



Project Learning Tree®



GreenSchools

FOR EARLY CHILDHOOD

Educator Guide



Downloaded from www.greenschools.org



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Project Learning Tree

Project Learning Tree® (PLT), a initiative of the Sustainable Forestry Initiative Inc., provides preschool through grade 12 educators with the tools they need to engage students in learning. PLT uses trees and forests as windows on the world to teach children how to think—not what to think—about complex environmental issues. PLT helps students develop the critical thinking and problem solving skills they need to make sound choices about the environment.

PLT is one of the most widely used environmental education programs in the United States. It provides educators with high-quality professional development and multi-disciplinary supplemental curriculum materials that can be integrated into lesson plans for all grades and subject areas. Independent evaluators confirm PLT increases students' knowledge, reasoning, and academic skills.

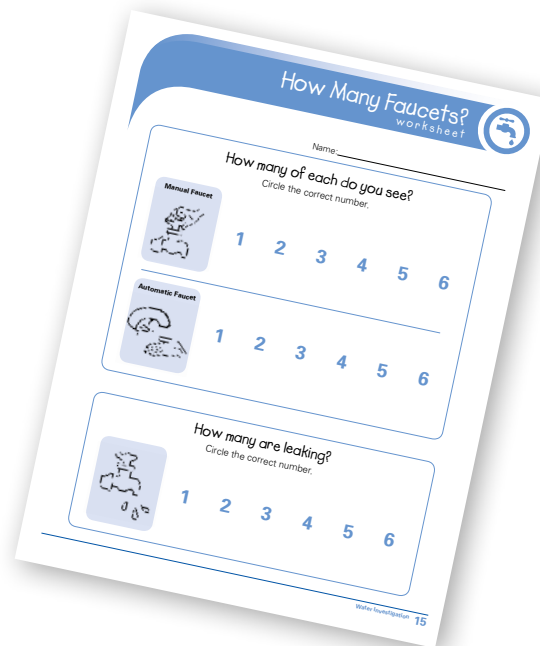
For example, designed specifically for educators and caregivers who work with children ages 3 to 6, PLT's

Environmental Experiences for Early Childhood guide includes over 130 hands-on experiences that engage young children in outdoor exploration and play. The activities integrate investigations of nature with art, reading, writing, math, music, and movement and are correlated to the National Association for the Education of Young Children (NAEYC) Standards and Head Start Child



Outcomes Framework.

PLT also provides grants for environmental service-learning projects for students to green their schools, start community gardens, or restore natural habitats, among other projects. Learn more about PLT's educational materials, GreenWorks! grants, and professional development opportunities designed to help you safely take children outdoors and bring nature into your classroom at www.plt.org.



PLT GreenSchools for Early Childhood

Started in 2008, PLT's GreenSchools program has engaged hundreds of thousands of students across the country in applying their science, technology, engineering, and math (STEM) skills to make their schools more green and healthy. PLT's Early Childhood GreenSchools program specifically meets the needs of younger learners. It is designed to teach young children about their environment and how they can make a difference, while developing their skills in language, mathematics, science, and more.

PLT's Early Childhood GreenSchools program presents environmental experiences through art, movement, sensory exploration, and time outdoors, all of which are inherently appealing to young children. It includes **Early Childhood Engagement Activities**, **Early Learner Worksheets**, and a **Classroom Action Book** template developed for children ages 4 to 8.

In the Early Childhood Investigations, the words early childhood center, center, and school are used interchangeably to refer to places where children ages 4 to 8 come to learn, whether it is a school, preschool, early childhood center, or in-home daycare. No matter where you teach, we hope this program will help children explore their world and learn to cherish it!

Five Hands-On Investigations

Five Investigations are at the heart of PLT's GreenSchools program and cover the following areas.

Energy: Investigate how much energy your school uses, the main sources of that energy, and ways to implement energy-saving strategies.

Environmental Quality: Investigate indoor air quality, transportation choices, cleaning practices, and chemical use, as well as ways to make improvements in these areas.

School Site: Investigate outdoor recreational opportunities at your school site, as well as natural habitats, wildlife, trees, and grounds maintenance practices on the site, and think of ways to improve the school site, such as creating a nature-based outdoor classroom.

Waste & Recycling: Investigate how much waste your school generates and where the waste goes, as well as examining recycling and composting efforts and considering how to increase these activities.

Water: Investigate the source, cost, and quality of your school's water supply, current water conservation practices, and ways to enhance water conservation.

Early learners will be able to participate in some of the data-gathering tasks with the aid of adult leaders. Early Childhood Engagements and Worksheets are included to help guide those tasks. Other tasks will be completed by adult volunteers. Educators are encouraged to follow developmentally appropriate practices as they adapt the experiences in each Investigation to meet the needs of the children they teach.



Supporting Early Learning Outcomes

PLT's Early Childhood GreenSchools Investigations include experiences that support many early learning outcomes. As children participate in the Investigations, they will develop skills in the following areas:

- **Language and Communication** (listening to books, reading aloud, participating in conversations, following directions, developing new vocabulary, categorizing words and objects, writing)
- **Mathematics** (counting, associating a number of objects with a written numeral, measuring, developing a spatial sense)
- **Scientific Reasoning** (using scientific words when investigating and describing things such as plants and animals, using measurement tools such as a thermometer or tape measure)
- **Gross Motor** (guided discovery walks)
- **Fine Motor** (cutting, pasting, drawing, writing)

Early Learners as Scientists

Early Childhood Engagements are provided for each of the Investigations to introduce the topics to young learners and to help engage them in observing and gathering information.

Young learners will have many opportunities to go on guided discovery walks with adults to make observations about their school. For example, in the *School Site Investigation*, students become "tree-tectives" to look for clues of healthy and unhealthy trees.

Children also have the opportunity to use their observation skills. For example, in the Energy Investigation, learners look for devices that use electricity in their classroom and decide whether there is enough sunlight coming through windows to light their classroom without turning on the lights.

With your assistance, children will have the opportunity to use scientific equipment, such as a thermometer and light meter, to take measurements. You can also recruit older learners to be a part of your Green Team and to assist younger learners.

Investigation Components

Each Early Childhood GreenSchools Investigation includes the following sections:

- **Sidebar**—Includes an Overview of the Investigation, a list of Early Childhood Learning Objectives, Word Bank, and Related PLT Activities.
- **Background Information for Educators**
- **Investigation Terminology** with definitions
- **Getting Ready**—Includes a checklist of supplies needed and the steps to complete each Investigation.
- **Introducing the Theme**—Includes reading connections, along with other activities, such as Early Learner Worksheets or learning through movement activities.
- **Conducting the Investigation**—Includes call out boxes for early childhood engagement activities to involve your learners in completing the investigation.
- **Taking Action**—Includes action project ideas, an action planning page for adults, and a **My Action Plan** worksheet for children. PLT offers GreenWorks! grants to help support action projects.
- **Home Connection**—A **Green Your Home** handout is available for each Investigation to extend the learning and to help families see how they can improve their home environment.

PLT GreenWorks!

PLT provides GreenWorks! grants to schools and youth organizations for environmental service-learning projects that link classroom learning to the real world. Children “learn by doing” through community action projects that they design and implement to improve an aspect of their school’s or neighborhood’s environment. Since 1992, PLT has helped fund more than 1,000 action projects across the country. The annual deadline to apply is September 30. For more information, visit www.greenworks.org.



How to Become a PLT GreenSchool



Join thousands of other schools around the country participating in PLT's GreenSchools program by registering as a PLT GreenSchool at www.greenschools.org. Schools must register before they can apply for grants and enjoy other benefits of becoming a certified PLT GreenSchool. Once you've signed up, take the following steps to get the program up and running at your school:

Step 1 Identify Leaders

Identify one or more leaders to be in charge of implementing GreenSchools at your school. This team may include a variety of participants depending on your school's administration, attendees, and local community.

Consider including representatives from among the following groups:

- Teachers
- Administrative staff members
- Custodial and maintenance staff members
- Parents and community volunteers.

Step 2 Obtain Permissions

It's best to obtain any needed permissions from school administrators before engaging in PLT's GreenSchools program and completing the Investigations.

Step 3 Professional Development

In order to become certified, at least two teachers must attend a PLT professional development workshop to learn how to integrate environmental education into the classroom and to receive PLT's environmental education materials. Low-cost workshops are available online or in-person for early childhood educators. At these workshops, participants will receive PLT's Environmental Experiences for Early Childhood guide. Find out more about PLT workshops at www.plt.org.

Step 4 Develop a Schedule and Assign Roles

In what order will you complete the Investigations? Determine whether specific school staff members (e.g., custodial, maintenance, administrative) are needed during certain parts of an Investigation. If so, contact them to schedule a time to complete that part of the Investigation. Develop a schedule for how to conduct the Investigations. The time it takes to complete each Investigation will vary depending on the documentation available, the equipment being used, and the help available from supporting school staff members.

Step 5 Conduct the Investigations

Gather the necessary supplies and conduct the Investigations, engaging your early learners as appropriate. Watch PLT's short videos to learn more about each investigation topic, to get tips on using the equipment recommended in the investigations, and to see how other GreenSchools across the country are taking action. These videos are available on PLT's YouTube channel: <https://www.youtube.com/user/ProjectLearningTree>.

Step 6 Develop and Implement an Action Plan

Using the data collected from each Investigation, implement changes to improve the environment at your early childhood center. Apply for a PLT GreenWorks! grant to help fund your action projects.

Step 7 Communicate and Celebrate Success

Communicate your findings and achievements with parents, school administrators, and the community. See page 9 for suggestions on ways to celebrate success.

Step 8 Apply for PLT GreenSchools Certification

Be recognized for your hard work and achievements through this national certification program. Certified schools are eligible for great recognition items, including buffs and wristbands for children, weatherproof signs and banners for the school grounds, and more! You can view the certification requirements at <https://www.plt.org/greenschools-certification-requirements>.

Reasons to Use PLT GreenSchools



Contact with nature has a positive impact on children's learning, health, and behavior. Engaging in PLT GreenSchools has many positive benefits for your school. Here are just a few:

Health Benefits for Children

Increasing evidence suggests that access to nature and green space provides children with a myriad of cognitive, emotional, and physical benefits. The time they spend exploring the natural world may yield benefits such as an increased ability to concentrate, improved academic performance, reduced stress and aggression levels, and reduced risk of obesity. (Source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3162362/>)

Studies also show that just 20 minutes spent outdoors improves concentration in children with attention-deficit hyperactivity disorder as much as, if not more than, medication. (Source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1448497/>) That's in addition to the physical benefits of exercise and exposure to sunlight (which helps build strong bones).

Improved Learning

Noticing differences between objects, like seeds and burrs, helps wire the brain and create a framework for further learning, nurturing initial math and pre-reading skills that develop from the ages of 1 through 4. Children who spend time outdoors sharpen their observational skills and learn to make important connections that boost their academic abilities beyond those of children who learn only from books and screens. (Source: <https://www.audubon.org/magazine/january-february-2012/a-nature-preschool-enhances-early>)

Interest in Environmental Stewardship

Educators are fundamental to helping the new generation discover how to improve the environment in which they live and be responsible citizens in the future. After all, the children in your classroom will be the policy makers, scientists, and voters of tomorrow. It is critical to help them realize that they can get involved and take responsible action, which in turn can have positive effects on their community.

Completing the PLT Investigations together and taking action to improve your school will help your learners have a positive experience in nature and learn to value it. Such experiences can plant the seeds for better environmental stewardship in tomorrow's leaders.

Environmental Improvements

By investigating your school's energy use, environmental quality, school site, waste and recycling, and water use, you will gain a better understanding of your school's use of resources. You can use your knowledge to make improvements that benefit the environment.

Community and Parent Engagement

Enacting meaningful and long-term change at your school is too large a task for a single person. Instead, it is necessary to form a team that involves the school administration, teachers, and staff, as well as parents and community members. A group working together is more effective and involving multiple stakeholders builds goodwill between the school and its community. In addition, the lessons on environmental engagement and conservation that the children carry home to their families can facilitate meaningful change on the home front as well.

Cost Savings

Simple actions to conserve energy and water, reduce waste, and improve your school's environmental quality and surroundings can help your school save significantly on its utility bills.



Involving parents in their children's learning about the natural world is a key aspect of the PLT program, because it provides a way to extend environmental education from the school to the family and home culture. Parents who know about and are interested in their children's experiences in nature at school are more likely to continue those lessons at home. The results may include benefits to the environment, cost savings for the family, and high-quality family time.

PLT offers a number of resources to help engage parents. For example, the **Green Your Home** handout, provided with each Investigation, can be used to stimulate learning and environmental stewardship at home.

PLT also offers a guidebook called *Nature Activities for Families* intended for use with children ages 3 to 15. The guide contains nature-oriented family activities that can be used on a nature walk, in the woods, in a backyard, or even—when all else fails—indoors. See more at <https://www.plt.org/connecting-kids-to-nature-family-activities>.

In addition, the *Nature Explore Families' Club Kit* includes free research-based, field-tested resources designed to help educators organize a Families' Club at their school or organization or in their neighborhood. The Kit has everything needed to start a club that will connect families with the outdoors and each other, while introducing them to a variety of natural spaces in the community. The Families' Club Kit is packed with easy to use, developmentally appropriate activities that have been shown to foster observation skills and engage families in exploring the natural world together. Download it for free at <http://www.natureexplore.org/family/FamiliesClub.php>.



There are many ways to assess the knowledge and skills that children develop as they participate in the various PLT GreenSchools Investigations. Performing these assessments can help demonstrate the important skills the children are developing in science, technology, engineering, and math (STEM). Experts agree that early exposure to STEM is important and that it provides a critical foundation for thinking. Fortunately, early learners are particularly suited to learning STEM concepts and pick them up readily. (Source: <http://naturalstart.org/feature-stories/engaging-children-stem-education-early>)

As you observe children taking part in the **Early Childhood Engagement** activities provided with each Investigation, you may wish to note:

- New vocabulary that the children are using in their conversations with you and one another.
- Questions that the children are asking. For example, do the questions show an increased awareness about recycling, saving water, conserving energy, or caring for trees?
- Ability to respond to questions from adult leaders. Are the children showing an increased ability to answer questions about how to reduce the impact that we have on the environment?
- Indications that the children's experiences have helped them form new ideas or refine previous ideas. For example, are they drawing new conclusions or asking new questions that are based on their observations? What is sparking their curiosity?

You can also evaluate each child's **My Action Plan** worksheet for each Investigation. Children are asked to come up with one idea on how they could take action to help the environment. Depending on their age, they illustrate their idea or cut and paste pictures provided. Then they write, or teachers help them write, a sentence to reflect their idea.



We hope that you will celebrate your school's success with parents, community members, and with other PLT educators and schools across the country.

In the course of sharing your success, highlight how completing the investigations and action projects have benefited your learners by developing their understanding about the world around them, and how they can take action to improve it. Remember to obtain approval from your center or school administrators before conducting any outreach activities.

Here are some ideas about how you and your learners can celebrate and be recognized for your accomplishments:

- Post an announcement about the project on your center or school's website. Share news about the project in your newsletters or email communications.
- Share the results of your PLT GreenSchools Investigation or action projects with a decision-making board (for example, a school board, PTA, city or county board, or another community organization).
- Plan and hold an event at your center or school highlighting your accomplishments. Have your GreenSchool action books on display. Invite parents, local community members, and the media to attend.
- Collect quotes from students, and/or send copies of your action book pages and photos to information@plt.org. We may highlight your project on our website or in our newsletter, or we may publish a blog that you write.
- Join **PLT's Facebook page**, and post a photo or a comment to our wall.
- Apply for national recognition as a Certified PLT GreenSchool. Once your application has been reviewed and accepted you will be eligible for great recognition items, including buffs and wristbands for children, weatherproof signs and banners for the school grounds, and more!

