Project Learning Tree®

GREENSCHOOLS
FOR EARLY CHILDHOOD

Energy Investigation

PLT GreenSchools

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First Edition

Introduction

Overview
Get ready to engage young learners while investigating how energy is used at your early childhood center! Children will be able to help complete parts of the investigation with the aid of adult leaders.

The information you gather will help you develop an action plan to make improvements. Reducing energy use lowers your carbon footprint and can save money, too!

Early Childhood Learning Objectives
- Develop a basic understanding of energy
- Observe ways that energy is used at the center
- Develop a basic understanding of how to conserve energy
- Develop a basic understanding of how energy is wasted
- Start to develop an understanding of why it is important to conserve energy.

Word Bank
Electricity, Energy, Daylighting

Related PLT Education Activities
The following PLT activities can be used to supplement this Investigation.

PreK-8 Environmental Education Activity Guide
Activity #39 – Energy Sleuths
Activity #53 – On the Move

Energy and Society Kit
Activity #1 – Energy Detectives along with the included energy posters, music CD, and DVD

Background for Educators

Energy may be the most important environmental issue of our time. Nearly every other environmental issue—air or water quality, land use, transportation, global climate change, or solid waste management—is related to the issue of energy.

Energy affects our lives every day. It keeps us warm in the winter and cool in the summer, allows us to easily travel from place to place, and keeps our food fresh and safe to eat. It powers machinery and electronic devices. Energy is also used to make shelter, clothing, and other necessities of life. Energy is not just an environmental issue; it is a quality of life issue too.

Energy Basics

Sources
Energy comes from many different sources, all of which are either renewable or nonrenewable. Renewable energy sources can either be replenished or used over and over again. Examples include solar energy, hydropower, wind energy, geothermal energy, and biomass (fuel from plant or animal material). Wood is a common source of biomass energy. Nonrenewable energy sources cannot be used again. Examples include fossil fuels (natural gas, coal, and oil) and uranium.

Pros and Cons of Different Energy Sources
Every energy source has advantages and disadvantages. There are many factors to take into account when analyzing the pros and cons of an energy source, such as benefits, costs, availability, and the short- and long-term effects on the environment and people. For example, we benefit from the use of petroleum to fuel our transportation, to heat our homes, and to make products like plastics and some medicines. However, when petroleum is burned, it gives off emissions, such as carbon dioxide and nitrogen oxides, that can harm the environment and human health.

Greenhouse Gases and Climate Change
The Earth's climate system is complex. Understanding the changes in the Earth's climate is one of the biggest challenges facing scientists today. Researchers have noted that the amounts of greenhouse gases, such as carbon dioxide (CO_2), in the atmosphere are increasing and that this rise is positively correlated with recent increases in overall global temperatures.

Most increases in CO_2 emissions come from burning fossil fuels to operate automobiles, power plants, and industrial operations. The second largest CO_2 source is land use change, mainly clearing of forests for agriculture or development. Trees take up CO_2 through photosynthesis and store the carbon in their trunks, branches, foliage, and roots. This process is known as carbon sequestration. By storing carbon, trees slow the rate at which CO_2 accumulates in the atmosphere. One way people hope to reduce or reverse the buildup of CO_2 in the Earth's atmosphere—and thus, reduce global climate change—is to increase the amount of carbon stored in forests by planting trees and practicing sustainable forest management.

Reducing Our Carbon Footprint

We can each examine our energy use and make efforts to reduce our own contribution to greenhouse gas emissions. A carbon footprint is a measure of how much CO_2 one organization, person, or product produces—directly or indirectly—in a certain amount of time (usually a year). One way we can reduce our carbon footprint is by being more efficient in our energy use at school and at home. Reducing energy use helps to lower CO_2 levels because in most areas of the United States, energy is produced by burning fossil fuels.

Electricity and Air Pollution

Although electricity is itself a clean source of energy, because using it does not generate emissions, most electricity in the United States is generated from power plants that burn fossil fuels. Those power plants emit large amounts of carbon dioxide, carbon monoxide, nitrogen oxides, sulfur dioxide, and other emissions that affect air quality. Consuming less electricity reduces the amount of carbon dioxide and other pollutants released into the atmosphere, thus improving air quality.

Saving on Heating and Cooling

Indoor temperatures must be comfortable to create productive and healthy living and learning environments. The energy costs associated with maintaining comfortable indoor temperatures can be reduced by employing energy conservation guidelines. By maintaining your heating and cooling equipment properly, upgrading when necessary, properly insulating and sealing your house, and using recommended thermostat settings, you can save about 30 percent on your energy bills while reducing pollutant emissions to the environment. (Source: http://energy.gov/energysaver/articles/tips-heating-and-cooling)

Daylighting Saves Energy and Benefits Students

An easy way to use less energy at school and at home is to take advantage of daylighting. Daylighting is simply illuminating indoor spaces with natural light from windows or skylights. Besides the obvious advantages of saving energy and reducing electricity costs, studies have shown that daylighting improves student performance and health. For example, the National Renewable Energy Laboratory reported in 2000: "Recent studies show that daylighting in schools may significantly increase students' test scores and promote better health and physical development—and can be attained without an increase in school construction or maintenance costs." (http://www.nrel.gov/docs/fy00osti/28049.pdf)

Trees Save Energy

You may not think that strategically planting trees can help to save energy, but it can! Consider the following facts:

- The U.S. Department of Energy reports that carefully sited trees can cut the average household's energy consumption by 25 percent.
- Trees conserve energy by shading buildings during the hotter months and serving as a windbreak during colder months.
- Deciduous trees provide shade and block heat during hotter months. By dropping their leaves in the fall, they admit sunlight in the colder months. Place these trees on the south and west sides of buildings for maximum benefit.

Why Study Energy Use at Early Childhood Centers?

This investigation will help even young learners become more aware of the energy they use every day. They will learn simple things they can do to conserve energy and help our environment. To learn more about why reducing energy use is important and to see how other GreenSchools across the country are taking action, watch PLT's short videos Investigating Energy and GreenSchools in Action: Energy. These videos are available on PLT's YouTube channel: https://www.youtube.com/user/ProjectLearningTree.

Energy Education Materials

For additional background information and activities on energy, please refer to PLT's Energy & Society Kit for grades PreK-8. (https://www.plt.org/energy-society-kit)

Energy Investigation Terminology

The following definitions may be useful to adult leaders as they conduct the Investigation. The terms preceded by the Word Bank logo (WB) are terms that you may want to introduce to young learners.

Carbon footprint
A measure of how much CO_2 one organization, person, or product produces—directly or indirectly—in a certain amount of time (usually a year)

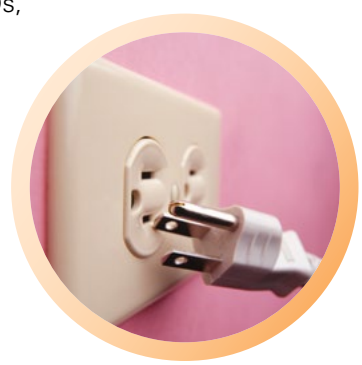
Daylighting
Using natural light from the sun to illuminate a room.

Electrical energy
The energy of moving electrons.

Electricity
A form of energy that is carried through wires and used to operate devices such as lights, toys, computers, and TVs.

Energy
The ability to do work or to produce change. Energy exists in several forms, including electrical, heat, light, potential, and kinetic.

Phantom load
The amount of energy a device consumes while in standby or sleep mode, or while turned off. The off button on many appliances may not really mean off; instead, it may mean standby. For example, appliances with remote controls or internal clocks—such as TVs, DVDs, and microwave ovens—have phantom loads. Other appliances with phantom loads include computers, printers, and plugin battery chargers such as those for cell phones, iPods, and cameras.



Getting Ready

Use the following checklist as you complete each section of the Investigation:

- ☐ Review the *PLT GreenSchools for Early Childhood Educator Guide* and obtain any necessary permissions.
- ☐ Gather the following documents and supplies to complete the Energy Investigation Survey:
  - Monthly or annual billing statements from energy providers.
  - Any written policies for the early childhood center related to energy use.
  - A light meter (optional).
- ☐ Introduce the theme to your children.
- ☐ Conduct the Energy Investigation.
- ☐ Assess your results and take action.

Introduce the Theme

1 Reading Connections

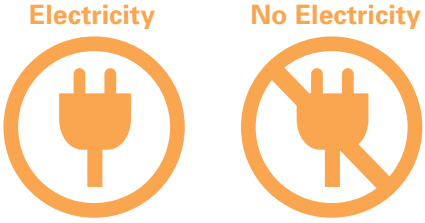
To get young learners interested in learning about how energy is used and wasted, read one or more children's books to them on the topic. The following books, as well as others, can be used to introduce the topic of energy:

- *Click! Energy* (Taking Care of Your Planet) by Nuria Jimenez. Barron's Educational Series, 2010. ISBN-10: 0764145479
- *Energy from the Sun* by Allan Fowler. Children's Press, 1997. ISBN-10: 0516262556
- *Energy: Heat, Light, and Fuel* (Amazing Science) by Darlene Stille. Picture Window Books, 2004. ISBN-10: 1404802495
- *Energy Makes Things Happen* (Let's-Read-and-Find-Out Science 2) by Kimberly Brubaker Bradley. HarperCollins, 2002. ISBN-10: 0064452131
- *Switch On, Switch Off* (Let's-Read-and-Find-Out Science 2) by Melvin Berger. HarperCollins, 2001. ISBN-10: 006445097X
- *Why Should I Save Energy?* by Jen Green. Barron's Educational Series, 2005. ISBN-10: 0764131567

2 Learning Through Movement

Materials: Variety of toys and objects, some that use electricity and some that do not. Box or table for displaying the toys in two categories, "Electricity" and "No Electricity."

Display a variety of toys and games and have students classify them according to which need electricity and which do not. This works best if there is at least one toy/game per student. Label one section of a table, or a large box, with "Electricity" and the other with "No Electricity." If students are too young to read, use the graphics provided below (can be downloaded by logging into your account at www.greenschools.org). Students can take turns coming to the front of the room and placing each item in its appropriate category.



SAFETY ALERT!

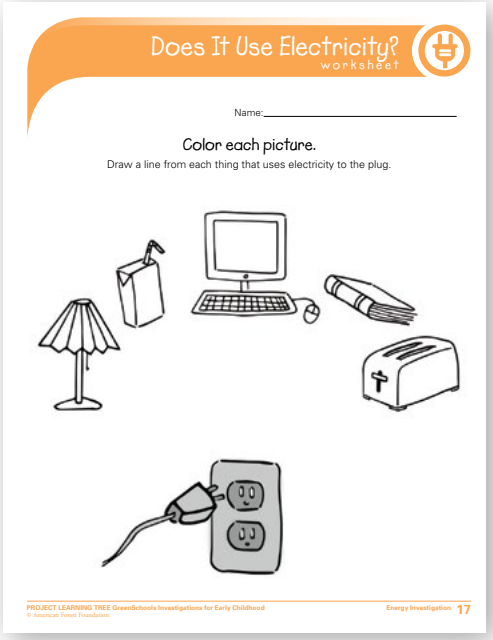
Discuss safety issues regarding electricity. Remind children to ask an adult for help to plug anything into an electrical outlet. They should also be reminded not to touch electrical outlets or electrical cords.

Look around your classroom for electrical safety hazards. Safety caps should be placed on unused electrical outlets and electrical cords should be neatly tucked away.

Introduce the Theme

3 Early Learner Worksheet

Give each learner a copy of the "Does It Use Electricity" worksheet, found on page 17. Have them color each picture. Then have them draw a line from each picture that uses electricity to the plug. Go over the correct answers with them.


Does It Use Electricity?
worksheet

Name:_____

Color each picture.

Draw a line from each thing that uses electricity to the plug.

PROJECT LEARNING TREE GreenSchools Investigations for Early Childhood
© American Forest Foundation
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4 Bulletin Board: Save Energy!

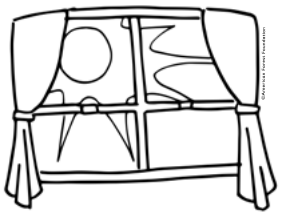
The graphics below can be used to create a bulletin board on how to save energy. The graphics can be downloaded and scaled to whatever size you require by logging into your account at www.greenschools.org.

Discuss each action with your learners and talk about why each action helps to save energy. You can also have them use the pictures in their Classroom Action Book, described in the Taking Action section of the investigation.

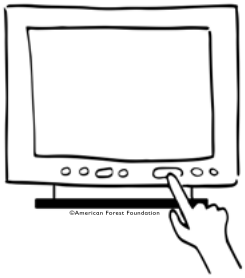

Turn off computer


Keep the door shut when the heat is on


Use a fan to cool a room


Use natural light


Turn off lights


Turn off the TV


Keep air vents clear

Conduct the Energy Investigation

Name(s):_____ Date:_____

Directions: Adult leaders should complete this questionnaire, involving their students in the Early Childhood Engagement activities.

Part I Building Information, Energy Costs, and Energy Sources

(Note: This section may require input from your custodian, facility supervisor, office manager, and financial officer.)

1. In approximately what year was the early childhood center built? _____
(Determining the year it was built may help you determine the energy efficiency of windows, heating and air conditioning, and lighting.)

2. Has the building been renovated? (Renovations typically increase energy efficiency due to updated heating, cooling, and lighting systems.)

   ☐ Yes

   What was renovated?_____

   Year:_____

   ☐ No

3. Approximately how old is the heating, ventilation, and air conditioning (HVAC) equipment? _____

4. How is the temperature setting for the building controlled?
(Controlling temperature settings remotely can conserve energy by allowing the settings to be adjusted to more appropriate levels when the building is not occupied.)

   ☐ Offsite remote control

   ☐ One central control in the building

   ☐ Separate thermostats for each room or each group of rooms

5. Is a routine maintenance schedule followed for servicing HVAC equipment to increase efficiency and to cut energy use and costs? ☐ Yes ☐ No

6. If the building has central air conditioning, is the outside unit in the shade to increase efficiency and to cut energy use and costs? ☐ Yes ☐ No

7. Are there trees on the sides of the building to provide shade during the hotter months and reduce cooling costs?
☐ Yes ☐ No

Conduct the Energy Investigation

8. Are there trees on the sides of the building to provide a windbreak in the colder months and reduce heating costs?
   ☐ Yes ☐ No

9. Obtain copies of recent energy bills for the building. Use the bills to answer the questions below. (By reviewing past energy bills, you can compare energy usage during different times of the year. Then, after you have taken action to reduce energy consumption, you can use the energy bills to determine whether consumption has decreased.)

Energy Source	Statement Month(s)	Consumption Calculate the average if using more than one month.
Electricity		kWh:
Natural Gas		Therms:
Oil		Gallons:
Propane		Gallons:
Other:		

10. Indicate which of the following sources provides energy for the building. You can contact the center's energy providers or use this U.S. Environmental Protection Agency (EPA) website to find out your region's energy sources: http://oaspub.epa.gov/powpro/ept_pack.charts/how-clean.html.

    ☐ Coal _____%
    ☐ Nuclear _____%
    ☐ Hydroelectric _____%
    ☐ Oil _____%
    ☐ Natural Gas _____%
    ☐ Propane _____%
    ☐ Wood _____%
    ☐ Solar _____%
    ☐ Wind Power _____%
    ☐ Geothermal _____%
    ☐ Other:_____%

11. Does your early childhood center have any onsite renewable energy systems?

    ☐ Solar Photovoltaic
    ☐ Geothermal
    ☐ Wind Power
    ☐ Other: _____

12. Brainstorm and record a list of ways to improve energy efficiency at your early childhood center based on the information you gathered about the building, energy costs, and energy sources.

Conduct the Energy Investigation

Part II Individual Room Surveys

Directions: For this section, data will be collected from each room in the early childhood center to assess the following:

1. **Appliances and Electronic Devices**
2. **Lighting**
3. **Temperature Control**

Make a copy of the three surveys for each room that will be assessed.

1 Individual Room Survey

Individual Room Survey – Appliances and Electronic Devices

Fill out this page for each room that you assess.

Date:_____ Room # or name:_____

Teacher or supervisor:_____ Learner ages:_____

Average number of people using the room each day: _____

1. Are appliances and equipment that use electricity typically turned off when they are not in use? . . . ☐ Yes ☐ No
2. Do the computers and monitors have a sleep mode that allows them to conserve energy when they are not in use? . . . . . ☐ Yes ☐ No
3. Do the appliances and electronic devices have an "ENERGY STAR" rating? (An ENERGY STAR symbol identifies products that meet the energy efficiency requirements set forth by the EPA.) . . . . ☐ Yes ☐ No
4. Are appliances and electronics plugged into power strips to make it easy to completely turn off multiple devices at once? . . . . . ☐ Yes ☐ No
5. Do any of the electronic devices in the room carry phantom loads? . . . . . ☐ Yes ☐ No
   (A surprisingly large number of electrical products—TVs, microwave ovens, phone chargers—cannot be switched off completely without being unplugged. These products draw power 24 hours a day, even when they are not in use, and are called phantom loads.)

EARLY CHILDHOOD **engagement**

Counting Energy Devices

Have learners help you count the number of devices in a single room that use electricity. Ask them if each device is "on" or "off." Explain that when the device is turned on, it uses electricity to operate. Tell them that to save energy, devices should be turned off when they are not in use.

Conduct the Energy Investigation

EARLY CHILDHOOD engagement

Daylighting

Conduct this activity on a sunny day in a room with windows to help children learn that sunlight coming into a room from windows and skylights is often enough to light a room. With the lights on, have students read or look at a book. Then turn the lights off and ask them if it is still bright enough for them to read or see the pictures. Explain that on a sunny day, they can use natural light coming into a room instead of turning on the lights. This is called "daylighting" and it helps to save energy.

2 Individual Room Survey

Individual Room Survey – Lighting

Fill out this page for each room that you assess.

Date:_____ Room # or name:_____

Teacher or supervisor:_____ Learner ages:_____

Average number of people using the room each day: _____

1. Indicate the most common type of light bulb used in the room by checking one of the boxes below: (For information on lighting types, see the online resources for this investigation by logging into your PLT GreenSchools account at www.greenschools.org. You can also ask the building facility manager or building engineer about the types of lighting used in rooms. Energy-efficient light bulbs, such as compact fluorescent lamps (CFLs) and light-emitting diodes (LEDs), use about 25%-80% less energy than do traditional incandescents. The ENERGY STAR symbol on bulbs indicates that the bulbs are energy efficient.)

   ☐ Incandescent ☐ CFL ☐ Fluorescent tubes ☐ LED ☐ Other

2. Are lights controlled by sensors, such as motion or photo sensors? . . . . . ☐ Yes ☐ No

3. Are *all* overhead lights typically on when the room is in use? . . . . . ☐ Yes ☐ No

4. Does the room have windows? . . . . . ☐ Yes ☐ No
   a. If yes, are the windows covered by blinds, shades, curtains, or shutters? . . . . . ☐ Yes ☐ No
   b. If yes, can the window coverings be opened to take advantage of natural light? . . . . . ☐ Yes ☐ No

5. Can overhead lighting be turned down or off when natural light is sufficient? . . . . . ☐ Yes ☐ No

6. Optional: If you have access to a light meter (such as those used in photography) take a reading at different places in the room with the lights fully on. The standard amount of light needed to carry out most tasks in a classroom is 50 foot-candles. Is there adequate light in the room? . . . . . ☐ Yes ☐ No

   Now take readings with the lights half on (if possible) and with window blinds open. Does a combination of natural and artificial light provide sufficient lighting? . . . . . ☐ Yes ☐ No

   Finally, take readings with the lights off and with window blinds open. Is there adequate lighting with just natural light? . . . . . ☐ Yes ☐ No

Conduct the Energy Investigation

3 Individual Room Survey

Individual Room Survey – Temperature Control

Fill out this page for each room that you assess.

Date:_____ Room # or name:_____

Teacher or supervisor:_____ Learner ages:_____

Average number of people using the room each day: _____

1. Does the room have a thermostat? . . . . . ☐ Yes ☐ No
2. If the room has a thermostat, is it programmable? . . . . . ☐ Yes ☐ No
3. Are there any blocked air vents or ducts in the room? . . . . . ☐ Yes ☐ No
   (When air circulation is blocked or restricted, the HVAC system has to work harder and use more energy, so it costs more money to heat or cool rooms.)
4. Can the heating and cooling settings be controlled remotely? (Controlling thermostat settings remotely can conserve energy because the settings can be turned down when the building is unoccupied.) . . . . . ☐ Yes ☐ No
5. Do most people in the room find the temperature comfortable? . . . . . ☐ Yes ☐ No

Conduct the Energy Investigation

Part III Schoolwide Energy Results

Use the data collected in the Individual Room Energy Surveys to complete the Schoolwide Energy Results questions that follow. The compiled information from the Individual Room Surveys will help you determine ways that your early childhood center can make changes to increase energy efficiency and to reduce energy-related costs.

Schoolwide 1

Schoolwide Energy Results – Appliances and Electronic Devices

1. Are the majority of electrical appliances and equipment typically turned off when they are not in use? . . . . . ☐ Yes ☐ No
2. Do the majority of computers and monitors have a sleep mode that allows them to conserve energy when they are not in use? . . . . . ☐ Yes ☐ No
3. Are the majority of appliances and electronic devices in the rooms rated "ENERGY STAR"? . . . . ☐ Yes ☐ No
4. Are power strips used with the majority of the appliances and electronics to make it easy to completely turn off multiple devices at once?. . . . . ☐ Yes ☐ No
5. Do the majority of the appliances and electronic devices in the room carry a phantom load? . . . . . ☐ Yes ☐ No
6. What other observations and conclusions can you make based on the results of the survey?

7. Brainstorm and then record recommendations for ways to reduce the amount of energy consumed by appliances and other electronic devices at your early childhood center.

EARLY CHILDHOOD engagement

Energy Patrol

Take your learners on a guided discovery walk to help them observe how energy is used at your early childhood center. Also look for signs of energy being wasted. Discuss how energy can be saved. Look for things that should be corrected, such as

- Lights on in an empty room, and
- Computers and other devices on when no one is using them.

Conduct the Energy Investigation

Schoolwide 2

Schoolwide Energy Results – Lighting

1. What is the main type of light bulb used in classrooms?

   ☐ Incandescent ☐ CFL ☐ Fluorescent tubes ☐ LED ☐ Other _____

   Other rooms? _____

   ☐ Incandescent ☐ CFL ☐ Fluorescent tubes ☐ LED ☐ Other _____

2. Are lights in rooms mainly controlled manually or by sensors? ☐ Manually ☐ Sensors
3. Are *all* overhead lights typically on when rooms are being used? ☐ Yes ☐ No
4. For the majority of the rooms with windows, can window blinds be opened to take advantage of natural light? ☐ Yes ☐ No
5. For the majority of rooms with windows, can overhead lighting be turned off or down when natural light is sufficient? ☐ Yes ☐ No
6. If you took light meter readings, was there adequate light in the majority of the rooms:

   With the lights fully on? (50 fc or more) ☐ Yes ☐ No

   With the lights half on and window blinds open? ☐ Yes ☐ No

   With the lights completely off and window blinds open? ☐ Yes ☐ No
7. What observations and conclusions can you make about daylighting at your early childhood center based on the results of the survey?

8. Brainstorm and record recommendations for ways to increase the use of daylighting at your early childhood center.

Schoolwide 3

Schoolwide Energy Results – Temperature Control

1. Do the majority of the rooms have a thermostat? ☐ Yes ☐ No
2. Are the majority of thermostats programmable? ☐ Yes ☐ No
3. Are there any blocked air vents and ducts in the school? ☐ Yes ☐ No
4. Can the heating and cooling settings be controlled remotely? ☐ Yes ☐ No
5. What other observations and conclusions can you make about how temperature settings are controlled at your early childhood center?

6. Brainstorm and then record recommendations for ways to improve temperature control at your early childhood center. Consider ways to increase energy efficiency.

Taking Action

Complete the **Energy Action Plan** on the next page. You can engage young learners by creating a **Classroom Action Book** on ways to save energy at your early childhood center.

EARLY CHILDHOOD engagement

Classroom Action Book

Your learners can create a classroom book filled with simple ways to save energy. A template for making the book that highlights their art and ideas is provided on page 16.

Directions: Have children draw a picture of how they can save energy. Alternatively, provide a variety of pictures for them to cut out and use (you can resize and use the bulletin board images available by logging into your account at www.greenschools.org). Have the children paste their picture to their **My Action Plan** worksheet. Then write, or help the children write, their responses to the prompt. Each child can contribute one page and then the pages can be combined into a book.

The finished book can be shared in the classroom or scanned and uploaded on a website so that it can be shared with other classes and family members. In addition, please share your book with PLT at information@plt.org or via our **PLT Facebook Page**. The book is a wonderful way to capture what the children have learned from this Investigation.

Before children begin their worksheet and action plan, review some of the things they discovered that might be appropriate for the book. Some ideas include the following:

- Keep air vents clear
- Use natural light
- Turn off the lights when not in use
- Turn off the TV when not in use
- Turn off the computer when not in use
- Use a fan to cool a room
- Keep the door to the outside shut when the heat is on
- Keep windows closed when the AC is on.

Taking Action

Energy Action Plan

Directions: Review the list of ideas that you brainstormed for reducing energy use and increasing energy efficiency at your early childhood center. Prioritize the ideas and decide on a few action projects that you want to do to conserve energy at your center. See the next page for action project ideas.

List action project ideas for each part of the Energy Investigation:

Building Information, Energy Costs, and Energy Sources

Energy Surveys

1. Appliances and Electronic Devices

2. Lighting

3. Temperature Control

Taking Action

Energy Action Project Ideas

Here are just a few ideas to help get you started. You can check out what other PLT GreenSchools are doing by watching PLT's short video GreenSchools in Action: Energy (available on PLT's YouTube channel at https://www.youtube.com/user/ProjectLearningTree) and by reading stories posted at https://www.plt.org/project-learning-tree-greenschools-stories.

- Use power strips to minimize the phantom energy load loss or unplug appliances that are not in use.
- Turn lighting in classrooms down or off to take advantage of natural lighting.
- Encourage the use of energy efficient lights if this change has not already been made.
- Install motion sensors in lower-use areas such as bathrooms to ensure that lights are only on when the room is occupied.
- Delamp (or reduce the number of light bulbs) in areas where the quantity of light exceeds recommendations.
- Plant trees at appropriate places around the building to reduce heating and cooling costs.
- Insulate windows to prevent drafts and conserve energy.
- Keep windows and doors closed to help conserve energy in the classroom when either the heat or the AC is on. When there is little difference between the outside and inside temperatures, open windows and doors will not have much effect on energy consumption.
- Keep air vents clear to make sure that the airflow around heating and cooling vents is not obstructed.
- Adjust the heating or air conditioning thermostat to reduce energy use. In the summer, thermostat settings should be 74°–78°F when the building is occupied. At the end of the day or the beginning of a holiday or weekend, set thermostats to 78°–80°F. In the winter, thermostat settings should be 68°–72°F. Keep temperatures within an appropriate range if there are plants and/or animals in classrooms.
- Ensure that HVAC filters are inspected every month and replaced or cleaned as needed, especially during peak heating or cooling months.
- Sponsor an energy-related project that will help the community.
- Develop a plan that encourages students and staff members to conserve energy.

My Action Plan
worksheet

Name:_____

I can save energy by:

_____

Does It Use Electricity?
worksheet

Name:_____

Color each picture.

Draw a line from each thing that uses electricity to the plug.