

**PROJECT LEARNING TREE**  
**Energy and Society**  
**PRE-K**  
**Texas Early Childhood Standards**

<b>Correlation/Early Childhood Standards</b> <b>Students are expected to:</b>	<b>Activity</b>
<b>II. Language and Communication Domain</b>	
II.A.2. Child shows understanding by following <ul style="list-style-type: none"> <li>• two step oral directions and usually follows three-step directions</li> <li>• follows directions on a tape or CD to perform various movements, or gestures</li> </ul>	1, 2, 4
<b>VI. Science Domain</b>	
VI.A.4. describes sources of heat and light (sun, wind, water as energy sources) and the safety issues associated with these.	1, 2, 4
VI.D.1. Child practices good habits of personal safety. <ul style="list-style-type: none"> <li>• follows/uses safety procedures while using common tools and materials (glue, scissors, rulers, pencils, hammers, wood, safety goggles)</li> </ul>	1, 2, 4
<b>VIII. Fine Arts Domain</b>	
VIII.A.1. Child uses a variety of art materials and activities for sensory experience and exploration. <ul style="list-style-type: none"> <li>• investigates with a variety of materials (crayons, paint, clay, markers)</li> <li>• manipulates modeling clay by rolling, pinching, squeezing, patting, and cutting</li> <li>• selects a variety of materials in the art center for exploration (painting with cotton swabs on paper)</li> <li>• comments on colors, shapes, space, textures, and objects in the environment</li> </ul>	1, 2, 4
VIII.A.2. Child uses art as a form of creative self expression and representation. <ul style="list-style-type: none"> <li>• uses a variety of materials to create art forms</li> </ul>	1, 2, 4
VIII.B.1. Child participates in classroom music activities. <ul style="list-style-type: none"> <li>• sings songs about concepts learned in the curriculum (singing about planting seeds when the theme is gardening, transportation songs, etc.)</li> <li>• creates own musical instruments using boxes, strings, rubber bands, and cans</li> </ul>	1, 2, 4
VIII.B.2. Child responds to different musical styles through movement and play. <ul style="list-style-type: none"> <li>• follows the beat using body and musical instruments (walks or jumps to the beat)</li> </ul>	1, 2, 4
<b>IX. Physical Development Domain</b>	
IX.A.2. Child coordinates sequence of movements to perform tasks participates in group games involving movement. <ul style="list-style-type: none"> <li>• moves in rhythm to simple tunes and music patterns</li> </ul>	1, 2, 4

**PROJECT LEARNING TREE**  
**Energy and Society**  
**Kindergarten**  
**Correlation to the Texas Essential Knowledge and Skills**

<b>Students are expected to:</b>	<b>Activity</b>
<b>Language Arts</b>	
K.23A follow agreed-upon rules for discussion, including taking turns and speaking one at a time	2
<b>Science</b>	
K.2D record and organize data and observations using pictures, numbers, and words	1
K.6A use the five senses to explore different forms of energy such as light, heat, and sound	1, 2
<b>Social Studies</b>	
K.13C describe how his or her life might be different without modern technology	4
K.15B create and interpret visuals, including pictures and maps	2

**PROJECT LEARNING TREE**  
**Energy and Society**  
**1<sup>st</sup> grade**  
**Correlation to the Texas Essential Knowledge and Skills**

<b>Students are expected to:</b>	<b>Activity</b>
<b>Language Arts</b>	
1.29A follow agreed-upon rules for discussion, including listening to others, speaking when recognized, and making appropriate contributions	2
<b>Science</b>	
1.2D record and organize data using pictures, numbers, and words	1
1.6A identify and discuss how different forms of energy such as light, heat, and sound are important to everyday life	1, 2
<b>Social Studies</b>	
1.6B identify examples of and uses for natural resources in the community, state, and nation	2
1.16B describe how technology changes communication, transportation, and recreation	4
1.18B create and interpret visual and written material	2

**PROJECT LEARNING TREE**  
**Energy and Society**  
**2nd grade**  
**Correlation to the Texas Essential Knowledge and Skills**

<b>Students are expected to:</b>	<b>Activity</b>
<b>Language Arts</b>	
2.30A follow agreed-upon rules for discussion, including listening to others, speaking when recognized, and making appropriate contributions	2
<b>Science</b>	
2.2D record and organize data using pictures, numbers, and words	1
2.8C explore the processes in the water cycle, including evaporation, condensation, and precipitation, as connected to weather conditions	1
<b>Social Studies</b>	
2.7C explain how people depend on the physical environment and natural resources to meet basic needs	2
2.8C identify ways people can conserve and replenish natural resources	2
2.10C examine the development of a product from a natural resource to a finished product	4
2.17A describe how science and technology change communication, transportation, and recreation	4
2.19B create written and visual material such as stories, poems, maps, and graphic organizers to express ideas	2

**PROJECT LEARNING TREE**  
**Energy and Society**  
**3rd grade**  
**Correlation to the Texas Essential Knowledge and Skills**

<b>Students are expected to:</b>	<b>Activity</b>
<b>Language Arts</b>	
3.31A participate in teacher and student led discussions by posing and answering questions with appropriate detail and by providing suggestions that build upon the ideas of others	2
<b>Science</b>	
3.2C construct maps, graphic organizers, simple tables, charts, and bar graphs using tools and current technology to organize, examine, and evaluate measured data	1
3.6A explore different forms of energy, including mechanical, light, sound, and heat/thermal in everyday life	1, 2
3.7D explore the characteristics of natural resources that make them useful in products and materials such as clothing and furniture and how resources may be conserved	2
3.8B describe and illustrate the Sun as a star composed of gases that provides light and heat energy for the water cycle	1
<b>Social Studies</b>	
3.18B use technology to create written and visual material such as stories, poems, pictures, maps, and graphic organizers to express ideas	2

**PROJECT LEARNING TREE**  
**Energy and Society**  
**4th grade**  
**Correlation to the Texas Essential Knowledge and Skills**

<b>Students are expected to:</b>	<b>Activity</b>
<b>Language Arts</b>	
4.29A participate in teacher and student led discussions by posing and answering questions with appropriate detail and by providing suggestions that build upon the ideas of others	2
<b>Science</b>	
4.2C construct simple tables, charts, bar graphs, and maps using tools and current technology to organize, examine, and evaluate data	1
4.6A differentiate among forms of energy, including mechanical, sound, electrical, light, and heat/thermal	1, 2
4.7C identify and classify Earth's renewable resources, including air, plants, water, and animals; and nonrenewable resources, including coal, oil, and natural gas; and the importance of conservation	2, 4
4.8B describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process	1
<b>Social Studies</b>	
4.9B identify reasons why people have adapted to and modified their environment in Texas, past and present, such as the use of natural resources to meet basic needs, facilitate transportation, and enhance recreational activities	4
4.12B explain how geographic factors such as climate, transportation, and natural resources have influenced the location of economic activities in Texas	4
4.12E explain how developments in transportation and communication have influenced economic activities in Texas	4
4.13A identify ways in which technological changes in areas such as transportation and communication have resulted in increased interdependence among Texas, the United States, and the world	4
4.22D create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies	2

# PROJECT LEARNING TREE

## Energy and Society

### 5<sup>th</sup> grade

#### Correlation to the Texas Essential Knowledge and Skills

Students are expected to:	Activity
<b>Language Arts</b>	
5.29A participate in student-led discussions by eliciting and considering suggestions from other group members and by identifying points of agreement and disagreement	2
<b>Math</b>	
5.14A identify the mathematics in everyday situations	5
<b>Science</b>	
5.2B ask well-defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology	5
5.2G construct appropriate simple graphs, tables, maps, and charts using technology, including computers, to organize, examine, and evaluate information	1
5.6A explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy	1, 2, 3
5.6B demonstrate that the flow of electricity in circuits requires a complete path through which an electric current can pass and can produce light, heat, and sound	3
5.7A explore the processes that led to the formation of sedimentary rocks and fossil fuels	2
5.7C identify alternative energy resources such as wind, solar, hydroelectric, geothermal, and biofuels	2, 4, 5
5.8B explain how the Sun and the ocean interact in the water cycle	1
<b>Social Studies</b>	
5.23C explain how scientific discoveries and technological innovations in the fields of medicine, communication, and transportation have benefited individuals and society in the United States	4
5.23D predict how future scientific discoveries and technological innovations could affect society in the United States	4
5.25D create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies	2

**PROJECT LEARNING TREE**  
**Energy and Society**  
**6<sup>th</sup> grade**  
**Correlation to the Texas Essential Knowledge and Skills**

<b>Students are expected to:</b>	<b>Activity</b>
<b>Language Arts</b>	
6.17D produce a multimedia presentation involving text and graphics using available technology	2
6.28A participate in student-led discussions by eliciting and considering suggestions from other group members and by identifying points of agreement and disagreement	2
<b>Math</b>	
6.10B identify mean (using concrete objects and pictorial models), median, mode, and range of a set of data	5
6.10D solve problems by collecting, organizing, displaying, and interpreting data	5
6.11A identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics	5
<b>Science</b>	
6.2B design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology	5
6.2C collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers	1
6.7A research and debate the advantages and disadvantages of using coal, oil, natural gas, nuclear power, biomass, wind, hydropower, geothermal, and solar resources	2, 3, 4, 5
6.7B design a logical plan to manage energy resources in the home, school, or community	2, 4
6.8A compare and contrast potential and kinetic energy	1, 3
6.9A investigate methods of thermal energy transfer, including conduction, convection, and radiation	3
6.9B verify through investigations that thermal energy moves in a predictable pattern from warmer to cooler until all the substances attain the same temperature such as an ice cube melting	3
6.9C demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy	3



<b>Social Studies</b>	
6.6B identify the location of renewable and nonrenewable natural resources such as fresh water, fossil fuels, fertile soils, and timber	2
6.7B identify and analyze ways people have modified the physical environment such as mining, irrigation, and transportation infrastructure	4
6.22D create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies based on research	2

**PROJECT LEARNING TREE**  
**Energy and Society**  
**7<sup>th</sup> grade**  
**Correlation to the Texas Essential Knowledge and Skills**

<b>Students are expected to:</b>	<b>Activity</b>
<b>Language Arts</b>	
7.17D produce a multimedia presentation involving text and graphics using available technology	2
7.28A participate productively in discussions, plan agendas with clear goals and deadlines, set time limits for speakers, take notes, and vote on key issues	2
<b>Math</b>	
7.13A identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics	5
<b>Science</b>	
7.2B design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology	5
7.2C collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers	1
7.5A recognize that radiant energy from the Sun is transferred into chemical energy through the process of photosynthesis	3
7.7B illustrate the transformation of energy within an organism such as the transfer from chemical energy to heat and thermal energy in digestion	3
<b>Social Studies</b>	
7.9C analyze the effects of physical and human factors such as climate, weather, landforms, irrigation, transportation, and communication on major events in Texas	4
7.12B trace the development of major industries that contributed to the urbanization of Texas such as transportation, oil and gas and manufacturing	4
7.20D evaluate the effects of scientific discoveries and technological innovations on the use of resources such as fossil fuels, water and land	2

**PROJECT LEARNING TREE**  
**Energy and Society**  
**8<sup>th</sup> grade**  
**Correlation to the Texas Essential Knowledge and Skills**

<b>Students are expected to:</b>	<b>Activity</b>
<b>Language Arts</b>	
8.17D produce a multimedia presentation involving text, graphics, images, and sound using available technology	2
8.28A participate productively in discussions, plan agendas with clear goals and deadlines, set time limits for speakers, take notes, and vote on key issues	2
<b>Math</b>	
8.14A identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics	5
<b>Science</b>	
8.2B design and implement comparative and experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology	5
8.2C collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers	1
8.10A recognize that the Sun provides the energy that drives convection within the atmosphere and oceans, producing winds and ocean currents	1
<b>Social Studies</b>	
8.27B analyze the impact of transportation and communication systems on the growth, development, and urbanization of the United States	4