with PLT activities.
- **Appreciate knowledge students bring with them to a learning situation and help construct or reconstruct knowledge through experiences.** Teachers know that students do not come to an activity, lesson, or unit with a blank slate. Students have ideas, notions, and explanations for the world around them. These ideas work for them even though the interpretations may be alternative forms compared to those you accept as logical or true. Teachers appreciate your examples of typical “alternate understanding” that students may have about concepts or issues, and will want to explore with you any experiences they might provide to students that enable them to construct or reconstruct their knowledge.

**Source:** Adapted from a handout prepared by Dr. Karen Reynolds, Department of Education, San Jose State University for the “Advanced Training for PLT Facilitators Workshop,” January 1989.

## 4. Learning Styles

Learning style indicates how a person learns and likes to learn. Each style reflects genetic coding, personality development, motivation, and environmental adaptation. Style is relatively persistent in the behavior of individual learners. It can change, but does so gradually and developmentally. Learning style has cognitive, affective, and environmental elements. No learning style is better than another, each is simply different.

There are many different models of learning styles, but in general most models identify four different learning styles. Bernice McCarthy, in her 4MAT system, characterizes the four learning styles as shown below on "**Teaching to Learning Styles.**"

### **Learning Style 1: Imaginative Learner**

I like to: learn through personal experience; have meaning in what I learn; learn about things I value and care about; express my beliefs, feelings and opinions; and understand how what I learn affects me. I function best when interacting with others. My goal is to make the world a better place. My favorite question is “Why?”

**Teach by:** Giving them a reason; having them create and analyze an experience.

### **Learning Style 2: Analytic Learner**

I like to: get new and accurate information; deal in facts and right answers; know what the experts think; formulate theories and models; and have things exact and accurate. I function best when adapting to experts. My goal is to add to the world’s knowledge. My favorite question is “What?”

**Teach by:** Teaching it to them; integrating the experience and the material; giving them the facts.

### **Learning Style 3: Common Sense Learner**

I like to: do things; have ideas clear and understandable; find out how things work; test theories in the real world; and make things useful. I function best using kinesthetic awareness. My goal is to make things happen. My favorite question is: “How?”

**Teach by:** Letting them try it; giving them prepared materials and have them add “something of themselves” to it.

### **Learning Style 4: Dynamic Learner**

I like to: connect things together; do things that matter in life; teach other people what I know; take some risks; and make what is already working work better. I function best by acting and testing experience. My goal is to challenge complacency. My favorite question is: “So what?”

**Teach by:** Letting them teach it to themselves and someone else; having them analyze for relevance and originality, then share with each other.

During your workshop, you can help educators use PLT and learning styles in the following ways:

- Model using the four different learning styles in your presentation. When planning your workshop, identify the learning style most prominent for each workshop element. You need not represent the styles equally, but be sure to exemplify each one.
- Using the previous teaching to learning styles information, help each of the participants identify which learning style seems to best describe him or her. Keep in mind that most learners use a combination of styles.
- Suggest that participants identify a particular student or other person they know that seems to fit each of the learning styles. Make sure that participants understand that the point of this exercise is to help them have a concrete picture of each of the styles, not to stereotype their students.
- Encourage participants to identify which styles are prominent in each PLT activity presented at the workshop. Ask participants to suggest ways to extend each PLT activity presented to get at some of the other learning styles.
- During the lesson planning time, have participants identify a group of lessons that focus on different learning styles to teach together as part of a unit.

### **Sources:**

Keefe, James W. (ed.). *Profiling and Utilizing Learning Style*. Reston, VA: National Association of Secondary School Principals, 1988.

McCarthy, Bernice. *The 4MAT System: Teaching to learning styles with right/left mode techniques*. 2nd ed. Oak Brook, Ill: EXCEL, 1981.

## **5. Multiple Intelligences and PLT**

The theory of multiple intelligences, developed by Howard Gardner and his associates, holds that every individual possesses several different and independent capacities for solving problems and creating products. Gardner has named these capacities "intelligences" and has scientifically identified eight of them, grouped into four categories described as language-related, personal relationships, object-related, and naturalistic intelligences.

The language-related intelligences include the verbal/linguistic and musical/rhythmic. These two intelligences are "object free," meaning that thoughts are represented through sound based communication and symbolic representations of those sounds.

The personal relationships group consists of interpersonal and intrapersonal intelligences. These are the people-centered intelligences. They reflect the personal vision of self, expectations of others, accepted norms of thinking and acting, and the cultural pressures that shape behavior.

Object-related intelligences include bodily/kinesthetic, visual/spatial, and logical/mathematical. This designation means that the basic concepts and procedures are rooted in physical manipulation of concrete objects that result in a defined product. "Rules of the game" for using the objects to solve a problem or make a product are important to this group.

Gardner describes the naturalist intelligence as an ability to differentiate the patterns and characteristics among natural objects in the environment, recognize flora and fauna, make distinctions in the natural world, and observe and classify plants. Charles Darwin is often cited as an example of a person who possesses a naturalist intelligence.

As with other instructional strategies, PLT has already incorporated many of the key aspects of multiple intelligences theory into its activities. Try tapping into these multiple intelligences in your workshops.

One of the simplest ways to include the notion of multiple intelligences in your workshop is to ask participants to "represent" the data they have collected during a PLT activity using one of the eight intelligences. Each group can be invited to use the intelligence with which they are most comfortable or you can assign a different intelligence to each group. By doing this, you encourage them to really let their personalities shine! Some will dance, sing, draw pictures, make models, create graphs, or do calisthenics to report their findings.

**Source:** Adapted from an article in PLT's the *Branch* prepared by Cindy Ybos and Patty Watts, Louisiana PLT. 1998.

## **6. Cooperative Learning**

Cooperative learning is a model of instruction in which students work together in small groups to achieve a common learning goal. PLT activities can help a teacher implement cooperative learning because many of the lessons can be conducted with cooperative groups. There are many different models of cooperative learning, and teachers should set up and use it in the way they feel most comfortable.

Teachers who use or are interested in using cooperative learning will appreciate your addressing the following in the workshop:

- **The cooperative learning potential of PLT activities.** Whenever possible, model using cooperative learning in a particular lesson by setting it up for teachers to experience it that way during the workshop. After presenting each lesson (as cooperative learning or not), have teachers discuss how the lesson could be modified to better facilitate cooperative learning. Use Appendix 11 of the PreK-8 Guide, “Successful Cooperative Learning Steps,” as a lead-in to the discussion.
- **Grouping issues.** In cooperative learning, the teacher must decide on how the groups will be formed, how large the groups should be and how long groups should stay together. For example, the groups may be randomly formed or assigned by the teacher, and groups may stay together for only one class period, or for six weeks. Model different ways of grouping in the workshop, then discuss the advantages and disadvantages of various ways of grouping, of group sizes, and of the group duration.
- **Structuring the learning task.** For each PLT activity experienced in the workshop, help teachers identify how the learning task could be structured so that it is truly cooperative, with successful completion of the task requiring each group member’s participation.

## **7. Early Childhood Education and PLT**

The introduction of environmental education at the early childhood level reaches children at a key developmental period in their lives. Early experiences with the natural world have been linked with the development of imagination and a sense of wonder and curiosity.

Exploring nature is a sensory experience. By inviting children to touch, hear, taste, and view their surroundings, they experience the natural world directly. These vital experiences in the early childhood years have the potential for influencing life-long attitudes, values, and patterns of behavior towards the natural world.

More than thirty PLT activities can be used as-is or modified for early childhood education, especially those activities that emphasize curiosity, discovery, wonder, self-expression, celebration, and hands-on experiences. In addition, educators will have the most success introducing environmental education to young learners if they:

- Keep experiences simple.
- Infuse environmental education into all aspects of the early childhood program.
- Provide options.
- Keep children actively involved, remembering that they learn from play.
- Integrate music and movement, art, and literature into activities.
- Focus on relationships and the wonders and mysteries of nature.
- Let children use their imaginations to express dramatic and creative interests

- Involve use of all the senses.
- Go outside often – around the school, neighborhood, nearby park.
- Model interest, caring, and respect for the natural environment.
- Take fears seriously. Reassure children that may be hesitant to try something new.
- Praise and celebrate and have fun.

When planning for a PLT workshop for early childhood educators, make use of the many activities included in the PreK-8 Guide. Check Index 2 – Grade Level Index for ideas of which activities to model. Choose activities that include options for learning through hands-on experiences either outside or in the classroom. Demonstrate activities that use art, music, books, and even snacks! Be sure to allow time to discuss how teachers would use or modify an activity for their group or setting.

## **8. Using PLT to Teach Technology**

In today’s world of information technologies, teachers and students alike need to learn and practice using a variety of technological tools. Planning a workshop to introduce PLT activities and technology connections can be a welcome invitation to educators hoping to bring both EE and technology to their classrooms.

As of 2016, the PreK-8 Guide provides a variety of ideas for integrating technology into activities. Appendix 8 on “Technology Connections” provides an overview of technology use within the context of PLT, and a description of the following technology tools:

- Word Processing Software
- Spreadsheet/Database Software
- Presentation Software
- Graphics Software
- Graphic Organizer Software
- Digital/Video Cameras
- Peripherals
- Internet Resources

Within the activities, the technology icon highlights the suggestions for using technology, while the PreK–8 Guide’s Index 4 – The Technology Connections Index provides a quick reference to activities that use specific technology tools. Consider demonstrating these technology tools as you model activities in your workshop.

## **9. Using PLT to Support Differentiated Instruction**

Through differentiated instruction, teachers are able to provide challenges for gifted learners, while ensuring that lessons are comprehensible and accessible to those still acquiring English language skills and to students with learning disabilities. PLT’s *PreK-8 Environmental Education Activity Guide* provides educators with a curriculum that facilitates teaching to a variety of levels and enables students to become a community of learners.

Although teachers have always addressed students who fall within a continuum of abilities, the movement toward inclusion in the classroom has brought together students representing a greater range of differences than ever before. For this reason, it is not uncommon to see students in one classroom learning the same key concepts but accessing the information through a wide and creative range of divergent activities. Teachers

who differentiate instruction incorporate paired and cooperative team activities, hands-on learning, the use of realia (tangible, 3-dimensional physical objects of, or from, the real world), alternative and authentic forms of assessment, adapted instructional strategies, and accommodations into their lessons.

All Project Learning Tree activities apply current “best-practices” in differentiating curriculum; however, several activities were reviewed and identified as particularly appropriate for the diversity of the classroom. **Appendix G** provides a list of these PLT activities in the PreK–8 Guide.

Activities in the PreK-8 Guide that include differentiation are noted with the appearance of this icon  in the sidebar. In addition, the sidebar lists the methods that are used in the activity to enhance differentiating instruction. Within the activities, suggestions are made as to how to incorporate the methods listed in the sidebar. These suggestions are highlighted throughout the activity by the differentiated instruction  icon.

Differentiating instruction methods used in the activities throughout the PreK–8 Guide include:

- highlighting key vocabulary
- creating links to prior knowledge
- utilizing paired/cooperative learning
- providing nonlinguistic representations
- using realia and hands-on learning
- making curricular and personal connections
- developing oral, reading, and writing skills, and
- incorporating higher order thinking opportunities.

Please see Appendix 7, Differentiated Instruction, in the PreK-8 Guide for a description of each of these methods and for additional information on this topic. The following sections are also included in this appendix: “Working with Exceptional Students,” “English Language Learners (ELL),” and “PLT and the Gifted Student.”

## **10. Focus on Reading with PLT**

PLT supports the important role that reading plays in the classroom. Activities accompanied by literature can provide students with a meaningful way to expand their learning and imagination, while providing educators with tools needed to address current education initiatives. PLT has made reading connections a leading feature of the *PreK-8 Environmental Education Activity Guide*.

For each activity, a list of three to seven relevant books is provided at the end of the activity in a highlighted box, entitled “Reading Connections.” These books were selected to assist teachers in meeting reading goals and to build upon concepts learned in the activities. Authors, titles, annotations, grade level recommendations, and ISBN numbers are provided for each book.

Additional books correlated to each activity, but not found in the highlighted box, can be found at PLT’S website [www.plt.org](http://www.plt.org) under the PreK–8 Guide’s resources. There are two lists found at the website; one is categorized by author and the other by PLT activity.

Several of the PLT activities include a “read-aloud.” Research indicates that reading aloud motivates children to want to learn to read, assists in vocabulary and language development, and increases content knowledge. Reading a story aloud also presents great opportunities for classroom discussions, role plays, shared readings, art and crafts, and singing songs. In these read-alouds, educators are given additional

techniques for effectively expanding upon the reading with their students. In “Trees as Habitats,” for example, a “read aloud” is included with the book, *Good-Night Owl!* Use of this book has been integrated into the activity and discussion questions have been added.

Read-alouds include stories for teachers to read aloud or for students to read themselves, depending on the grade level. With these stories and the discussion questions provided in the activities, educators can introduce new vocabulary and concepts, expand on content knowledge, and assess student comprehension. Activities that have stories within them include “Sounds Around,” “The Forest of S.T. Shrew,” “Tale of the Sun,” “Nothing Succeeds Like Succession,” “Earth Manners,” and “A Look at Lifestyles.”

For more information on how PLT supports reading, please see “Reading Connections” in the Introduction of the PreK-8 Guide.

## **11. Addressing Controversial Issues**

When teaching about the environment, many educators avoid interesting topics and issues because they are reluctant to deal with controversy in the classroom. If you wish, your PLT workshop can provide ways for educators to examine ways to teach and cope with controversial topics. You might, for example:

- Help participants identify potential controversial issues imbedded in the PLT activities you present.
- Lead a discussion about the benefits and pitfalls of teaching about controversial issues. Help participants identify ways for handling each of the pitfalls. You might use Appendix 12 of the PreK-8 Guide, “Teaching Controversial Issues,” as a discussion starter.
- Invite resource specialists to the workshop to help explain their perspectives on the topic. Help participants discuss arguments for and against each perspective. See Section III for information on inviting a resource specialist.
- Encourage participants to brainstorm a list of possible concerns that parents, administrators, the community, or the participants themselves would have about teaching a particular controversial issue. Then help them brainstorm ways to address each of the concerns.
- During the lesson-planning portion of the workshop, allow time for participants to begin a plan for addressing a controversial issue that relates to a unit of study.

## **12. Leading Successful Outdoor Activities**

Taking students outdoors allows them to personally experience and examine the natural world. These experiences are critical for helping students understand the world around them and can have a positive impact on students’ behavior and academic performance (learn more about PLT’s Every Student Learns Outside initiative at [www.learnoutside.org](http://www.learnoutside.org)). This being said, many educators still shy away from outdoor activities because these activities present management or other problems. For example, when students leave their familiar classroom for an outdoor activity, they often assume that the classroom rules no longer apply.

To help educators become more comfortable with leading successful outdoor activities, provide ways of addressing this issue in your workshop. Following are some suggestions.

- At the workshop introduce participants to the outdoors, and help them see the importance and advantages of working outside. After each outdoor activity, discuss how the activity and the learning would have been different if it had been conducted indoors.
- Have participants brainstorm a list of the pluses and minuses of leading outdoor activities. Divide participants into small groups and have them think of ways to turn the minuses into pluses.
- Have participants read Appendix 14 of the PreK-8 Guide, “Teaching Out-of-Doors,” and brainstorm other techniques to add to the list.
- To help participants feel more comfortable working outdoors, invite a resource specialist to answer questions and provide information about the outdoor site, such as the names of trees or interesting natural history.

### **13. A Focus on Urban and Community Forests**

The trees around our homes and schools, along streets, and in parks and other public places are part of what is called the “urban forest.” This complex community of animals and plants includes trees established by people, as well as the remnants of native vegetation.

Together both the native and non-native trees shape the quality of life in urban environments, and perform important functions, such as:

**Temperature Control.** Urban areas are often called “heat islands” because the buildings, asphalt, and concrete can significantly increase the air temperature. Trees help to reverse this effect, and act as nature’s air conditioners. In fact, tree-covered areas can reduce temperatures as much as 25 degrees in the summer.

**Air Quality.** Traffic, construction, industrial, agricultural, and other activities in urban areas create airborne dust, and raise levels of carbon dioxide and other pollutants. Trees can help air quality in two ways: their leaves collect dust, and growing trees also take up carbon dioxide during photosynthesis and store it in the form of glucose and cellulose, thus reducing ambient levels. However, trees are also sensitive to air contamination—discolored leaves or die-back of branches and leaves are signs of stress.

**Wind Control.** A dense planting of trees can reduce wind speed around buildings, playgrounds, and streets and offers protection against soil erosion.

**Sound and Light Controls.** Planted along streets or near homes, schools, and parks, trees filter light and sound by acting like a shield to slow or reflect light and sound waves.

**Wildlife Cover.** Many kinds of wildlife depend on the urban forest habitat to provide food and shelter necessary for their survival.

When planning a PLT workshop that focuses on the urban forest, consider the following:

- Collaborate with community organizations, agencies, or advocates working on urban forest issues to establish a local partnership and to bring in a local perspective.
- Host the workshop in an urban park, at a school with established or new trees, or in conjunction with a new tree planting to help you link all elements of PLT’s philosophy of “awareness to action.”

- Highlight activities that provide a deeper understanding of how the “forest” co-exists with the urban setting, helping educators see the value of studying the trees on their school grounds and getting students outside.
- Invite a member of a native plant organization, an arborist, or landscape architect to help with your workshop, or to identify trees around the workshop site.
- Gear the PLT activities you choose toward:
  - Developing an awareness of trees and urban forestry.
  - Increasing understanding of the importance of urban trees and their influence on temperature, air quality, wind, light and sound controls and habitat for wildlife.
  - Examining the interdependence of the natural and built environment within urban forests.
  - Developing a sense of personal responsibility for the urban forest.
- Integrate information on PLT’s Urban and Community Forestry Education Resources, found by going to [www.plt.org](http://www.plt.org) and clicking on Special Initiatives/Urban Forestry. The website includes an annotated bibliography and links to websites of urban and community forestry organizations and similar organizations to help enhance the teaching of the PLT activities that are related to urban and community forestry. Additional information on this initiative can be found in Appendix 6 “PLT Urban and Community Forestry Education Resources” in the PreK-8 Guide



## *Appendix A: Sample Workshop Forms*

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These are the forms you will need to plan and conduct your workshop:

- Workshop Proposal Form
- Facilitator Coversheet Form
- Co-Facilitator Form
- Participant Information Form
- Participant Evaluation Form
- Sample Certificate
- Facilitator Expense Report Form
- Presentation / Exhibit Report Form
- Sample Receipt

# PROJECT LEARNING TREE WORKSHOP PROPOSAL

Send to: **Matt Schnabel - PLT State Coordinator**  
**P.O. Box 21707**  
**Columbia, SC 29221**

OR

**Fax # (803) 896-8896**  
**or**  
**E-mail: mschnabel@scfc.gov**

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Business phone (\_\_\_\_) \_\_\_\_\_ Home phone (\_\_\_\_) \_\_\_\_\_

Fax number (\_\_\_\_) \_\_\_\_\_ E-Mail \_\_\_\_\_

Date(s) of proposed Workshop \_\_\_\_\_ Times \_\_\_\_\_

Location \_\_\_\_\_ County \_\_\_\_\_

Facilitator(s) \_\_\_\_\_

Audience represented \_\_\_\_\_

Proposed number of participants \_\_\_\_\_

Number of PLT Guides needed:

- \_\_\_\_\_ PreK-8
- \_\_\_\_\_ Environmental Experiences for Early Childhood
- \_\_\_\_\_ Energy and Society Kit
- \_\_\_\_\_ Exploring Forestry Careers: Green Jobs
- \_\_\_\_\_ Exploring Environmental Issues: Focus on Forest
- \_\_\_\_\_ Southeastern Forests and Climate Change
- \_\_\_\_\_ Exploring Environmental Issues: Municipal Solid Waste
- \_\_\_\_\_ Exploring Environmental Issues: Focus on Risk
- \_\_\_\_\_ Exploring Environmental Issues: Places We Live
- \_\_\_\_\_ Global Connections: Forests of the World
- \_\_\_\_\_ E-Unit (K-2<sup>nd</sup> or 3<sup>rd</sup>-5<sup>th</sup> or 5<sup>th</sup>-8<sup>th</sup>)

**Proposed Workshop Format/Agenda.** ( Please use the back of this sheet or attach another sheet if needed):  
Specify which PLT activities you plan to use.

---

**Survey :** How did your contact learn about Project Learning Tree Workshops?

\_\_ website \_\_ presentation \_\_ exhibit \_\_ repeat workshop from previous year

Other:

**PLT Web Site Information :** The information given on this form will be used to announce your workshop on the National and State PLT web site. If you wish to include more information, write a brief description (one or two sentences) about your workshop.



# PROJECT LEARNING TREE® FACILITATOR COVER SHEET

*(Please fasten securely to accompanying PARTICIPANT INFORMATION and PD EVALUATION FORMS)*

## I. Facilitator Information

Name: _____ Address: _____ _____	Name: _____ Address: _____ _____	Name: _____ Address: _____ _____
Email: _____ Phone: _____	Email: _____ Phone: _____	Email: _____ Phone: _____

## II. Professional Development Information

### Event Type

Date(s) \_\_\_\_\_

Location (City, State) \_\_\_\_\_

# of participants \_\_\_\_\_

# of participant information forms attached \_\_\_\_\_

# of PD evaluation forms attached \_\_\_\_\_

In-Person       Blended (In-Person & Online)       Online only

Select the description that most closely represents this professional development event.

Up-to-half day (up to 4 hours)       Up-to-five days (17-30 hours)

Full day (5-8 hours)       More-than-five days (more than 30 hrs)

Two full days (9-16 hours)       College or university course

#### # PLT Guides Distributed:

- |   |   |
|---|---|
| <input type="checkbox"/> Early Childhood<br><input type="checkbox"/> PreK-8<br><input type="checkbox"/> Energy & Society<br><input type="checkbox"/> Focus on Forests<br><input type="checkbox"/> Forests of the World<br><input type="checkbox"/> Places We Live<br><input type="checkbox"/> Focus on Risk | <input type="checkbox"/> Solid Waste<br><input type="checkbox"/> Green Jobs<br><input type="checkbox"/> Biodiversity<br><input type="checkbox"/> Biotechnology<br><input type="checkbox"/> Southeastern Forests<br>and Climate Change<br><input type="checkbox"/> E-Unit Code |
|---|---|

## III. Professional Development Event Summary: *(For PLT State Coordinator's use. Below are examples of information you may want to collect for your state PLT program. Adapt the following for your own purposes as you wish.)*

1. Attach an agenda or briefly outline your PD event/workshop format, specifying which PLT activities from the PreK-8, secondary modules, or other PLT materials you included and why. Describe what factors influenced the topics and strategies that you used and the outcomes and objectives you were intending to meet.
2. Summarize expenses and/or revenues involved in your workshop. Include any in-kind support, i.e. contributions or personnel from agency, community, industry, or other partners.
3. Please list academic, continuing education, or other credits provided, if any.
4. Tell us your overall view of the workshop – include problems/successes and your assessment of the participants' responses.
5. I would ~~would~~ not be interested in facilitating another PLT workshop because:





# PROJECT LEARNING TREE® PARTICIPANT INFORMATION

Thank you for sharing some information about yourself. We use this information to design educational materials and professional development opportunities that are valuable to our educators. Please use a pen and print clearly.

## I. Professional Development Information

Date: \_\_\_\_\_

### PD Event Type

Location (City, State): \_\_\_\_\_

Up-to-half day  
(up to 4 hours)

Up-to-five days  
(17-30 hours total)

Facilitators: \_\_\_\_\_

One full day or equivalent  
(5-8 hours)

More-than-five days  
(more than 30 hours total)

\_\_\_\_\_

Two full days or equivalent  
(9-16 hours total)

College or university course

\_\_\_\_\_

## II. Participant Information

Name: \_\_\_\_\_

School/Organization: \_\_\_\_\_

Preferred Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Preferred Email: \_\_\_\_\_

1. My position is:  Elementary school teacher    Middle school teacher    High school teacher    School administrator  
 (check all that apply)  Early childhood educator    Pre-service student    Pre-service faculty    Homeschool educator  
 Nonformal educator (e.g. nature center staff)    Other college or univ. faculty (e.g. natural resources)  
 Natural resource professional    Tree Farmer or landowner  
 Youth group leader (e.g. Scouts, 4-H)    Other, describe: \_\_\_\_\_

2. In what subjects will you use PLT?  Science    Social Studies    Mathematics  
 (check all that apply)  Reading    Language Arts    Visual Arts  
 Special Education    Performing Arts    Physical Education  
 Other, describe: \_\_\_\_\_

3. How many students do you reach in a typical year? \_\_\_\_\_

4. What is the primary demographic for your students?    Urban    Suburban    Rural

5. How did you learn about PLT?  Colleague    School Administrator    Conference  
 (check all that apply)  Social Media    Online Research    Webinar  
 Advertisement    Professional Organization  
 Newspaper/TV/radio    Journal/publication/newsletter  
 Other, describe: \_\_\_\_\_



# PROJECT LEARNING TREE®

## PROFESSIONAL DEVELOPMENT EVALUATION

Date(s): \_\_\_\_\_ Location (City, State): \_\_\_\_\_

Facilitator(s): \_\_\_\_\_

**Directions:** Please read each statement and select the response that best describes your experience.

<b>Setting</b>	Disagree	Neutral	Agree	Not Applicable		
1. The workshop location was easy for me to get to.	1	2	3	5	n/a	
2. The amenities at the workshop location met my needs.	1	2	3	4	5	n/a
3. The workshop setting was conducive to my learning.	1	2	3	4	5	n/a
<b>Materials</b>						
4. The PLT guides(s) meet the academic standards important to my school or audience.	1	2	3	4	5	n/a
5. The PLT guide(s) helped me to learn the content.	1	2	3	4	5	n/a
6. Doing the PLT activities during the workshop helped me to learn the content.	1	2	3	4	5	n/a
7. The information presented helped me to learn the content.	1	2	3	4	5	n/a
8. The handout(s) helped me to learn the content.	1	2	3	4	5	n/a
<b>Facilitator</b>						
9. The facilitator demonstrated respect for all workshop participants.	1	2	3	4	5	n/a
10. The facilitator appeared to be knowledgeable about PLT and its activities.	1	2	3	4	5	n/a
11. The facilitator appeared to be knowledgeable about the session content.	1	2	3	4	5	n/a
12. The facilitator was prepared to host the workshop.	1	2	3	4	5	n/a
13. The facilitator used instructional strategies to support my learning.	1	2	3	4	5	n/a
14. The facilitator effectively demonstrated how to conduct each activity.	1	2	3	4	5	n/a
15. The facilitator asked debriefing questions at the end of each activity.	1	2	3	4	5	n/a
16. The facilitator provided adequate time for me to plan how to integrate PLT into my curriculum or programs.	1	2	3	4	5	n/a
<b>Overall</b>						
17. The workshop was fun.	1	2	3	4	5	n/a
18. The workshop met my needs.	1	2	3	4	5	n/a
19. I felt engaged throughout the workshop.	1	2	3	4	5	n/a
20. I feel prepared to use PLT activities with my students.	1	2	3	4	5	n/a
21. I plan to use PLT with my students within the next 3 months.	1	2	3	4	5	n/a
22. I would like to participate in additional PLT professional development.	1	2	3	4	5	n/a
23. I will recommend this workshop to a colleague.	1	2	3	4	5	n/a

**Comments?** We would love to hear them! **Name:** \_\_\_\_\_

Check if you would like to be contacted regarding your workshop evaluation.

Contact Email: \_\_\_\_\_ Contact Phone: \_\_\_\_\_

# Certificate of Completion

is hereby granted to:

\_\_\_\_\_

In recognition of your successful completion of  
\_\_\_\_\_ hours of professional development at a(n)  
\_\_\_\_\_

**Project Learning Tree Workshop.**



Date: \_\_\_\_\_  
Location: \_\_\_\_\_  
Facilitator: \_\_\_\_\_

# **Project Learning Tree Facilitator In-Kind/Expense Sheet**

Name \_\_\_\_\_ Phone (\_\_\_\_) \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Workshop Date(s) \_\_\_\_\_ Location \_\_\_\_\_

## **IN-KIND**

### TRAVEL IN-KIND:

Date	Mileage	From	To
_____	_____	_____	_____
_____	_____	_____	_____

Total Travel Expense \_\_\_\_\_ miles @ (0.575/mile) = \$ \_\_\_\_\_

### OTHER IN-KIND: (Estimated salary or # of hours, materials, etc.)

	Amount
_____	\$ _____
_____	\$ _____

\*\*\*\*\*

## **REIMBURSABLE EXPENSES**

### TRAVEL EXPENSES: (*Only Reimbursable Travel Expenses*)

Date	Mileage	From	To
_____	_____	_____	_____
_____	_____	_____	_____

Total Travel Expense \_\_\_\_\_ miles @ (0.575/mile) = \$ \_\_\_\_\_

### OTHER EXPENSES: (*Only Reimbursable Expenses. Attach receipts*)

	Amount
_____	\$ _____
_____	\$ _____

\*\*\*\*\*

**TOTAL ALL** \$ \_\_\_\_\_

\_\_\_\_\_  
Facilitator Signature

\_\_\_\_\_  
Coordinator Approved

## Project Learning Tree Presentation/Exhibit Report

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Business Phone: (\_\_\_\_) \_\_\_\_\_ Home Phone (\_\_\_\_) \_\_\_\_\_

Fax number (\_\_\_\_) \_\_\_\_\_ E-mail: \_\_\_\_\_

Co-facilitators or exhibitors: \_\_\_\_\_

Presentation \_\_\_\_ Exhibit \_\_\_\_\_ Other \_\_\_\_

Name of Event: \_\_\_\_\_

Location: \_\_\_\_\_

Date of presentation/exhibit: \_\_\_\_\_

Number of People reached: \_\_\_\_\_

Briefly describe the event and your participation in it. Include any activities used:

Send to: Matt Schnabel – PLT State Coordinator  
P.O. Box 21707  
Columbia, SC 29221

or Fax to # (803) 896-8896

E-mail: [mschnabel@scfc.gov](mailto:mschnabel@scfc.gov)



# *Receipt of Payment*

Project Learning Tree  
P.O. Box 21707  
Columbia, SC 29221

Date: \_\_\_\_\_ Cash \_\_\_\_\_  
Check No. \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Invoice # \_\_\_\_\_

For:

Amount Received: \_\_\_\_\_

Received by: \_\_\_\_\_ Date: \_\_\_\_\_



2121 K Street NW, Suite 750  
Washington, D.C. 20037



### Photo and Video Release Form

Individuals over the age of 18 may sign for themselves; those under 18 must have this release signed by their parent or guardian.

I hereby consent to the use of photographs and/or video of my child/dependent/self in any editorial and/or promotional material produced and/or published by or about Project Learning Tree (PLT), a program of the Sustainable Forestry Initiative Inc. (SFI).

I expressly grant to SFI and PLT and PLT state sponsoring organizations unlimited permissions to use, re-use, publish, and re-publish information about me and reproductions of my likeness (photographic or otherwise), with or without my name, for purposes of advertising, public relations, marketing, trade, or any other lawful use. I waive the opportunity to inspect and/or approve the finished product, promotional copy, or other use that it may be used in connection therewith.

I understand that signing this release does not guarantee publication of a photo and/or video.

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Name of person photographed (PLEASE PRINT) Age (if minor)

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Address

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City, State, and Zip Code

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Signature Date

Consent of parent or legal guardian if above individual is a minor.

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Signature Relationship



## *Appendix C: Sample Workshop Agendas*

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This appendix contains sample agendas that you can use to plan and conduct your workshop.

- 6-hour workshop for Elementary Science for Middle Grades 1 – 5
- 6-hour Split workshop for Pre-Service Teachers
- 6- hour K-8 workshop with Participant Lead Activities
- 3 – hour Risk Agenda
- 6-hour workshop for large groups (rotating stations)
- 3-hr Environmental Experiences for Early Childhood
- 6-hr Joint Growing UP WILD and PLT Environmental Experiences for Early Childhood Workshop
- Blended online/face-to-face PreK-8 for Wildlife, Forestry, Environmental Natural Resources, & Parks & Recreation majors



Project Learning Tree Workshop  
**Elementary Science for Middle Childhood (Grades 1-5)**

Kingsburg Elementary School, Sumter, SC

June 13, 2008 – 8:30 to 3:00

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<b>Time</b>	<b>Activity</b>	<b>Facilitators</b>
<b>8:30</b>	<b>Introduction to facilitators and PLT</b> How Can PLT Help You Reach Your Goals? What is PLT? A brief history and discussion of PLT's program, mission and goals, GreenWorks! grants, and more.	<b>Jerry Shrum</b>
<b>9:00</b>	<b>Icebreaker - Activity # 5 – Poet-tree</b> Using the environment to teach language arts by writing various types of poems.	<b>Jerry Shrum</b>
<b>9:45</b>	<b>Activity #25 Birds and Worms</b> Using a game of camouflage, students practice their graphing skills	<b>Kathy Osmond</b>
<b>10:45</b>	<b>Activity #46 School Yard Safari</b> Learn how to use your schoolyard as a learning center to take "Safari's".	<b>Jerry Shrum</b>
<b>11:45</b>	<b>Lunch</b>	
<b>12:45</b>	<b>Curriculum Planning – Identifying PLT Activities</b> In this activity, participants will learn how to use their PreK-8 Activity Guide to identify many activities that they may use in their classrooms.	<b>Jerry Shrum/ Kathy Osmond</b>
<b>1:15</b>	<b>Activity #44 – Water Wonders</b> A unique way of looking at the Water Cycle by becoming a water molecule. Participants will act out their journey through the water cycle.	<b>Kathy Osmond</b>
<b>2:15</b>	<b>PLT Activity #18 "A Tale of the Sun"</b> Using Indian folklore, participants look at adaptations of animals.	<b>Jerry Shrum</b>
<b>3:00</b>	<b>Wrap Up, Evaluations</b> What else does PLT offer? Find out about grants, Educator of the Year, and other programs in PLT.	<b>Jerry Shrum</b>

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#### **TODAY'S FACILITATORS**

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**Jerry Shrum – SC PLT Coordinator**  
S.C. Forestry Commission  
(803) 896-8892  
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**Kathy Osmond – Sheridan Elementary,**  
Orangeburg, SC  
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For more information about PLT and resources for your activities, check out our web site at :

**WWW.PLT.ORG**

**Project Learning Tree PreK-8 Curriculum Workshop  
USC Wardlaw 274-D**

Session 1: April 10<sup>th</sup> 1-4  
Session 2: April 17<sup>th</sup> 2-4pm

**Monday, April 10th**

**Facilitators: Beth Foley and Chanda Cooper**

1:00pm	Introduction, participant information forms, photo release forms
1:10pm	Activity 13: We All Need Trees (Beth)
1:40pm	Activity 63: Tree Factory (Chanda)
2:10pm	Activity 76: Tree Cookies (Beth)
2:40pm	Hike Through the Guide (Chanda)
3:10pm	History of PLT and Website (Beth)
3:40pm	Explain Homework Assignment, Assign Groups and Activities (Chanda)
4:00pm	Dismiss

**Homework (1 hour):** Student groups prepare to lead one of the following 30-minute activities during the next class session (have students make their selections before class ends so everyone has a different activity):

- Activity 3: Peppermint Beetle
- Activity 5: Poet-Tree
- Activity 9: Planet Diversity
- Activity 14: Renewable or Not
- Activity 25: Birds and Worms
- Activity 27: Every Tree for Itself
- Activity 44: Water Wonders

**Monday, April 17**

**Facilitators: Beth Foley and Chanda Cooper**

2:00pm	Group 1 Student-led Activity and Debrief
2:30pm	Group 2 Student-led Activity and Debrief
3:00pm	Group 3 Student-led Activity and Debrief
3:30pm	Group 4 Student-led Activity and Debrief
4:00pm	Participant Surveys, Certificates, and Dismiss





**PreK-8 PLT Workshop  
South Carolina Science Council Conference  
November 2, 2016**

<b>9:00</b>	<b>Welcome &amp; Ice Breaker: Activity # 13 We All Need Trees</b>	<b>Clark</b>
<b>9:15</b>	<b>Activity # 44 Water Wonders</b>	<b>Pasco</b>
<b>9:45</b>	<b>What is PLT?</b>	<b>Schnabel</b>
<b>10:00</b>	<b>Hike Through the Guide</b>	<b>Clark</b>
<b>10:30</b>	<b>Activity # 27 Every Tree for Itself</b>	<b>Pasco</b>
<b>11:00</b>	<b>Break</b>	
<b>11:15</b>	<b>Activity # 25 Birds &amp; Worms</b>	<b>Schnabel</b>
<b>11:45</b>	<b>A look at on-line resources &amp; group assignment</b>	<b>Clark</b>
<b>12:00</b>	<b>Lunch</b>	
<b>1:00</b>	<b>Activity # 63 Tree Factory</b>	<b>Pasco</b>
<b>1:30</b>	<b>Time to work on group assignment</b>	
<b>2:30</b>	<b>Group presentations</b>	<b>Clark</b>
<b>3:45</b>	<b>Wrap Up and Evaluations</b>	<b>Schnabel</b>
<b>4:00</b>	<b>Adjourn</b>	

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**TODAY'S FACILITATORS**

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SC Forestry Commission  
EE Assistant Coordinator  
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**Focus on Environmental Risk  
Project Learning Tree  
September 13, 2006**

- 3:30** Welcome, Agenda Overview,  
PLT History, mission & Goals,  
Introduction Secondary Modules
- 4:00** Introduction – My Greatest Risk
- 4:15** Activity #1 – What Is Risk? Parts B and C
- 5:00** Activity 2 - “Things Aren’t Always What They  
Seem” – Part A
- 5:50** “Special Topic: Chlorine” Activity on Risk/Benefit  
Analysis
- 6:00** Debrief, Questions, Evaluations, The End
- 

**Today’s Facilitator:**

**Jerry L. Shrum - SC Forestry Commission  
Environmental Education Coordinator  
SC PLT Coordinator  
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Columbia, SC 29221  
(803) 896-8892 phone  
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**PROJECT LEARNING TREE WORKSHOP FOR  
NATURAL RESOURCE PROFESSIONALS  
Harbison State Forest Environmental Education Center  
May 3, 2006 – 9:00 to 4:00**

**8:30 – 9:00 Registration**

**9:00 – 9:30 Welcome and Introductions: Shrum**  
What is Project Learning Tree (History, Mission & Goals)  
Forestry in South Carolina

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**Concurrent Sessions: Participants will be divided up into groups and rotate through the following sessions every 45 minutes.**

**9:30 to 10:15 Session 1**

Group A - Activity #51 – Make Your Own Paper Windhorn  
Group B - Activity #76 – Tree Cookies & #27 Every Tree For Itself Shrum

**10:20 to 10:30 Break**

**10:30 to 11:15 Session 2**

Group A - Activity #76 – Tree Cookies & #27 -Every Tree For Itself Shrum  
Group B - Activity #51 – Make Your Own Paper Windhorn

**11:15 to 12:00 Session 3**

Group A – Making Conservation Education Work Beavans  
Group B – Activity # 33 – Forest Consequences Barnette

**12:00 to 1:00 Working Lunch (Project Learning Tree’s New Guide & Other PLT Resources) Shrum**

**1:00 to 1:45 Session 3**

Group A – Activity # 33 – Forest Consequences Barnette  
Group B – Making Conservation Education Work Beavans

**1:45 to 3:45 Burning Issues demonstration**

Shrum/Beavans

**3:45 to 4:00 Q&A, Evaluation, Adjourn**

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**Today’s Facilitators:**

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Gwen Beavans  
US Forest Service  
(864) 427-9858

Mike Windhorn  
Bowater Inc.  
(803) 981-8099

Billy Barnette  
Georgia Pacific  
803-364-3470

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**Early Childhood PLT Workshop  
Columbia International University  
August 30, 2017**

<b>9:00</b>	<b>Welcome &amp; Ice Breaker: Activity # 4 We All Need Trees</b>	<b>Schnabel</b>
<b>9:15</b>	<b>What is PLT?</b>	<b>Schnabel</b>
<b>9:45</b>	<b>Activity # 10 Trees as Habitats &amp; #3 Get in Touch with Trees</b>	<b>Cooper</b>
<b>10:15</b>	<b>Activity # 2 Sounds Around</b>	<b>Schnabel</b>
<b>10:45</b>	<b>Hike through the Guide &amp; On-line Resources</b>	<b>Schnabel</b>
<b>11:00</b>	<b>Activity # 5 Signs of Fall</b>	<b>Cooper</b>
<b>11:45</b>	<b>Wrap Up and Evaluations</b>	<b>Schnabel</b>
<b>12:00</b>	<b>Adjourn</b>	

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**TODAY'S FACILITATORS**

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**Early Childhood PD Workshop  
Riverbanks Botanical Garden  
May 31, 2019**



<b>9:00</b>	<b>Welcome &amp; Ice Breaker: WET Activity #1 – Our Blue Planet</b>	<b>Pilewski</b>
<b>9:25</b>	<b>PLT Activity #3 – Mystery Box</b>	
	<b>Schnabel</b>	
<b>9:50</b>	<b>What is WET? Online Resources</b>	<b>Pilewski</b>
<b>10:20</b>	<b>What is PLT? Online Resources</b>	<b>Oakman</b>
<b>10:50</b>	<b>Break</b>	
<b>11:00</b>	<b>WET Activity #2 – House of Seasons</b>	<b>Pilewski</b>
<b>11:40</b>	<b>PLT Activity #7 – Bursting Buds</b>	
	<b>Schnabel</b>	
<b>12:20</b>	<b>Lunch</b>	
<b>1:20</b>	<b>PLT - Hike through the guide</b>	<b>Foley</b>
<b>1:45</b>	<b>WET – Hike through the guide</b>	<b>Pilewski</b>
<b>2:10</b>	<b>PLT Activity #9 – To Be a Tree</b>	<b>Foley</b>
<b>2:40</b>	<b>WET Activity #3 – Don’t Pass the Germs</b>	<b>Pilewski</b>
<b>3:10</b>	<b>Lesson Planning</b>	<b>All</b>
<b>3:45</b>	<b>Wrap Up and Evaluations</b>	<b>All</b>
<b>4:00</b>	<b>Adjourn</b>	

**TODAY’S FACILITATORS**

**SC PLT Coordinators:**

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Beth Foley – Assistant Environmental Education Coordinator, SC Forestry Commission  
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**SC Project WET Coordinators:**

Lynn Pilewski – Education Program Coordinator, Greenville County Soil and Water Conservation District  
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National WET Website: <https://www.projectwet.org/>

National PLT Website: [www.plt.org](http://www.plt.org)

SC PLT & Correlations: <http://www.state.sc.us/forest/refplt.htm>



## **Clemson University PreK-8 PLT Workshop**

<b>2:30</b>	<b>Welcome &amp; Overview</b>	<b>All</b>
<b>2:40</b>	<b>Activity #27 Every Tree for Itself</b>	<b>Miller</b>
<b>3:10</b>	<b>Hike Through the Guide</b>	<b>Schnabel</b>
<b>3:30</b>	<b>Look at online resources</b>	<b>Schnabel</b>
<b>3:50</b>	<b>Activity #63 Tree Factory &amp; #79 Tree Life Cycle</b>	<b>Miller</b>
<b>4:30</b>	<b>Activity #43 Have Seeds, Will Travel</b>	<b>Schnabel</b>
<b>5:00</b>	<b>Individual/Group Planning &amp; Presentations</b>	<b>All</b>
<b>5:20</b>	<b>Wrap Up and Evaluations</b>	<b>All</b>
<b>5:30</b>	<b>Adjourn</b>	

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### **TODAY'S FACILITATORS**

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## *Appendix D: Additional Workshop Strategies*

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- PLT Preservice Workshop Options
- Sample Icebreakers
- Sample “Hike” through the PLT Guide
- Hike the PLT Website
- PLT on the Spot
- PLT Lesson Planning Worksheet (also Index 7 in PreK–8 Guide)
- Seventeen Tips for a Great Workshop
- Questioning Strategies
- Define Your Terms!
- Working with Adults as Learners



## Implementing Project Learning Tree In Your Preservice Classes



### Workshop Options

#### **Option 1: Professor is a PLT Facilitator**

The elements of a workshop are integrated into any appropriate class, such as teaching methods or graduate level classes for in-service teachers. You may still want to invite guest facilitators when doing content-heavy activities.

OR

The entire 6-hour workshop is delivered as a unit during a class. The time that students spend outside of class preparing and leading activities counts.

OR

Workshop is offered outside of class time as a voluntary option for students. Incentives could be offered to attend. Other education majors from other classes could be invited to participate.

OR

Create a new class! Offer a class using PLT/WILD/WET and offer university credit.

OR

Facilitate off-campus workshops at local schools, museums, etc. Invite local teachers to participate in these workshops.

#### **Option 2: Invite Guest PLT Facilitator into Your Class**

You could invite a PLT facilitator for the first session and then integrate PLT into your remaining class sessions.

OR

The entire 6-hour workshop is delivered during class time as a unit. The time that students spend outside of class preparing and leading activities counts.

#### **Option 3: PLT Workshop in the Community- Facilitator is from the Area**

Students are given the schedule of PLT workshops offered outside of class time as a voluntary option. These are often offered at local Nature Centers and give your students a chance to see other educational facilities. Check with your state coordinator for scheduled workshops.

#### **PROJECT LEARNING TREE'S BASIC EXPECTATIONS:**

 Students are very familiar with and comfortable using the Activity Guide.

 Students have a solid understanding of environmental education: its definition, teaching unbiased lessons, effective classroom use of EE, and creative use of outdoor areas such as school sites and the local community

 Students create an Action Plan to implement PLT activities in their education setting.

## Sample Icebreakers

*Icebreakers are an important part of your workshop. They set the tone by getting everyone up and participating, and are also a great opportunity to model an additional PLT activity. Below are several PLT activities that can be adapted for icebreakers. Be sure to include an introduction and debrief these activities even when you use them as icebreakers.*

### **For PreK-8 Workshops:**

**Forest Products in a Bag** (a variation of Get in Touch with Trees, Activity 2). Put matching pairs of forest products in separate, small lunch bags and give each person a bag. (For product ideas, see We All Need Trees, Activity 13). Without looking in the bags, participants mingle and try to find a match to their item by feeling what's in everyone else's bag. After they find their match, they will introduce each other to the group.

**Tree Treasures** (Activity 12). Give everyone a different mystery forest product by taping it or a picture of it on their backs. Pair up the participants and have them work together to guess their product by asking only "yes/no" questions. After all pairs have figured out their products, they will introduce each other.

**We All Need Trees** (Activity 13, Variation of Part B). Explain what a tree cookie is. Hand out paper plates and instruct each person to create a "personal tree cookie" that would describe their age or the number of years they have been at their current position (you can vary the instructions). They can use different colors, designs, or put stickers on the rings to identify special events in that time frame. Everyone introduces themselves and explains their tree cookie.

**Poet-Tree** (Activity 5). Have participants look (or go) outside for a few minutes and then write a short poem about what they saw. Go around and have each person introduce themselves and share their poem.

**I'd Like to Visit a Place Where...** (Activity 54). Have participants introduce themselves and tell a brief story about a place they would like to revisit in their community.

**The Closer You Look** (Activity 61). Have participants draw their favorite tree, or a tree they can identify with. Ask everyone to introduce themselves and share their drawing.

**Our Changing World** (Activity 86). Sit in a circle and give one person a ball of string or yarn. This person will say their name and then name something in the environment. Then they roll the ball (but they hold onto the end) to someone else and that person says their name and something else that connects to the first word. Continue passing the ball until everyone is connected.

## **For Secondary Workshops:**

**Words to Live By** (Activity 7 in *Focus on Forests*). Cut out author descriptions on page 44 and the quotes without their author (pages 45-46). Hand out either an author or a quote to each participant. Have them mingle to try to find their match (author + quote). After everyone has a match, go around to each pair, do introductions, and reveal whether they matched up correctly.

**Risks We Face** (from *Focus on Risk*). Create a list of risks that people take and hand out a copy to each person. Instruct them to walk around and try to find members of the group who have taken one of the risks on the list and ask them to sign their name beside the risk. See if they can find a person for each risk listed. After, have a few people read their lists and introduce the people who have signed their sheet.

**Personal Places** (Activity 1 in *Places We Live*). Have participants think back to where they lived when they were 10 years old and then draw/color a map of everything they can remember. Participants share their maps with the rest of the group and how the place has changed in good and bad ways since they were 10.

**Global Invaders** (extension of Activity 1 in Biodiversity Online Module). Give half of the participants an invasive species (picture or word) to the U.S. Give the other half the invasive species' countries of origin. Have participants try to find their match and discuss how the invasive species may have come to the U.S. Go around to each pair, do introductions, and reveal if they matched up correctly. (See page 3 of "Global Invaders" for examples of invasive species to the U.S.)

## **For Either Type of Workshop:**

**Glossary Charades.** Choose a variety of glossary terms and their definitions, and write them on separate 3" x 5" cards (the number of terms should be equal to half the number of participants). Pair up the participants and give each pair a term to act out for the rest of the group to guess. Before each pair performs their charade, have them introduce themselves.

**PLT Bingo.** This is an old favorite and a reliable technique for introducing the participants to themes and concepts you will cover in your workshop. Create a grid (4 squares by 5 square works nicely) and add in statements such as "has visited an old growth forest" or "can name an invasive species." Participants move around the room looking for someone who fits each statement, and when they do, has them initial it. When one participant has a "bingo" (four or five in a row) you can stop. Take time to review the information – let the participants share their knowledge as they introduce themselves. Contact the State Coordinator for sample bingo cards to use.



## Project Learning Tree Hike through the Guide *PreK-8 Environmental Education Activity Guide*

1. What are the goals of PLT?
2. What are “*invasive species*” and where can you find this information?
3. What is the role of the teacher in presenting controversial issues?
4. Find an activity that addresses the theme of interrelationships and can be conducted outdoors over two to four periods.
5. Where can you find information about “Differentiated Instruction”? Give an example of how differentiated instruction is used in an activity, and describe the corresponding icon.
6. Where can you find information to help evaluate the effectiveness of activities with your students?
7. Where can you find examples of “storylines”?
8. What are three teaching methods/strategies used by PLT to guide learners through the process of awareness, understanding, challenge, motivation, and action”?
9. How many activities deal with the “urban environment”?
10. What is the fastest way to find an activity in a particular curriculum area (e.g. math, language arts, science, etc.)?
11. Find an activity that involves the skill “estimating.”
12. What are three ways of finding out how technology is used in PLT activities? Give one example of a technology connection used in a PLT activity.
13. Which Appendix provides extensive “activity references and resources”?
14. What are the 9 items that can be found in the sidebar of the activities?
15. What is PLT’s policy about reproducing/copying materials from the PLT guide?
16. What radio program is embedded in Activity 84? Where can you find additional information about PLT’s partnership with this program?
17. Where can you find a sample rubric for the third assessment opportunity in “Get in Touch with Trees”?
18. Reading connections are emphasized in the new guide. Where can you find them? Name one book that you are familiar with.
19. What is PLT’s slogan that sums up how PLT supports quality EE?
20. How can I find PLT correlations to my subject area standards?



## Project Learning Tree Hike through the Guide Answer Sheet

### *PreK-8 Environmental Education Activity Guide*

1. What are the goals of PLT?  
*p. 3*
2. What are “*invasive species*” and where can you find this information?  
*Glossary, p. 423*
3. What is the role of the teacher in presenting controversial issues?  
*Appendix 12, p. 448*
4. Find an activity that addresses the theme of interrelationships and can be conducted outdoors over two to four periods.  
*“Forest Consequences,” p. 92; found using Index 3: Time Consideration and Setting Index, p. 459*
5. Where can you find information about “Differentiated Instruction”?  
*Introduction, p.6 and Appendix 7, p. 442*

Give an example of how differentiated instruction is used in an activity, and describe the corresponding icon.

*Many possible answers, one example is “Water Wonders”, p. 188, uses paired/cooperative learning; look for 2 stick figures in activity sidebar and instructions for doing the activity*

6. Where can you find information to help evaluate the effectiveness of activities with your students?  
*See “Assessment Opportunities” next to “Objectives” at the beginning of each activity*
7. Where can you find examples of “storylines”?  
*Appendix 3, p. 429*
8. What are three teaching methods/strategies used by PLT to guide learners through the process of awareness, understanding, challenge, motivation, and action”?  
*Discussion, brainstorming, and planning; found on p. 5-6, “PLT Teaching Methods and Strategies”*
9. How many activities deal with the urban environment?  
*20; Index 5: Topic Index, under “Urban Environment,” p. 468*
10. What is the fastest way to find an activity in a particular curriculum area (e.g. math, language arts, science, etc.)?  
*Index 1: Subject Index, p. 455*

11. Find an activity that involves the skill “estimating.”  
*Index 6: Skills Index, “Every Drop Counts!” p. 469*
12. What are three ways of finding out how technology is used in PLT activities?  
*Appendix 8: Technology Connections, p. 443-444; Technology Connections in sidebar of each activity; and Index 4: Technology Connections Index, p. 461-462.*  
  
Give one example of a technology connection used in a PLT activity.  
*Many possible answers, one example is presentation software in “Habitat Pen Pals”; found in Index 4 on page 461-2.*
13. Which Appendix provides extensive “activity references and resources”?  
*Appendix 4, p. 431*
14. What are the 9 items that can be found in the sidebar of the activities?  
*Levels, Subjects, Concepts, Skills, Differentiated Instruction (not in all activities), Technology Connections (not in all activities), Materials, Time Considerations, and Related Activities; found in Introduction’s “Activity Components,” p. 10*
15. What is PLT’s policy about reproducing/copying materials from the PLT guide?  
*See inside of front cover*
16. What radio program is embedded in Activity 84?  
*Earth & Sky*  
  
And where can you find additional information about PLT’s partnership with this program?  
*Appendix 5, p. 441*
17. Where can you find a sample rubric for the third assessment opportunity in “Get in Touch with Trees”?  
*p. 20 and PLT website, [www.plt.org](http://www.plt.org)  
(Go to Resources → PLT Curriculum Resources → PreK-8 Environmental Education Activity Guide → PreK-8 Activity 2: Get In Touch With Trees → Sample Assessment Rubric)*
18. “Reading Connections” are emphasized in the activity guide. Where can you find them?  
*In a shaded box at the end of each activity*  
  
Name one book that you are familiar with.  
*Many possible answers.*
19. What is PLT’s slogan that sums up how PLT supports quality EE?  
*“Helping students learn how to think, not what to think”, p. 3*
20. How can I find PLT correlations to my subject area standards?  
*p. 4 and PLT website, [www.plt.org](http://www.plt.org)  
(Go to Curriculum → Correlations to State & National Academic Standards → State Correlations → select state from drop-down menu)*



# Hike the PLT Website

Go to **www.plt.org**. PLT offers many ways to support and enhance your use of our materials through the website and other digital media. Notice the horizontal navigation bar, which lists the main topics of Trainings, Curriculum, GreenSchools, and more. Start by clicking through each of the 6 main navigation tabs on the top of the page.

Which tab would you click on to access the Branch Newsletter? \_\_\_\_\_

Which tab contains alignments to standards? \_\_\_\_\_

Which tab would allow you to find your State's PLT Coordinator? \_\_\_\_\_

**Curriculum:** Click here to learn about PLT's curriculum materials.

Click on **Curriculum Overview** then select **View all** to show materials available from PLT. See that materials are organized "by education level", "by e-unit", and "by title".

Scroll down and select an age range that appropriately matches your needs (example: Early Childhood). Select **Browse Now** and scroll down the page to see all the information available.

Click on the Alignment to Standards. Note the various standards alignments that exist for the PLT materials.

Does your state have correlations to standards? \_\_\_\_\_

If yes, which ones? \_\_\_\_\_

**Trainings:** Click here to learn more about PLT workshops and how to contact your State Coordinator.

Go to **Find PLT in Your State** and find your State Coordinator's contact information.

How many coordinators does your state have? \_\_\_\_\_

What organizations do they work for? \_\_\_\_\_

**GreenSchools:** Click here to learn how to create greener and healthier learning environments.

Click on **About PLT GreenSchools** to review the components of this program. What are the five GreenSchools Investigation Topics?

\_\_\_\_\_  
\_\_\_\_\_

Click on **Become a PLT GreenSchool** to register and gain free access to the GreenSchools investigations online.

- **Resources:** Click here to learn about the many resources available to support your use of PLT.

- Click on the Free Activities for Families link under the Resources tab.

What are the five topic areas for the Family Activities?

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- Click on Resources for PLT's Lessons and then on the Register link in the third bullet at the top of the page. Registering for our free resources gives you access to downloadable student pages, regular emails with educator tips, and so much more!

- After registering and logging in, on the Welcome to PLT Resources page select Activity 11 Can it be Real? from the PreK-8 Guide. Note the following resources for this activity:

*Student Pages.* Download and print student pages rather than making copies from the guide.

*Recommended Reading* Each activity features recommended readings to help students meet reading goals while building upon lessons learned in the activity.

*Additional Resources.* Select a resource to see what other materials are available to support this activity.

- News and Stories. Select "News & Stories" from the top navigation bar

- Select Teacher Stories from the News & Stories drop down.

- Click on "Elementary" to view all stories related to an elementary school learning experience as well as educator tips.

- About Us. Select "About Us" from the top navigation bar

- Click on "Why Environmental Education is Important" and read about the research that supports educating students about the environment.

- What are three awards that PLT has won?
- 

- Scroll to the bottom of the website to see buttons that connect you directly to **professional development in your state, resources for teachers, school administrators and more as well as our shop link.**

## PLT on the Spot

*This activity runs participants through several activities in a very short time. The purpose of this activity is to briefly introduce several PLT activities you would normally not have the time to do.*

1. Set up 5-10 activity stations around the room or outdoors, each with a simple, touchable object (pencil, tree cookie, leaf, cone, soil sample, etc).
2. Create signs for each station listing 3 PLT activities (see sample). At least one of the activities should be easily related to the object.
3. Divide teachers into groups of three. Make sure each group has at least one PLT PreK-8 Activity Guide. The set-up question is:  
*One of your students brings in a \_\_\_ and you realize you have an opportunity for a wonderful Teachable Moment! Can you find a PLT activity you can use RIGHT NOW to teach a great lesson about or using this object?*
4. Each group starts at a station and each teacher in the group looks up one of the activities on the sign.
5. The group discusses which of the three activities on the sign might be the “best fit” to teach a lesson—on the spot—using the object.
6. Small group share: What possible activities have you found? What do your students need?
7. Connect back to standards that might be met by the activity at the grade level they teach.

<u>Activities</u>
49
64
78
Object: Leaf in Fall Color

# PLT Lesson Planning Worksheet

(See also Index 7 in the PreK-8 Guide)

Standards	Themes or Units	PLT Activities	Grade(s)	Materials	Adaptations, enrichments, field trips, local resources

# SEVENTEEN TIPS FOR A GREAT WORKSHOP

- 1. CIRCLES, NOT SQUARES** - Whenever possible, arrange chairs in a circle or semi-circle. This arrangement will allow all participants to see each other and will increase their participation.
- 2. MURPHY'S LAW** - Be prepared for the unexpected. Stay flexible enough that you can change an outdoor activity to one done inside.
- 3. NUMBERS** - In general, 10 participants is a minimum number for a successful workshop. Because PLT activities are done in groups, it is difficult to do activities successfully with fewer people. A good rule of thumb is to use one facilitator for every ten attendees.
- 4. PACK YOUR OWN BAGS** - Be sure to pack materials and supplies yourself so you will know what you have. Use a checklist! At your workshop, arrange materials so that they are right at your fingertips and you don't waste time or appear unprepared by searching through boxes.
- 5. PLT PARTNERS** – PLT best practice is to have two people conduct a workshop, one educator and one resource person. Participants will benefit from varying styles, voices, and personalities. Also, if one person has an emergency, the other can cover the workshop so it will not have to be canceled.
- 6. THE SPICE OF LIFE** - Arrange your workshop agenda so the active parts are interspersed with the sitting and listening parts. Select activities that reflect a variety of learning styles. Alternating facilitators provides even more variety.
- 7. NAMETAGS** - Provide nametags even if everyone knows each other. Have them prepared before the session with large enough letters for all to read.
- 8. QUESTIONS?** - Create an open atmosphere by encouraging participants to ask questions. If you don't have an answer, be sure to say "I don't know, but will look into that for you." Post a large sheet of paper to collect "I need" ideas or questions.
- 9. WAIT-TIME** - When using questioning strategies to engage participants, allow them enough time to think through the question before providing an answer or continuing the discussion. This is an important teaching strategy for classroom learning, too.
- 10. WRAP IT UP** - After an activity, be sure to include a "debrief". Include questions about the subjects covered, the vocabulary, and materials needed. Ask for volunteers to tell how they might use it in the context of what they teach. Ask for ideas for extensions or variations. The purpose of the wrap-up is to allow participants to reflect on the lesson and how they may use it or change it to meet their needs.
- 11. JARGON** - Use common, everyday language that everyone will understand. Be sure to explain any jargon or acronyms you do use.

**12. TEACH, DON'T PREACH** - Treat your participants as professionals. Let them make their own judgments about the PLT activities. Urge them to think about how they might use PLT in the context of what they teach or to help to meet their students' needs.

**13. SOAPBOXES** - When you conduct a PLT workshop be careful to avoid sharing too much of your personal agenda or point of view. Be sure to introduce yourself and your professional affiliation. The fact that you are sponsored by your employer speaks for itself.

**14. THE EYES HAVE IT** - Make eye contact when facilitating your session. Watch for body language: yawning may mean participants are bored, sleepy, or too warm, having arms crossed may mean they are cold or antagonistic.

**15. FAIRNESS** - Treat everyone equally. Don't show favorites. Watch out for unprofessional conversations or jokes.

**16. EVALUATIONS** - Be sure to let the participants know how important the workshop evaluation is to both the state and national program. Everyone should fill out an evaluation. They can omit their name if they wish.

**17. HAVE FUN** - Be comfortable with your presentation style and what you have to share. And have fun!



# Questioning Strategies

Good questions help workshop participants reflect on what they have experienced in the workshop activities. To ask effective questions, keep these points in mind:

- Ask probing questions that seek clarification and make participants rethink answers or think in a new way. (What did you notice about \_\_\_? What would happen if \_\_\_?)
- Keep participants attentive by changing the pattern of questions (Why do you think...? What would you do...?)
- Seek clarification or verification of erroneous or incorrect answers. (In what ways are \_\_\_ and \_\_\_ alike/different?)
- Use the “thinking skills” to phrase questions: observing, recalling, comparing, contrasting, sorting, classifying, sequencing, inferring, predicting, hypothesizing and generalizing. (Predict what would happen if \_\_\_?)
- Ask questions that stimulate discussion and have more than one correct answer. (How can we apply this information or experience to some other setting?)
- Allow for ample “wait time” – or the time it takes just after a question is posed and the response is provided. Be patient – count to 20 before providing additional information (or being tempted to answer the question yourself).

Avoid:

- Asking questions, one right after the other, too quickly.
- Asking questions that only require one word or very simple responses or tend to only regurgitate information.
- Praising or correcting answers superficially.
- Repeating the response. Let participants speak for themselves. Ask them to repeat the answer if you think others did not hear it.

## **Q: What Would You Do If...**

You have finished an activity and want to initiate a discussion among the participants?

(A: Ask questions such as: “What surprised you most about this activity?” “What did you learn that you didn’t know before?”)

You have asked a question and no one responds?

(A: Smile, wait, then repeat the question. It may take more “wait time” to develop a response using higher order thinking skills.)

A participant gives you an incorrect answer to a question?

(A: Ask questions such as: “What makes you say that?” “How do you know that?” or “What other explanations are possible?” Ask these questions for correct answers as well.)

A participant takes over the flow of the discussion when answering a question?

(A: Ask: “Does anyone else have any observations/data/inferences to share with the group?”)

## Define Your Terms!

With numerous instructional methods to draw on, teachers must sometimes become confused about the vast pedagogical lexicon we use. When highlighting how PLT utilizes or can be used to develop a certain teaching style, be sure to clarify these terms:

**Activity** – a learning endeavor designed for participation in order to create a common experience to be studied or discussed by the participants.

**Bilingual education** – educational strategies used to help learners maintain and advance their skills and ability to use more than one language; teaching strategies used are similar to those used in environmental education.

**Case study** – a group discussion or problem solving activity that uses materials from an actual situation.

**Community education** – a curricular strategy used to help students focus on issues relevant to their community; see “place-based”.

**Conservation education** – a curricular strategy used to help students increase their awareness and understanding of interrelationships in natural systems and between people and the land. This understanding will help enable them recognize the increasing complexity of natural resource management, to make informed choices, and to foster their responsibility to conserve and wisely use natural and cultural resources.

**Constructivism** – educational philosophy that assumes that students have some degree of knowledge and experience they bring to a new lesson. The teacher guides or facilitates the learning experience so that students construct their own meaning and understanding.

**Cooperative learning** – combining students in small groups or pairs based on interests, language ability, varied learning styles, or other combination to complete a learning task.

**Critical pedagogy** – a theory of education that endeavors to engage learners in recognizing the interactions and conflict of the social, political, and economic nature of education; teaches how to “read the world.”

**English language learner (ELL)** – refers to a person who has a first language other than English and is in the process of acquiring English.

**Environmental education** – focuses on environmental literacy and understanding how humans interact and are dependent on natural ecosystems; develops students’ critical-thinking skills to resolve environmental issues. The goals are to increase awareness, knowledge, skills, and taking action/participation regarding environmental issues.

**Environmental literacy** – a fundamental understanding of the systems of the world, both living and non-living, along with the analytical skills needed to weigh scientific evidence and make informed choices.

**Environment-based education** – focuses on educational results using the environment to engage students in their academic education with the goal of helping to achieve academic success, as well as an understanding of and appreciation for the environment.

**Experiential learning** – an approach to learning in which participants learn through a several step process (engage, explore, explain, elaborate, and evaluate) and involves a high level of reflection.

**Facilitator** – a person who guides participants learning but does not use direct teaching strategies such as lecture.

**Game** – an activity that typically is done for fun, competition, or chance.

**Hands-on** – providing students with tangible objects from the real world that they use to learn from; participation in learning through use or creation of material that engages multiple learning modalities.

**Inquiry-based** – a process where teachers organize classroom activities that help students develop questions about a

particular topic or topics and then conduct investigations to answer their questions.

**Learning styles** – Particular ways a learner perceives, interacts with, and responds to a learning environment. (See Section IV of this Handbook for more information).

**Lecture** – a process where the teacher transmits knowledge to students by giving them information on a topic.

**Model** – an explanation or demonstration of “ideal” behavior.

**Multicultural education** – an educational focus that places an emphasis on examining and understanding the relationships among humans and acknowledges that students learn within their own cultural context and are influenced by attitudes, behaviors, and norms for their culture.

**Outdoor education** – learning that takes place out-of-doors and reinforces that all living things are to be respected.

**Place-based** – a model of teaching and learning that involves students in gaining a strong “sense of place” and that engages students in direct learning about the social and ecological places we live; a version of inquiry-based learning.

**Problem-based** – a model for teaching that engages students in the investigation of a problem (see inquiry-based).

**Project-based** – a model for teaching and learning that involves students in problem-solving investigations and other tasks that allow them to work alone to construct their own knowledge and outcomes.

**Role-playing** – a setting for learning in which participants act out a situation through assigned parts.

# Working with Adults as Learners

One of the goals of PLT workshops is to help educators learn new ways of approaching their teaching tasks. Adults as learners are different than children as learners. The following characteristics of adult learners may help you plan and present your workshops.

## Orientation to Learning

- Adults will commit to learning something when they consider the goals and objectives of the workshop to be important to them — that is, job-related and perceived as being immediately useful.
- Adults want to initiate their own learning and be involved in selecting objectives, content, and assessment.

**What you can do:** State workshop goals early in the schedule and add participant goals not listed. Be prepared to help participants see the need for learning something new. Encourage and nurture the seeds of understanding and change. Assume that each person wants to understand or learn.

## The Learner's Self-Concept

- Adult learning is ego-involved. Learning a new skill, technique, or concept may promote a positive or negative view of self. Adults may fear that others will judge them, which produces anxiety during new learning situations.
- Adults reject prescriptions by others for their learning, especially when what is prescribed is viewed as an attack on what they are presently doing.

**What you can do:** Provide an environment in which the participants feel safe to try something new or to consider new ideas. Never criticize participants, but be positive and affirm each person in some way.

## The Role of the Learner's Experience

- Adults come to any learning experience with a wide range of previous experiences, knowledge, skills, self-direction, interests, and competencies. This means that the richest resource for learning is often the group of adult learners themselves.
- Adults will resist learning situations they believe are an attack on their competence, thus they may resist imposed workshop topics and activities.

**What you can do:** Accept and value participants as individuals with their own experiences, knowledge, and skills. Provide ways for participants to contribute to each other's learning through techniques like group discussion and problem-solving and peer-helping activities.

## Motivation

- Motivation is produced by the adult learner: the facilitator's role is to encourage and create conditions that will nurture what already exists in the adult.
- Adult learning is enhanced by behaviors that demonstrate respect, trust, and concern for the learner.

**What you can do:** Show participants that you respect, trust, and are concerned for them. Do not blame participants who do not pay attention or are reluctant to participate, instead look for ways to adjust the workshop to increase interest.

## Sources

*Brookfield, Stephen D.* Understanding and Facilitating Adult Learning: A Comprehensive Analysis of Principles and Effective Practices. Hoboken: Jossey-Bass, 2001.

*Knowles, Malcolm.* The Adult Learner, 6<sup>th</sup> ed.: The Definitive Classic in Adult Education and



## *Appendix E: PLT Materials Available Electronically*

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The following materials are available at [www.plt.org](http://www.plt.org) to the public without having to attend a professional development workshop or online course but do require the user to create a PLT account. You can use these materials to show the breadth and depth of the PLT program past the guides. The FREE resources are under the headings:

### “Curriculum”

- Sample Student Activities
- National and State PLT Standards Correlations

### “GreenSchools”

- Become a GreenSchool
- Student Investigations
- GreenSchools for Early Childhood

### “Resources”

- Resources for PLT Lessons (Student Pages, Recommended Readings, Apps, Websites, etc)
- Free Activities for Families

Many other PLT programs and resources can be accessed at the PLT website. These programs include: Every Student Learns Outside™, GreenWorks!, Earth & Sky, *Branch* newsletter, and more.



## *Appendix F: PLT Conceptual Framework*

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### **Theme: Diversity**

1.0 Throughout the world, there is a great diversity of habitats, organisms, societies, technologies, and cultures.

#### **Diversity in Environments**

1.1 Biodiversity results from the interaction of living and nonliving environmental components such as air, water, climate, and geologic features.

1.2 Forests, as well as other ecosystems, contain numerous habitats that support diverse populations of organisms.

1.3 The Earth's atmosphere, water, soil, climate, and geology vary from region to region, thus creating a wide diversity of biological communities.

#### **Diversity of Resources and Technologies**

1.4 Humans use tools and technologies to adapt and alter environments and resources to meet their physical, social, and cultural needs.

1.5 Technologies vary from simple hand tools to large-scale and complex machinery, mechanisms, and systems.

1.6 Successful technologies are those that are appropriate to the efficient and sustainable use of resources, and to the preservation and enhancement of environmental quality.

#### **Diversity Among and Within Societies and Cultures**

1.7 Human societies vary greatly and inhabit many land forms and climates throughout the world.

1.8 Humans throughout the world create differing social, cultural, and economic systems and organizations to help them meet their physical and spiritual needs.

1.9 The standard of living of various peoples throughout the world is dependent on environmental quality; the availability, utilization, and distribution of resources; the government; and culture of its inhabitants.

1.10 Natural beauty, as experienced in forests and other habitats, enhances the quality of human life by providing artistic and spiritual inspiration, as well as recreational and intellectual opportunities.

### **Theme: Interrelationships**

2.0 The ecological, technological, and socio-cultural systems are interactive and interdependent.

#### **Environmental Interrelationships**

2.1 Organisms are interdependent, and depend on nonliving components of the Earth.

2.2 Altering the environment affects all life forms, including humans, and the interrelationships that link them.

2.3 Organisms adapt to changes in the environment according to the genetic and behavioral capacity of their species.

### **Resource and Technological Interrelationships**

2.4 Resource management technologies interact and influence environmental quality; the acquisition, extraction, and transportation of natural resources; all life forms; and each other.

2.5 While technological advances decrease the incidence of disease and death, the ever-increasing world population is placing heavy demands on the finite resources of the Earth.

2.6 International cooperation directed toward conserving resources and protecting environmental quality is beneficial to human health and the well-being of other life forms.

2.7 By reducing waste and recycling materials, individuals and societies can extend the value and utility of resources and also promote environmental quality.

### **Societal and Cultural Interrelationships**

2.8 Human societies and cultures throughout the world interact with each other and affect natural systems upon which they depend.

2.9 The quantity and quality of resources and their use—or misuse—by humans affect the standard of living of societies.

2.10 Cultural and societal perspectives influence the attitudes, beliefs, and biases of people toward the use of resources and environmental protection.

2.11 All humans consume products and thereby affect the availability of renewable and nonrenewable natural resources.

2.12 The extracting, processing, transporting, and marketing of natural resources provide employment opportunities for many people.

### **Theme: Systems**

3.0 Environmental, technological, and social systems are interconnected and interacting.

#### **Environmental Systems**

3.1 In biological systems, energy flows and materials continually cycle in predictable and measurable patterns.

3.2 Plant and animal populations exhibit interrelated cycles of growth and decline.

3.3 Pollutants are harmful by-products of human and natural systems which can enter ecosystems in various ways.

3.4 Ecosystems possess measurable indicators of environmental health.

#### **Resource Management and Technological Systems**

3.5 The application of scientific knowledge and technological systems can have positive or negative effects on the environment.

3.6 Resource management and technological systems can help societies meet, within limits, the needs of a growing human population.

3.7 Conservation technology enables humans to maintain and extend the productivity of vital resources.

### **Systems in Society and Culture**

3.8 Most cultures have beliefs, values, and traditions that shape human interactions with the environment and its resources.

3.9 In democratic societies, citizens have a voice in shaping resource and environmental management policies. They also share in the responsibility of conserving resources and behaving in an environmentally responsible manner.

3.10 In democratic societies, individuals and groups, working through governmental channels, can influence the way public and private lands and resources are managed.

3.11 Effective citizen involvement in the environmental decision-making process involves a careful study of all sides of the issues, along with the ability to differentiate between honest, factually accurate information and propaganda.

### **Theme: Structure and Scale**

4.0 Technologies, societal institutions, and components of natural and human-built environments vary in structure and scale.

#### **Structures and Scale in Environments**

4.1 Populations of organisms exhibit variations in size and structure as a result of their adaptation to their habitats.

4.2 The structure and scale of an ecosystem are influenced by factors such as soil type, climate, availability of water, and human activities.

4.3 When the Earth is studied as an interacting ecological system, every action, regardless of its scale, affects the biosphere in some way.

#### **Structure and Scale in Resources and Technology**

4.4 Technologies vary in size, structure, and complexity and in their positive and negative effects on the environment.

4.5 Conservation and management technologies, when appropriately applied to the use or preservation of natural resources, can enhance and extend the usefulness of the resource, as well as the quality of the environment.

4.6 Human-built environments, if planned, constructed, and landscaped to be compatible with the environment in which they will be located, can conserve resources, enhance environmental quality, and promote the comfort and well-being of those who will live within them.

4.7 International cooperation on resource management and environmental improvement programs can be beneficial to people in many parts of the world.

#### **Structure and Scale in Societies and Cultures**

4.8 The structure and scale of the natural resources in a given area shape the economy upon which the society and its culture is based. Cultural structures and actions affect the management of resources and environmental quality.

4.9 Governmental, social, and cultural structures and actions affect the management of resources and environmental quality.

4.10 Demographics influence environmental quality, government policy, and resource use.

## **Theme: Patterns of Change**

5.0 Structure and systems change over various periods of time.

### **Patterns of Change in the Environment**

5.1 Organisms change throughout their lifetimes. Species of organisms change over long periods of time.

5.2 Although species become extinct naturally, the increasing number of extinctions in recent history may be linked to the rapid increase in human population.

5.3 As organisms go through their life cycle of growth, maturity, decline, and death, their role in the ecosystem also changes.

5.4 Ecosystems change over time through patterns of growth and succession. They are also affected by other phenomena such as disease, insects, fire, weather, climate, and human intervention.

### **Patterns of Change in Resources and Technologies**

5.5 Our increasing knowledge of the Earth's ecosystems influences strategies used for resource management and environmental stewardship.

5.6 Technologies that are developed to meet the needs of an increasing world population should also be environmentally sound.

5.7 To be most effective, new technologies require well-informed and highly skilled workers.

### **Patterns of Change in Society and Culture**

5.8 Governments change and evolve over the years. Such changes affect the lives of its citizens, as well as resource management and environmental policies.

5.9 Consumers "drive" the marketplace with their demands for goods and services. Such demands shift with time and may have positive or negative effects on the resource base and environmental quality.

5.10 Industries usually respond to consumer demand for recyclable, recycled, or otherwise environmentally friendly products.

5.11 Leisure and recreational pursuits can have an impact on forests and other resource-producing areas.

5.12 Increased public knowledge of the environment and the need for conservation of natural resources have resulted in lifestyle changes in many cultures.



## **Appendix G: Activities with Differentiated Instruction**

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### ***PLT PreK-8 Environmental Education Activity Guide***

**Activity 1 – *The Shape of Things***

Nonlinguistic Representations, Paired/Cooperative Learning, Oral/Reading/Writing Skills

**Activity 2 – *Get in Touch with Trees***

Curricular/Personal Connections, Key Vocabulary, Paired/Cooperative Learning, Realia/Hands-on Learning, Oral/Reading/Writing Skills, Higher Order Thinking

**Activity 3 – *Peppermint Beetle***

Prior Knowledge Links, Paired/cooperative Learning, Nonlinguistic Representations

**Activity 4 – *Sounds Around***

Key Vocabulary, Curricular/Personal Connections, Prior Knowledge Links, Nonlinguistic Representations, Higher Order Thinking, Oral/Reading/Writing Skills

**Activity 5 – *Poet-Tree***

Higher Order Thinking, Key Vocabulary, Curricular/Personal Connections, Nonlinguistic Representations, Paired/Cooperative Learning

**Activity 8 – *The Forest of S.T. Shrew***

Realia/Hands-on Learning, Prior Knowledge Skills, Paired/Cooperative Learning, Higher Order Thinking, Oral/Reading/Writing Skills

**Activity 11 – *Can It Be Real?***

Curricular/Personal Connections, Higher Order Thinking, Nonlinguistic Representations, Oral/Reading/Writing Skills, Prior Knowledge Links

**Activity 12 – *Invasive Species***

Key Vocabulary, Prior Knowledge, Paired/Cooperative Learning

**Activity 13 – *We All Need Trees***

Realia/Hands-on Learning, Higher Order Thinking, Nonlinguistic Representations

**Activity 14 – *Renewable or Not?***

Key Vocabulary, Prior Knowledge Links, Paired/Cooperative Learning, Nonlinguistic Representations, Realia/Hands-on Learning, Higher Order Thinking

**Activity 21 – *Adopt a Tree***

Nonlinguistic Representations, Realia/Hands-on Learning, Curricular/Personal Connections, Oral/Reading/Writing Skills, Higher Order Thinking

**Activity 22 – *Trees as Habitats***

Nonlinguistic Representations, Realia/Hands-on Learning, Oral/Reading/Writing Skills

**Activity 23 – *The Fallen Log***

Higher Order Thinking, Paired/Cooperative Learning, Realia/Hands-on Learning

**Activity 25 – *Birds and Worms***

Paired/Cooperative Learning, Nonlinguistic Representations, Realia/Hands-on learning

**Activity 27** – *Every Tree for Itself*

Modified Materials, Realia/Hands-on Learning, Curricular/Personal Connections, Oral/Reading/Writing Skills, Higher Order Thinking

**Activity 29** – *Rain Reasons*

Paired Cooperative Learning, Realia/Hands-on Learning, Higher Order Thinking

**Activity 36** – *Pollution Solution*

Key Vocabulary, Nonlinguistic Representations, Prior Knowledge Links, Realia/Hands-on Learning, Higher Order Thinking

**Activity 37** – *Reduce, Reuse, Recycle*

Curricular/Personal Connections, Paired/Cooperative Learning, Higher Order Thinking, Realia/Hands-on Learning, Nonlinguistic Representations

**Activity 39** – *Energy Sleuths*

Curricular/Personal Connections, Higher Order Thinking, Oral/Reading/Writing Skills, Paired/Cooperative Learning, Prior Knowledge Links

**Activity 41** – *How Plants Grow*

Key Vocabulary, Paired/Cooperative Learning, Nonlinguistic Representations, Realia/Hands-on Learning

**Activity 44** – *Water Wonders*

Nonlinguistic Representations, Prior Knowledge, Paired/Cooperative Learning, Key Vocabulary, Higher Order Thinking, Oral/Reading/Writing Skills

**Activity 45** – *Web of Life*

Higher Order Thinking, Paired/Cooperative Learning, Prior Knowledge Skills

**Activity 46** – *Schoolyard Safari*

Paired/Cooperative Learning, Realia/Hands-on Learning, Higher Order Thinking, Oral/Reading/Writing Skills, Nonlinguistic Representations

**Activity 47** – *Are Vacant Lots Vacant?*

Key Vocabulary, Paired/Cooperative Learning, Realia/Hands-on Learning

**Activity 51** – *Make Your Own Paper*

Differentiated Instruction, Higher Order Thinking, Paired/Cooperative Learning, Realia/Hands-on Learning

**Activity 61** – *The Closer You Look*

Curricular/Personal Connections, Higher Order Thinking, Oral/Reading/Writing Skills, Nonlinguistic Representations

**Activity 62** – *To Be a Tree*

Realia/Hands-on Learning, Key Vocabulary, Oral/Reading/Writing Skills, Nonlinguistic Representations

**Activity 63** – *Tree Factory*

Prior Knowledge, Curricular/Personal Connections, Paired/Cooperative Learning, Key Vocabulary, Higher Order Thinking, Oral/Reading/Writing Skills

**Activity 64** – *Looking at Leaves*

Paired/Cooperative Learning, Realia/Hands-on Learning, Curricular/Personal Connections

**Activity 67** – *How Big is Your Tree?*

Paired/Cooperative Learning, Nonlinguistic Representations, Higher Order Thinking, Curricular/Personal Connections

**Activity 73** – *Waste Watchers*

Curricular/Personal Connections, Higher Order Thinking, Realia/Hands-on Learning

**Activity 76** – *Tree Cookies*

Curricular/Personal Connections, Realia/Hands-on Learning, Oral/Reading/Writing Skills, Prior Knowledge

**Activity 80** – *Nothing Succeeds Like Succession*

Nonlinguistic Representations, Oral/Reading/Writing Skills, Paired/Cooperative Learning, Higher Order Thinking

**Activity 82** – *Resource-Go-Round*

Higher Order Thinking, Oral/Reading/Writing Skills

**Activity 84** – *The Global Climate*

Higher Order Thinking, Paired/Cooperative Learning, Realia/Hands-on Learning

**Activity 87** – *Earth Manners*

Curricular/Personal Connections, Higher Order Thinking, Oral/Reading/Writing Skills



## *Appendix H: List of State Facilitators*

Please contact the SCPLT state coordinator for facilitator contact information.

<b>County</b>	<b>Last Name</b>	<b>First Name</b>	<b>MI</b>	<b>City</b>
Aiken	BECK	JUDY	A.	Aiken
Aiken	COFFEY	JENNIFER	M.	AIKEN
Aiken	DEBRUHL	SUSAN		AIKEN
Aiken	DeVault	Holly Rose		Aiken
Aiken	JENKINS	TARA		HEPHZIBAH
Aiken	Unger	Shannon	E.	
AIKEN	WELLS	CHIP		AIKEN
Aiken	WILKINSON	GAIL	E.	AIKEN
Anderson	Clark	Dodie		Belton
Anderson	Edlein	Rachel	M	Belton
ANDERSON	ELLENBERG	JANE	N.	ANDERSON
ANDERSON	KOWALSKI	LARRY	M.	ANDERSON
Barnwell	Fickling	Kimberly	B	Blackville
BARNWELL	MCDONALD	BETH		BARNWELL
Barnwell	Rockwell	Norma	J	Blackville
BEAUFORT	SILVER	BARBARA	JO	HILTON HEAD ISLAND
Beaufort	Tressler	Amy		Hilton Head Island
BERKELEY	HELLER	JOHN		MONCKS CORNER
BERKELEY	JAMISON	JOHN		MONCKS CORNER
BERKELEY	VALLENTINE	GRAY		MONCKS CORNER
Charleston	BRAILSFORD	MARTHA	L.	CHARLESTON
Charleston	BRITTON	BRENDA	C	JOHNS ISLAND
CHARLESTON	CHEWNING	RENEE	D.M.	Johns Island
CHARLESTON	COMEN	MICHELLE		CHARLESTON
Charleston	Haynie	Brooke		Johns Island
Charleston	Nettles	Rhet	M	Charleston
Charleston	SANFORD	MOLLY	J	North Charleston
Chester	Youmans	Billie Jo		Richburg
COLLETON	BAILEY	CALVIN		WALTERBORO
Colleton	Crosby	Rhonda	H	Walterboro

Colleton	SPEARMAN	EDWARD		WALTERBORO
DORCH./BERK.	BOURGEOIS	LIZ		SUMMERVILLE
Dorchester	Cousins	Kelly	A	Summerville
DORCHESTER	HIGGINS	VIRGINIA "GINGA"	C.	SUMMERVILLE
DORCHESTER	KIEBER	DANA "MICHELLE"		SUMMERVILLE
DORCHESTER	REILLY	GINGER		SUMMERVILLE
DORCHESTER	SWOYER	KELLIE		GOOSE CREEK
Dorchester	WAITE	FRANCIS		Charleston
EDGEFIELD	BARTLEY	NEIL		EDGEFIELD
EDGEFIELD	Boney	Charner		EDGEFIELD
EDGEFIELD	REARDEN	CHAN		EDGEFIELD
EDGEFIELD	ROLKA	CHRISTINE		EDGEFIELD
Fairfield	Bailey	Edith	C	Ridgeway
Florence	Coker	Mikaela	A	Florence
Florence	Kelly-Horne	Retha	L	Coward
FLORENCE	LECLAIR	LYNN	M.	EFFINGHAM
FLORENCE	Majors	Jennifer		Florence
Florence	Noble	Stacy	L.S.	Effingham
Florence	PIKE	LISA		FLORENCE
Georgetown	Freytag	Sara Beth		Georgetown
GEORGETOWN	MARSHALL	A. B.		GEORGETOWN
Georgetown	Marshall	A.B.		Georgetown
GEORGETOWN	MARSHALL	Dee		
Georgetown	Marshall	Dee		Georgetown
Georgetown	SMITH	TONYA	L	ANDREWS
Greenville	Cohen	Shelby		Greenville
GREENVILLE	CORNWELL	GREG		GREENVILLE
GREENVILLE	DEBOER	PETER		GREENVILLE
GREENVILLE	ENLOE	TONI		TAYLORS
Greenville	Kyzer	Tricia		Taylors
Greenville	McDavid	Shirley	J	Mauldin
Greenville	Phillips	Madelyn	K	Greenville
Greenville	Pilewski	Lynn	A	Greenville
Greenville	Powell	Polly	B	Greenville
Greenville	Varat	Gina	S.	Greenville
Greenville	Ward	JC		Greenville
Greenville	Whitener	Patricia	A	Greenville
Greenville	Whitlock	Carrie	A	Greenville
Greenville	Whitmire	Sarah	R	Greenville
Greenwood	Fernandez	Susan	E.	Greenwood
GREENWOOD	WALTERS	JIMMY		GREENWOOD
Hampton	Hafer	Harry	R	Hampton

Hampton	Halsell	Kelli	S	Hampton
Hampton	STUCKEY	DAWN	B.	VARNVILLE
HAMPTON	STUCKEY	PETE		VARNVILLE
HORRY	EDWARDS	LOIS		CONWAY
HORRY	WARD	SUSAN		CONWAY
KERSHAW	BALDWIN	FRAZIER		CAMDEN
Kershaw	McConnell	Wendy	A.	Elgin
LAURENS	BLIND	LAURA		CLINTON
Laurens	Tucker	Hannah	B	Laurens
Laurens	Wicker	Rosemary	K	Gray Court
Lee	Cooper	Chanda	L.	Bishopville
Lexington	BRAMLETT	WENDY		Chapin
Lexington	GREEN	BENJAMIN	C.	LEXINGTON
Lexington	HAWKINS	SCOTT		W. COLUMBIA
LEXINGTON	HINTON	GAYLE		WEST COLUMBIA
Lexington	Hoekstra	Lynn	K	Columbia
Lexington	HUTTO	DANA	M	COLUMBIA
Lexington	IGOUE	KIMBERLY	D.	W. COLUMBIA
Lexington	IPOCK	LISA	E.	Lexington
Lexington	Lotter	Christine	R	Lexington
Lexington	MCKENZIE	DANNY	L.	LEXINGTON
Lexington	McKinney	Christopher	B	Columbia
LEXINGTON	MILLER	JAMES "TRIP"	P.	LEXINGTON
Lexington	Poston	Deborah	P	Lexington
LEXINGTON	ROBINSON	JAY	E.	
LEXINGTON	Schnabel	Matt		West Columbia
Lexington	SHRUM	JERRY		Lexington
LEXINGTON	UMBERGER	AMY	D.	Gaston
Marion	Eaddy	Ameerah	A	Marion
McCormick	Albert	Phyllis	M	McCormick
McCormick	GRESHAM	SANDY	M	McCormick
Newberry	Berry	Joseph	T	Newberry
Newberry	BRAMLETT	BRAD		Chapin
NEWBERRY	DAVIS	ANNETTE		NEWBERRY
NEWBERRY	FOLK	CHASE		NEWBERRY
Newberry	PATTON	TOM		NEWBERRY
OCONEE	BRUCKE	JARROD	E.	WALHALLA
OCONEE	CHILDS	JODY		Travelers Rest
Oconee	Stephens	Malissa	S	Walhalla
ORANGEBURG	CURLEE	DIANE	D.	NEESES
Orangeburg	Mason	Tammy	T	Holly Hill
ORANGEBURG	OSMOND	KATHY	C.	Orangeburg

Orangeburg	Steele	Janet	W	
Orangeburg	Williams	Mary	W	Orangeburg
PICKENS	BURNETTE	SKIP		PICKENS
Pickens	DEATON	DR. CYNTHIA		Clemson
Pickens	Hagan	Althea	S	Clemson
PICKENS	KESSLER	DR. GEORGE		Central
PICKENS	MILLER	SHARON		CLEMSON
Pickens	POLAND	JAMES	J.	PICKENS
Pickens	Prostko	Tia	R	Easley
Richland	Ashenfelter	Natalie	S	Columbia
Richland	Beach	Melinda	G	Belton
Richland	Burts	Mary	S	Columbia
Richland	Caflish	Mary		Columbia
Richland	Foley	Beth		Columbia
RICHLAND	HUBRIGHT	RUSSELL		COLUMBIA
Richland	Karnavas	Elizabeth	R	Columbia
RICHLAND	KOLOK	STEPHANIE	L.	Shaw AFB
RICHLAND	KUSTAFIK	KAREN	A.	COLUMBIA
Richland	MOORE	STEVE		COLUMBIA
RICHLAND	MULLIS	KENNY		BLYTHEWOOD
Richland	Pasco	Vikki		Blythewood
RICHLAND	REID	LAURIE	S	COLUMBIA
Richland	Sabin	Guy	R.	Columbia
RICHLAND	SAMUEL	MEIKA		COLUMBIA
Richland	SHEALY	MIKE		ST. MATTHEWS
Richland	Taylor	Deanna	S.	Columbia
RICHLAND	TUCKER	SALLY		COLUMBIA
Richland	Williams	Alexandria	S.	Columbia
Saluda	Ashley	Michelle	J.	Leesville
Spartanburg	Cornwell	Becky		Campobello
Spartanburg	Cornwell	Becky		Campobello
SPARTANBURG	DONOVAN	DR. ED		DUNCAN
SPARTANBURG	DONOVAN	SHARON		DUNCAN
Spartanburg	Eckley	Krista	J	Duncan
Spartanburg	NORRIS	INGRID	Q.	SPARTANBURG
Spartanburg	Norris	Ingrid	Q	Spartanburg
Spartanburg	Ratterree	John	E	Chesnee
Spartanburg	Sdao Swanson	Jes		Roebuck
Sumter	ARGABRIGHT	WAYNE	R	WEDGEFIELD
Sumter	BEAN	RYAN	C	SUMTER
Sumter	Daniel	Jessica	R	Sumter
Sumter	HALE	BARBARA	J	SUMTER
Sumter	Thompson	Nancy	H.	Sumter

Sumter	Yarber	TJ		Sumter
UNION	LEMASTER	BETH		UNION
Williamsburg	McKnight	Marlin	S	Kingstree
WILLIAMSBURG	NEY	MIKE		KINGSTREE
York	Bell	Cassandra Marshburn	M	Rock Hill
YORK	BOYD	ROY		Rock Hill
York	Conner	Bailiee	S	Rock Hill
York	Costner	Kelly	M	Rock Hill
York	East	Sherry	L	Rock Hill
York	Evans	Michelle	W	Fort Mill
York	Matthews	Hope	M	Rock Hill
York	Murphy	Kelly	C	Rock Hill
York	Nettles	Laura	C	York