

Grade 6 Grade Level Expectations correlated to Project Learning Tree
PreK-8 Guide
Science

Grade Level Expectation	PLT activity
Science as Inquiry The Abilities Necessary to Do Scientific Inquiry	
1. Generate testable questions about objects, organisms, and events that can be answered through scientific investigation (SI-M-A1)	41: How Plants Grow 42: Sunlight and Shades of Green 78: Signs of Fall
2. Identify problems, factors, and questions that must be considered in a scientific investigation (SI-M-A1)	41: How Plants Grow 42: Sunlight and Shades of Green 78: Signs of Fall
3. Use a variety of sources to answer questions (SI-M-A1)	24: Nature's Recyclers 39: Energy Sleuths 45: Web of Life 52: A Look at Aluminum 86: Our Changing World
4. Design, predict outcomes, and conduct experiments to answer guiding questions (SI-M-A2)	37: Reduce, Reuse, Recycle 41: How Plants Grow 42: Sunlight and Shades of Green 78: Signs of Fall
5. Identify independent variables, dependent variables, and variables that should be controlled in designing an experiment (SI-M-A2)	41: How Plants Grow 42: Sunlight and Shades of Green 78: Signs of Fall
6. Select and use appropriate equipment, technology, tools, and metric system units of measurement to make observations (SI-M-A3)	39: Energy Sleuths 48: Field, Forest, Stream 72: Air We Breathe 73: Waste Watchers 78: Signs of Fall
7. Record observations using methods that complement investigations (e.g., journals, tables, charts) (SI-M-A3)	4: Sounds Around 24: Nature's Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream 72: Air We Breathe 73: Waste Watchers 78: Signs of Fall
8. Use consistency and precision in data collection, analysis, and reporting (SI-M-A3)	4: Sounds Around 24: Nature's Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 48: Field, Forest and Stream 61: The Closer You Look 72: Air We Breathe 73: Waste Watchers 78: Signs of Fall
9. Use computers and/or calculators to analyze and interpret quantitative data (SI-M-A3)	39: Energy Sleuths 48: Field, Forest and Stream 73: Waste Watchers

<p>10. Identify the difference between description and explanation (SI-M-A4)</p>	<p>4: Sounds Around 24: Nature’s Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 48: Field, Forest and Stream 72: Air We Breathe 73: Waste Watchers 78: Signs of Fall</p>
<p>11. Construct, use, and interpret appropriate graphical representations to collect, record, and report data (e.g., tables, charts, circle graphs, bar and line graphs, diagrams, scatter plots, symbols) (SI-M-A4)</p>	<p>4: Sounds Around 24: Nature’s Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 48: Field, Forest and Stream 72: Air We Breathe 73: Waste Watchers 78: Signs of Fall</p>
<p>12. Use data and information gathered to develop an explanation of experimental results (SI-M-A4)</p>	<p>41: How Plants Grow 42: Sunlight and Shades of Green</p>
<p>13. Identify patterns in data to explain natural events (SI-M-A4)</p>	<p>4: Sounds Around 24: Nature’s Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream 70: Soil Stories 72: Air We Breathe 73: Waste Watchers 78: Signs of Fall</p>
<p>14. Develop models to illustrate or explain conclusions reached through investigation (SI-M-A5)</p>	<p>4: Sounds Around 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream 61: The Closer You Look</p>
<p>15. Identify and explain the limitations of models used to represent the natural world (SI-M-A5)</p>	<p>4: Sounds Around 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream</p>
<p>16. Use evidence to make inferences and predict trends (SI-M-A5)</p>	<p>41: How Plants Grow 42: Sunlight and Shades of Green</p>
<p>17. Recognize that there may be more than one way to interpret a given set of data, which can result in alternative scientific explanations and predictions (SI-M-A6)</p>	<p>4: Sounds Around 24: Nature’s Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream 72: Air We Breathe 73: Waste Watchers 78: Signs of Fall</p>

<p>18. Identify faulty reasoning and statements that misinterpret or are not supported by the evidence (SI-M-A6)</p>	<p>4: Sounds Around 24: Nature’s Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream 72: Air We Breathe 73: Waste Watchers 78: Signs of Fall</p>
<p>19. Communicate ideas in a variety of ways (e.g., symbols, illustrations, graphs, charts, spreadsheets, concept maps, oral and written reports, equations) (SI-M-A7)</p>	<p>4: Sounds Around 24: Nature’s Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream 72: Air We Breathe 73: Waste Watchers 78: Signs of Fall</p>
<p>20. Write clear, step-by-step instructions that others can follow to carry out procedures or conduct investigations (SI-M-A7)</p>	<p>4: Sounds Around 24: Nature’s Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream 72: Air We Breathe 73: Waste Watchers 78: Signs of Fall</p>
<p>21. Distinguish between <i>observations</i> and <i>inferences</i> (SI-M-A7)</p>	<p>4: Sounds Around 24: Nature’s Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream 72: Air We Breathe 73: Waste Watchers 78: Signs of Fall</p>
<p>22. Use evidence and observations to explain and communicate the results of investigations (SI-M-A7)</p>	<p>4: Sounds Around 24: Nature’s Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream 72: Air We Breathe 73: Waste Watchers 78: Signs of Fall</p>

23. Use relevant safety procedures and equipment to conduct scientific investigations (SI-M-A8)	24: Nature’s Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream 72: Air We Breathe 73: Waste Watchers 78: Signs of Fall
24. Provide appropriate care and utilize safe practices and ethical treatment when animals are involved in scientific field and laboratory research (SI-M-A8)	24: Nature’s Recyclers 28: Air Plants 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream 78: Signs of Fall
Understanding Scientific Inquiry	
25. Compare and critique scientific investigations (SI-M-B1)	24: Nature’s Recyclers 41: How Plants Grow 42: Sunlight and Shades of Green
26. Use and describe alternate methods for investigating different types of testable questions (SI-M-B1)	24: Nature’s Recyclers 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream
27. Recognize that science uses processes that involve a logical and empirical, but flexible, approach to problem solving (SI-M-B1)	24: Nature’s Recyclers 41: How Plants Grow 42: Sunlight and Shades of Green
28. Recognize that investigations generally begin with a review of the work of others (SI-M-B2)	
29. Explain how technology can expand the senses and contribute to the increase and/or modification of scientific knowledge (SI-M-B3)	4: Sounds Around 39: Energy Sleuths 48: Field, Forest and Stream 72: Air We Breathe 73: Waste Watchers
30. Describe why all questions cannot be answered with present technologies (SI-M-B3)	24: Nature’s Recyclers 28: Air Plants 39: Energy Sleuths 41: How Plants Grow 48: Field, Forest and Stream 72: Air We Breathe 73: Waste Watchers 78: Signs of Fall
31. Recognize that there is an acceptable range of variation in collected data (SI-M-B3)	24: Nature’s Recyclers 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream
32. Explain the use of statistical methods to confirm the significance of data (e.g., mean, median, mode, range) (SI-M-B3)	
33. Evaluate models, identify problems in design, and make recommendations for improvement (SI-M-B4)	24: Nature’s Recyclers 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream
34. Recognize the importance of communication among scientists about investigations in progress and the work of others (SI-M-B5)	

35. Explain how skepticism about accepted scientific explanations (i.e., hypotheses and theories) leads to new understanding (SI-M-B5)	
36. Explain why an experiment must be verified through multiple investigations and yield consistent results before the findings are accepted (SI-M-B5)	24: Nature's Recyclers 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream
37. Critique and analyze their own inquiries and the inquiries of others (SI-M-B5)	24: Nature's Recyclers 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream
38. Explain that, through the use of scientific processes and knowledge, people can solve problems, make decisions, and form new ideas (SI-M-B6)	24: Nature's Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream 72: Air We Breathe 73: Waste Watchers 78: Signs of Fall
39. Identify areas in which technology has changed human lives (e.g., transportation, communication, geographic information systems, DNA fingerprinting) (SI-M-B7)	28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 48: Field, Forest and Stream 72: Air We Breathe 73: Waste Watchers
40. Evaluate the impact of research on scientific thought, society, and the environment (SI-M-B7)	24: Nature's Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 41: How Plants Grow 48: Field, Forest and Stream 72: Air We Breathe 73: Waste Watchers
Physical Science Properties and Changes of Properties in Matter	
1. Measure and record the volume and mass of substances in metric system units (PS-M-A1)	
2. Calculate the density of large and small quantities of a variety of substances (e.g., aluminum foil, water, copper, clay, rock) (PS-M-A1)	48: Field, Forest and Stream
3. Construct models that replicate atomic structure for selected common elements from the periodic table (PS-M-A2)	
4. Differentiate between the physical and chemical properties of selected substances (PS-M-A3)	3: Peppermint Beetle 28: Air Plants 41: How Plants Grow 42: Sunlight and Shades of Green 44: Water Wonders 51: Make Your Own Paper 52: A Look at Aluminum 73: Waste Watchers
5. Compare physical and chemical changes (PS-M-A3)	28: Air Plants 78: Signs of Fall 81: Living with Fire
6. Draw or model the movement of atoms in solid, liquid, and gaseous states (PS-M-A4)	4: Sounds Around 44: Water Wonders

7. Simulate how atoms and molecules have kinetic energy exhibited by constant motion (PS-M-A4)	
8. Determine the temperatures at which water changes physical phases (e.g., freezing point, melting point, boiling point) (PS-M-A5)	44: Water Wonders
9. Describe the properties of reactants and products of chemical reactions observed in the lab (PS-M-A6)	42: Sunlight and Shades of Green
10. Identify the average atomic masses of given elements using the periodic table (PS-M-A7)	
11. Compare the masses of reactants and products of a chemical reaction (PS-M-A7)	
12. Determine the effect of particle size of the same reactants on the rate of chemical reactions during a lab activity (e.g., powdered vs. solid forms) (PS-M-A8)	
13. Use a variety of resources to identify elements and compounds in common substances (PS-M-A9)	
Motions and Forces	
14. Construct and analyze graphs that represent one-dimensional motion (i.e., motion in a straight line) and predict the future positions and speed of a moving object (PS-M-B1)	
15. Explain why velocity is expressed in both speed and direction (PS-M-B1)	
16. Compare line graphs of acceleration, constant speed, and deceleration (PS-M-B1)	
17. Describe and demonstrate that friction is a force that acts whenever two surfaces or objects move past one another (PS-M-B2)	
18. Explain how the resistance of materials affects the rate of electrical flow (PS-M-B2)	
19. Identify forces acting on all objects (PS-M-B3)	
20. Draw and label a diagram to represent forces acting on an object (PS-M-B4)	
21. Determine the magnitude and direction of unbalanced (i.e., net) forces acting on an object (PS-M-B4)	
22. Demonstrate that an object will remain at rest or move at a constant speed and in a straight line if it is not subjected to an unbalanced force (PS-M-B5) (PS-M-B3)	
23. Predict the direction of a force applied to an object and how it will change the speed and direction of the object (PS-M-B5)	
Transformations of Energy	
24. Describe and give examples of how all forms of energy may be classified as potential or kinetic energy (PS-M-C1)	39: Energy Sleuths 81: Living with Fire
25. Compare forms of energy (e.g., light, heat, sound, electrical, nuclear, mechanical) (PS-M-C1)	4: Sounds Around 39: Energy Sleuths 73: Waste Watchers
26. Describe and summarize observations of the transmission, reflection, and absorption of sound, light, and heat energy (PS-M-C1)	4: Sounds Around 39: Energy Sleuths 73: Waste Watchers
27. Explain the relationship between work input and work output by using simple machines (PS-M-C2)	
28. Explain the law of conservation of energy (PS-M-C2)	24: Nature's Recyclers 39: Energy Sleuths 81: Living with Fire

29. Compare and/or investigate the relationships among work, power, and efficiency (PS-M-C2)	39: Energy Sleuths 52: A Look at Aluminum 73: Waste Watchers 82: Resource Go Round 85: In the Driver's Seat
30. Trace energy transformations in a simple system (e.g., flashlight) (PS-M-C2)	39: Energy Sleuths
31. Compare types of electromagnetic waves (PS-M-C3)	
32. Identify and illustrate key characteristics of waves (e.g., wavelength, frequency, amplitude) (PS-M-C4)	
33. Predict the direction in which light will refract when it passes from one transparent material to another (e.g., from air to water, from prism to air) (PS-M-C4)	
34. Apply the law of reflection and law of refraction to demonstrate everyday phenomena (e.g., how light is reflected from tinted windows, how light is refracted by cameras, telescopes, eyeglasses) (PS-M-C4)	
35. Determine through experimentation whether light is reflected, transmitted, and/or absorbed by a given object or material (PS-M-C4)	
36. Explain the relationship between an object's color and the wavelength of light reflected or transmitted to the viewer's eyes (PS-M-C4)	78: Signs of Fall
37. Compare how heat is transferred by conduction, convection, and radiation (PS-M-C5)	44: Water Wonders 81: Living with Fire
38. Identify conditions under which thermal energy tends to flow from a system of higher energy to a system of lower energy (PS-M-C5)	39: Energy Sleuths 44: Water Wonders 73: Waste Watchers 81: Living with Fire
39. Describe how electricity can be produced from other types of energy (e.g., magnetism, solar, mechanical) (PS-M-C6)	14: Renewable or Not 39: Energy Sleuths 73: Waste Watchers
40. Identify heat energy gains and losses during exothermic and endothermic chemical reactions (PS-M-C7)	39: Energy Sleuths 44: Water Wonders 81: Living with Fire
41. Identify risks associated with the production and use of coal, petroleum, hydroelectricity, nuclear energy, and other energy forms (PS-M-C8)	4: Sounds Around 36: Pollution Search 39: Energy Sleuths 72: Air We Breathe 73: Waste Watchers 82: Resource Go Round 85: In the Driver's Seat 86: Our Changing World 92: A Look at Lifestyles
Science and the Environment	
42. Identify energy types from their source to their use and determine if the energy types are renewable, nonrenewable, or inexhaustible (SE-M-A6)	14: Renewable or Not 39: Energy Sleuths 44: Water Wonders 52: A Look at Aluminum 53: On the Move 73: Waste Watchers 82: Resource Go Round 92: A Look at Lifestyles

<p>43. Explain how the use of different energy resources affects the environment and the economy (SE-M-A6)</p>	<p>14: Renewable or Not 36: Pollution Search 39: Energy Sleuths 44: Water Wonders 52: A Look at Aluminum 53: On the Move 55: Planning the Ideal Community 72: Air We Breathe 73: Waste Watchers 82: Resource Go Round 85: In the Driver’s Seat 86: Our Changing World 92: A Look at Lifestyles</p>
<p>44. Explain how an inexhaustible resource can be harnessed for energy production (SE-M-A6)</p>	<p>14: Renewable or Not 36: Pollution Search 39: Energy Sleuths 44: Water Wonders 55: Planning the Ideal Community 73: Waste Watchers 86: Our Changing World 92: A Look at Lifestyles</p>
<p>45. Describe methods for sustaining renewable resources (SE-M-A6)</p>	<p>14: Renewable or Not 32: A Forest of Many Uses 36: Pollution Search 39: Energy Sleuths 50: 400-Acre Wood 53: On the Move 55: Planning the Ideal Community 69: Forest for the Trees 73: Waste Watchers 82: Resource Go Round 85: In the Driver’s Seat 86: Our Changing World 92: A Look at Lifestyles</p>
<p>46. Identify ways people can reuse, recycle, and reduce the use of resources to improve and protect the quality of life (SE-M-A6)</p>	<p>14: Renewable or Not 15: A Few of My Favorite Things 37: Reduce, Reuse, Recycle 39: Energy Sleuths 51: Make Your Own Paper 52: A Look at Aluminum 53: On the Move 55: Planning the Ideal Community 73: Waste Watchers 82: Resource Go Round 85: In the Driver’s Seat 86: Our Changing World 92: A Look at Lifestyles</p>
<p>47. Illustrate how various technologies influence resource use in an ecosystem (e.g., forestry management, soil conservation, fishery improvement) (SE-M-A8)</p>	<p>14: Renewable or Not 37: Reduce, Reuse, Recycle 39: Energy Sleuths 51: Make Your Own Paper 52: A Look at Aluminum 53: On the Move 55: Planning the Ideal Community 73: Waste Watchers 82: Resource Go Round 85: In the Driver’s Seat 86: Our Changing World</p>

Grade 6 Grade Level Expectations correlated to Project Learning Tree
PreK-8 Guide
Social Studies

Grade Level Expectation	PLT activity
Geography The World in Spatial Terms	
1. Use latitude and longitude to determine direction or locate or compare points on a map or representation of a globe (G-1A-M2)	4: Sounds Around 12: Invasive Species 29: Rain Reasons 50: 400-Acre Wood 55: Planning the Ideal Community 86: Our Changing World 95: Did You Notice?
Places and Regions	
2. Identify land and climatic conditions conducive to human settlement in regions of the world and describe the role of these conditions (G-1B-M1)	9: Planet Diversity 14: Renewable or Not 17: People of the Forest 49: Tropical Treehouse 54: I'd Like to Visit a Place Where... 55: Planning the Ideal Community 75: Tipi Talk 92: A Look at Lifestyles 94: By the Rivers of Babylon
3. Identify physical features that influenced world historical events and describe their influence (e.g., the Nile and Tigris-Euphrates as "cradles of civilization") (G-1B-M2)	92: A Look at Lifestyles 94: By the Rivers of Babylon
4. Explain ways in which goals, cultures, interests, inventions, and technological advances have affected people's perceptions and uses of places or regions in world history (G-1B-M4)	14: Renewable or Not 17: People of the Forest 49: Tropical Treehouse 92: A Look at Lifestyles 94: By the Rivers of Babylon
Physical and Human Systems	
5. Explain reasons for different patterns of migration among early peoples (G-1C-M4)	94: By the Rivers of Babylon
6. Explain factors or events that have facilitated cultural diffusion (e.g., the Silk Road, Crusades) (G-1C-M5)	93: Paper Civilizations 94: By the Rivers of Babylon
7. Describe the economic interdependence among various ancient civilizations (G-1C-M6)	94: By the Rivers of Babylon
8. Explain how ancient civilizations established and maintained political boundaries (G-1C-M7)	94: By the Rivers of Babylon
Environment and Society	
9. Explain how different physical environments affected human activity in ancient civilizations (G-1D-M2)	93: Paper Civilizations 94: By the Rivers of Babylon
10. Analyze world or regional distribution of natural resources in terms of the need to import or the capacity to export (G-1D-M3)	14: Renewable or Not 49: Tropical Treehouse 82: Resource Go Round 94: By the Rivers of Babylon
Civics Foundations of the American Political System	
11. Identify the essential elements of Greek and Roman government that would later influence the U.S. government (C-1B-M1)	

Economics	
Fundamental Economic Concepts	
12. Explain the role of expanding specialization in the development of world civilizations (E-1A-M4)	
13. Identify the functions and characteristics of money (e.g., money as a store of value) and compare barter exchange to money exchange (E-1A-M8)	14: Renewable or Not 82: Resource Go Round
14. Use economic concepts (e.g., supply and demand, interdependence) to describe the economic motivations for expanding trade and territorial domination in world history (E-1A-M9)	14: Renewable or Not 82: Resource Go Round 94: By the Rivers of Babylon
History	
Historical Thinking Skills	
15. Construct a timeline of key developments in world history (political, social, technological, religious/cultural) (H-1A-M1)	93: Paper Civilizations
16. Interpret data presented in a timeline to identify change and continuity in world civilizations (H-1A-M1)	93: Paper Civilizations 94: By the Rivers of Babylon
17. Describe the defining characteristics of major world civilizations from political, social, and economic perspectives (H-1A-M2)	93: Paper Civilizations 94: By the Rivers of Babylon
18. Describe the causes, effects, or impact of a given historical development or event in world civilizations (H-1A-M3)	93: Paper Civilizations 94: By the Rivers of Babylon
19. Use multiple primary and secondary sources to describe world civilizations (H-1A-M4)	93: Paper Civilizations 94: By the Rivers of Babylon
20. Identify historical issues or problems in world civilizations and discuss how they were addressed (H-1A-M5)	93: Paper Civilizations 94: By the Rivers of Babylon
21. Conduct historical research using a variety of resources to answer historical questions related to world civilizations (H-1A-M6)	93: Paper Civilizations 94: By the Rivers of Babylon
World History	
22. Describe features of the earliest communities (e.g., shelter, food, clothing) (H-1C-M1)	
23. Describe hunter-gatherer societies, including the development of tools and the use of fire (H-1C-M1)	
24. Explain how geographical features influenced development of early civilizations (e.g., domestication, cultivation, specialization) (H-1C-M2)	93: Paper Civilizations 94: By the Rivers of Babylon
25. Explain why agricultural societies developed from hunters and gatherers (H-1C-M2)	
26. Discuss the climatic changes and human modifications of the physical environment that gave rise to the domestication of plants and animals and new sources of clothing (H-1C-M2)	93: Paper Civilizations 94: By the Rivers of Babylon

27. Locate and describe the major river systems and discuss the physical settings that supported permanent settlement and early civilizations in Mesopotamia, Egypt, China, and the Indus valley (H-1C-M3)	93: Paper Civilizations 94: By the Rivers of Babylon
28. Describe the major characteristics of early river valley civilizations (H-1C-M3)	93: Paper Civilizations 94: By the Rivers of Babylon
29. Describe how early river civilizations influenced the development of other cultures through trade and cultural diffusion (H-1C-M4)	93: Paper Civilizations 94: By the Rivers of Babylon
30. Describe the development of agricultural societies and individual communities in Southwest Asia, the Mediterranean basin, and temperate Europe, including the role of plow technology (H-1C-M4)	93: Paper Civilizations 94: By the Rivers of Babylon
31. Identify the effects of migration and militarization on the politics and social fabric of Europe and Asia (H-1C-M5)	
32. Analyze the origins and influence of the Hittite, Minoan, and Mycenaean civilizations (H-1C-M5)	
33. Explain the significance of the introduction of iron tools and weapons in Southwest Asia and the Mediterranean region (H-1C-M6)	
34. Explain the significance of Phoenician trade in the Mediterranean basin (H-1C-M6)	
35. Identify forms of writing developed in early civilizations and discuss how written records changed political, legal, religious, and cultural life (H-1C-M6)	
36. Describe the development of the Greek city-states, the cultural achievements of Athens, and the impact of Alexander the Great's conquests (H-1C-M7)	
37. Explain the sharing of ideas, goods, and services through trade between the Greek and Roman civilizations, and the influence of those civilizations on other cultures (H-1C-M7)	
38. Describe and compare/contrast the key characteristics of classical civilizations (e.g., Greek, Roman, Persian, Chinese) (H-1C-M7)	
39. Identify the major new religions and relate them to the empires that emerged in the Mediterranean Basin, China, and India (i.e., Christianity, Hinduism, Buddhism, Islam) (H-1C-M8)	
40. Compare and contrast the major religions in terms of leaders, key beliefs, and location (H-1C-M8)	
41. Trace the spread of major religions and cultural traditions (e.g., the migration of Jews, spread of Christianity, expansion of Islamic rule) (H-1C-M9)	

42. Identify the effect that the major religions have had on European, Asian, and African civilizations (H-1C-M9)	
43. Describe the changes and developments brought about by the emergence and collapse of major empires/kingdoms in Europe, Asia, Africa, and the Americas prior to A.D. 1000 (H-1C-M10)	
44. Describe major events, key figures, and social structure of the Early Middle Ages (e.g., the fall of Rome, Charlemagne, feudalism) (H-1C-M10)	
45. Identify effects of exploration and trade on the economic and cultural development of Europe, Africa, and Asia prior to 1500 (H-1C-M11)	
46. Explain how communication among regions was accomplished between AD 1000 to 1500 (H-1C-M11)	
47. Explain how and why Europe changed politically, socially, culturally, or economically during the period of intensified hemispheric interactions (H-1C-M12)	
48. Describe the major contributing factors that led to the Renaissance (H-1C-M12)	
49. Describe the major contributing factors that would lead to the Reformation (H-1C-M12)	
50. Explain the major social, economic, political, and cultural features of European, African, and Asian societies that stimulated exploration and colonization (H-1C-M14)	
51. Identify major technological developments in shipbuilding, navigation, and naval warfare, and trace the cultural origins of various innovations (H-1C-M14)	
52. Describe the major achievements of the early Renaissance in Europe, including the impact of innovations in printing (H-1C-M14)	

Grade 6 Grade Level Expectations correlated to Project Learning Tree
PreK-8 Guide
Mathematics

Grade Level Expectation	PLT activity
Number and Number Relations	
1. Factor whole numbers into primes (N-1-M)	
2. Determine common factors and common multiples for pairs of whole numbers (N-1-M)	
3. Find the greatest common factor (GCF) and least common multiple (LCM) for whole numbers in the context of problem-solving (N-1-M)	
4. Recognize and compute equivalent representations of fractions and decimals (i.e., halves, thirds, fourths, fifths, eighths, tenths, hundredths) (N-1-M) (N-3-M)	16: Pass the Plants, Please 28: Air Plants 84: The Global Climate
5. Decide which representation (i.e., fraction or decimal) of a positive number is appropriate in a real-life situation (N-1-M) (N-5-M)	
5. Decide which representation (i.e., fraction or decimal) of a positive number is appropriate in a real-life situation (N-1-M) (N-5-M)	
6. Compare positive fractions, decimals, and positive and negative integers using symbols (i.e., <, =, >) and number lines (N-2-M)	28: Air Plants 84: The Global Climate
7. Read and write numerals and words for decimals through ten-thousandths (N-3-M)	84: The Global Climate
8. Demonstrate the meaning of positive and negative numbers and their opposites in real-life situations (N-3-M) (N-5-M)	
9. Add and subtract fractions and decimals in real-life situations (N-5-M)	28: Air Plants 84: The Global Climate
10. Use and explain estimation strategies to predict computational results with positive fractions and decimals (N-6-M)	84: The Global Climate
11. Mentally multiply and divide by powers of 10 (e.g., $25/10 = 2.5$; $12.56 \times 100 = 1,256$) (N-6-M)	
12. Divide 4-digit numbers by 2-digit numbers with the quotient written as a mixed number or a decimal (N-7-M)	
13. Use models and pictures to explain concepts or solve problems involving ratio, proportion, and percent with whole numbers (N-8-M)	14: Renewable or Not 16: Pass the Plants, Please 28: Air Plants 66: Germinating Giants 67: How Big is Your Tree? 70: Soil Stories
Algebra	
14. Model and identify perfect squares up to 144 (A-1-M)	

15. Match algebraic equations and expressions with verbal statements and vice versa (A-1-M) (A-3-M) (A-5-M) (P-2-M)	50: 400-Acre Wood
16. Evaluate simple algebraic expressions using substitution (A-2-M)	50: 400-Acre Wood
17. Find solutions to 2-step equations with positive integer solutions (e.g., $3x - 5 = 13$, $2x + 3x = 20$) (A-2-M)	50: 400-Acre Wood
Measurement	
18. Measure length and read linear measurements to the nearest sixteenth-inch and mm (M-1-M)	21: Adopt a Tree 41: How Plants Grow 66: Germinating Giants 67: How Big is Your Tree? 70: Soil Stories 77: Trees in Trouble
19. Calculate perimeter and area of triangles, parallelograms, and trapezoids (M-1-M)	
20. Calculate, interpret, and compare rates such as \$/lb., mpg, and mph (M-1-M) (A-5-M)	38: Every Drop Counts 50: 400-Acre Wood 53: On the Move 70: Soil Stories 73: Waste Watchers 85: In the Drivers' Seat 84: The Global Climate
21. Demonstrate an intuitive sense of relative sizes of common units for length and area of familiar objects in real-life problems (e.g., estimate the area of a desktop in square feet, the average adult is between 1.5 and 2 meters tall) (M-2-M) (G-1-M)	
22. Estimate perimeter and area of any 2-dimensional figure (regular and irregular) using standard units (M-2-M)	
23. Identify and select appropriate units to measure area (M-3-M)	9: Planet Diversity 48: Field, Forest and Stream 77: Trees in Trouble
Geometry	
24. Use mathematical terms to describe the basic properties of 3-dimensional objects (edges, vertices, faces, base, etc.) (G-2-M)	
25. Relate polyhedra to their 2-dimensional shapes by drawing or sketching their faces (G-2-M) (G-4-M)	
26. Apply concepts, properties, and relationships of points, lines, line segments, rays, diagonals, circles, and right, acute, and obtuse angles and triangles in real-life situations, including estimating sizes of angles (G-2-M) (G-5-M) (G-1-M)	
27. Make and test predictions regarding tessellations with geometric shapes (G-3-M)	
28. Use a rectangular grid and ordered pairs to plot simple shapes and find horizontal and vertical lengths and area (G-6-M)	

Data Analysis, Probability, and Discrete Math	
29. Collect, organize, label, display, and interpret data in frequency tables, stem-and-leaf plots, and scatter plots and discuss patterns in the data verbally and in writing (D-1-M) (D-2-M) (A-3-M)	35: Loving It Too Much
30. Describe and analyze trends and patterns observed in graphic displays (D-2-M)	16: Pass the Plants, Please 28: Air Plants 29: Rain Reasons 35: Loving It Too Much 37: Reduce, Reuse, Recycle 41: How Plants Grow 47: Are Vacant Lots Vacant? 50: 400-Acre Wood 77: Trees in Trouble 84: The Global Climate
31. Demonstrate an understanding of precision, accuracy, and error in measurement (D-2-M) (M-2-M)	41: How Plants Grow 48: Field, Forest and Stream 77: Trees in Trouble
32. Calculate and discuss mean, median, mode, and range of a set of discrete data to solve real-life problems (D-2-M)	29: Rain Reasons 35: Loving It Too Much 41: How Plants Grow 77: Trees in Trouble
33. Create and use Venn diagrams with two overlapping categories to solve counting logic problems (D-3-M)	
34. Use lists, tree diagrams, and tables to determine the possible combinations from two disjoint sets when choosing one item from each set (D-4-M)	
35. Illustrate and apply the concept of complementary events (D-5-M)	
36. Apply the meaning of equally likely and equally probable to real-life situations (D-5-M) (D-6-M)	
Patterns, Relations, and Functions	
37. Describe, complete, and apply a pattern of differences found in an input-output table (P-1-M) (P-2-M) (P-3-M)	
38. Describe patterns in sequences of arithmetic and geometric growth and now-next relationships (i.e., growth patterns where the next term is dependent on the present term) with numbers and figures (P-3-M) (A-4-M)	12: Invasive Species 37: Reduce, Reuse, Recycle

Grade 6 Grade Level Expectations correlated to Project Learning Tree
PreK-8 Guide
Reading/Language Arts

Grade Level Expectation	PLT activity
Reading and Responding	
Standard 1:	
1. Identify word meanings using a variety of strategies, including: using context clues (e.g., definition, restatement, example, contrast); using structural analysis (e.g., roots, affixes); determining word origins (etymology); using knowledge of idioms; explaining word analogies (ELA-1-M1)	
2. Identify common abbreviations, symbols, acronyms, and multiple-meaning words (ELA-1-M1)	
3. Develop specific vocabulary (e.g., scientific, content-specific, current events) for various purposes (ELA-1-M1)	55: Planning the Ideal Community 84: The Global Climate
4. Identify and explain story elements, including: theme development; character development; relationship of word choice and mood; plot sequence (e.g., exposition, rising action, climax, falling action, resolution) (ELA-1-M2)	4: Sounds Around 18: Tale of the Sun 36: Pollution Search 8: The Forest of S.T. Shrew 89: Trees for Many Reasons
5. Identify and explain literary and sound devices, including: foreshadowing; flashback; imagery; onomatopoeia (ELA-1-M2)	4: Sounds Around 7: Habitat Pen Pals 89: Trees for Many Reasons
6. Answer literal and inferential questions in oral and written responses about ideas and information in grade-appropriate texts, including: comic strips; editorial cartoons; speeches (ELA-1-M3)	8: The Forest of S.T. Shrew 84: The Global Climate 89: Trees for Many Reasons 90: Native Ways
7. Explain the connections between ideas and information in a variety of texts (e.g., journals, technical specifications, advertisements) and real-life situations and other texts (ELA-1-M4)	55: Planning the Ideal Community 57: Democracy in Action
Standard 6:	
8. Compare and contrast cultural characteristics (e.g., customs, traditions, viewpoints) found in national, world, and multicultural literature (ELA-6-M1)	4: Sounds Around 91: In the Good Old Days
9. Compare and contrast elements (e.g., plot, setting, characters, theme) in a variety of genres (ELA-6-M2)	

<p>10. Use knowledge of the distinctive characteristics to classify and interpret elements of various genres, including: fiction (e.g., myths, historical fiction); nonfiction (e.g., newspaper articles, magazine articles); poetry (e.g., lyric, narrative); drama (e.g., short plays) (ELA-6-M3)</p>	<p>4: Sounds Around 5: Poet-Tree 7: Habitat Pen Pals 91: In the Good Old Days</p>
<p>Standard 7:</p>	
<p>11. Demonstrate understanding of information in grade-appropriate texts using a variety of strategies, including: sequencing events and steps in a process; summarizing and paraphrasing information; identifying stated or implied main ideas and supporting details; comparing and contrasting literary elements and ideas; making simple inferences and drawing conclusions; predicting the outcome of a story or situation; identifying literary devices (ELA-7-M1)</p>	<p>8: The Forest of S.T. Shrew 52: A Look at Aluminum 57: Democracy in Action 84: The Global Climate 89: Trees for Many Reasons 91: In the Good Old Days</p>
<p>12. Examine and explain the relationship between life experiences and texts to generate solutions to problems (ELA-7-M2)</p>	<p>7: Habitat Pen Pals 8: The Forest of S.T. Shrew 55: Planning the Ideal Community 84: The Global Climate 89: Trees for Many Reasons 91: In the Good Old Days</p>
<p>13. Use technical information and other available resources (e.g., software programs, manuals) to solve problems (ELA-7-M2)</p>	<p>33: Forest Consequences 35: Loving It Too Much 39: Energy Sleuths 55: Planning the Ideal Community 84: The Global Climate</p>
<p>14. Analyze an author's stated or implied purpose for writing (e.g., to explain, to entertain, to persuade, to inform, to express personal attitudes or beliefs) (ELA-7-M3)</p>	<p>55: Planning the Ideal Community 57: Democracy in Action 59: Power of Print 84: The Global Climate 89: Trees for Many Reasons 90: Native Ways 91: In the Good Old Days</p>
<p>15. Identify persuasive techniques (e.g., unsupported inferences, faulty reasoning, generalizations) that reflect an author's viewpoint (perspective) in texts (ELA-7-M3)</p>	<p>57: Democracy in Action 59: Power of Print 89: Trees for Many Reasons 90: Native Ways 91: In the Good Old Days</p>
<p>16. Analyze grade-appropriate print and nonprint texts using various reasoning skills, including: identifying cause-effect relationships; raising questions; reasoning inductively and deductively; generating a theory or hypothesis; skimming/scanning; distinguishing facts from opinions and probability (ELA-7-M4)</p>	<p>57: Democracy in Action 59: Power of Print 90: Native Ways</p>

Writing

Writing	
Standard 2:	
17. Write multiparagraph compositions on student- or teacher-selected topics organized with the following: an established central idea; organizational patterns (e.g., comparison/contrast, order of importance, chronological order);appropriate to the topic; elaboration (e.g., fact, examples, and/or specific details);transitional words and phrases that unify ideas and points ;an overall structure including an introduction, a body/middle, and a concluding paragraph that summarizes important ideas (ELA-2-M1)	12: Invasive Species
18. Organize individual paragraphs with topic sentences, relevant elaboration, and concluding sentences (ELA-2-M1)	12: Invasive Species 21: Adopt a Tree
19. Develop grade-appropriate compositions on student- or teacher-selected topics that include the following: word choices (diction) appropriate to the identified audience and/or purpose; vocabulary selected to clarify meaning, create images, and set a tone; information/ideas selected to engage the interest of the reader ;clear voice (individual personality);variety in sentence structure (ELA-2-M2)	7: Habitat Pen Pals 12: Invasive Species 21: Adopt a Tree 96: Improve Your Place
20. Develop grade-appropriate compositions applying writing processes such as the following: selecting topic and form; prewriting (e.g., brainstorming, researching, raising questions, generating graphic organizers);drafting; conferencing (e.g., peer, teacher);revising based on feedback and use of various tools (e.g., LEAP21 Writer’s Checklist, rubrics);proofreading/editing; publishing using technology (ELA-2-M3)	7: Habitat Pen Pals 12: Invasive Species 96: Improve Your Place
21. Develop grade-appropriate paragraphs and multiparagraph compositions using the various modes of writing (e.g., description, narration, exposition, persuasion), emphasizing narration and exposition (ELA-2-M4)	7: Habitat Pen Pals 12: Invasive Species 21: Adopt a Tree 96: Improve Your Place
22. Use the various modes to write compositions, including: comparison/contrast; essays based on a stated opinion (ELA-2-M4)	21: Adopt a Tree
23. Develop writing using a variety of literary devices, including foreshadowing, flashback, and imagery (ELA-2-M5)	5: Poet-Tree 7: Habitat Pen Pals

<p>24. Write for various purposes, including: business letters that include a heading, inside address, salutation, body, and signature; evaluations, supported with facts and opinions, of newspaper/magazine articles and editorial cartoons; text-supported interpretations of elements of novels, stories, poems, and plays (ELA-2-M6)</p>	<p>7: Habitat Pen Pals 26: Dynamic Duos 96: Improve Your Place</p>
Writing/Proofreading	
Standard 3:	
<p>25. Use standard English punctuation, including: hyphens to separate syllables of words and compound adjectives; commas and coordinating conjunctions to separate independent clauses in compound sentences; colons after salutation in business letters (ELA-3-M2)</p>	
<p>26. Capitalize names of companies, buildings, monuments, and geographical names (ELA-3-M2)</p>	
<p>27. Write paragraphs and compositions following standard English structure and usage, including: possessive forms of singular and plural nouns and pronouns; regular and irregular verb tenses; homophones (ELA-3-M3)</p>	
<p>28. Apply knowledge of parts of speech in writing, including: prepositional phrases; interjections for emphasis; conjunctions and transitions to connect ideas (ELA-3-M4)</p>	
<p>29. Spell high-frequency, commonly confused, frequently misspelled words and derivatives (e.g., roots and affixes) correctly (ELA-3-M5)</p>	
<p>30. Use a variety of resources (e.g., glossaries, dictionaries, thesauruses, spell check) to find correct spellings (ELA-3-M5)</p>	
Speaking and Listening	
Standard 4:	
<p>31. Adjust diction and enunciation to suit the purpose for speaking (ELA-4-M1)</p>	<p>33: Forest Consequences 40: Then and Now 60: Publicize It! 96: Improve Your Place</p>
<p>32. Use standard English grammar, diction, syntax, and pronunciation when speaking (ELA-4-M1)</p>	<p>33: Forest Consequences 40: Then and Now 60: Publicize It! 96: Improve Your Place</p>
<p>33. Follow procedures (e.g., read, question, write a response, form groups) from detailed oral instructions (ELA-4-M2)</p>	
<p>34. State oral directions/procedures for tasks (ELA-4-M2)</p>	<p>96: Improve Your Place</p>

35. Adjust volume and inflection to suit the audience and purpose of presentations (ELA-4-M3)	33: Forest Consequences 40: Then and Now 60: Publicize It! 96: Improve Your Place
36. Organize oral presentations with a thesis, an introduction, a body developed with relevant details, and a conclusion (ELA-4-M3)	33: Forest Consequences 40: Then and Now 60: Publicize It! 96: Improve Your Place
37. Demonstrate active listening strategies for various purposes, including: viewing a video to interpret the meaning of the story, to determine the speaker's/character's attitude using verbal and nonverbal cues, and to draw conclusions about the presentation; summarizing the main points of a speaker's message, including supporting details and their significance (ELA-4-M4)	8: The Forest of S.T. Shrew 19: Viewpoints on the Line 33: Forest Consequences 84: The Global Climate 90: Native Ways 91: In the Good Old Days
38. Deliver oral presentations and responses, including: a research-based presentation; formal and informal descriptive presentations that convey relevant information and descriptive details (ELA-4-M4)	12: Invasive Species 33: Forest Consequences 40: Then and Now 60: Publicize It! 96: Improve Your Place
39. Evaluate media for various purposes, including: text structure; images/sensory details; support for main position; background information; opinions vs. facts; sequence of ideas and organization (ELA-4-M5)	59: Power of Print
40. Participate in group and panel discussions, including: explaining the effectiveness and dynamics of group process; applying agreed-upon rules for formal and informal discussions; assuming a variety of roles (e.g., facilitator, recorder, leader, listener) (ELA-4-M6)	33: Forest Consequences 53: On the Move 55: Planning the Ideal Community 56: We Can Work It Out
Information Resources	
Standard 5:	
41. Locate and select information using organizational features of grade-appropriate resources, including: complex reference sources (e.g., almanacs, atlases, newspapers, magazines, brochures, map legends, prefaces, appendices); electronic storage devices (e.g., CD-ROMs, diskettes, software, drives); frequently accessed and bookmarked Web addresses; organizational features of electronic texts (e.g., bulletin boards, databases, keyword searches, e-mail addresses) (ELA-5-M1)	11: Can It Be Real? 12: Invasive Species 17: People of the Forest 40: Then and Now 45: Web of Life 96: Improve Your Place

<p>42. Locate and integrate information from grade-appropriate resources, including: multiple printed texts (e.g., encyclopedias, atlases, library catalogs, specialized dictionaries, almanacs, technical encyclopedias); electronic sources (e.g., Web sites, databases); other media sources (e.g., audio and video tapes, films, documentaries, television, radio) (ELA-5-M2)</p>	<p>11: Can It Be Real? 12: Invasive Species 17: People of the Forest 40: Then and Now 45: Web of Life 96: Improve Your Place</p>
<p>43. Identify sources as primary and secondary to determine credibility of information (ELA-5-M2)</p>	<p>12: Invasive Species 17: People of the Forest 40: Then and Now 45: Web of Life 90: Native Ways 96: Improve Your Place</p>
<p>44. Locate, gather, and select information using data-gathering strategies, including: Surveying; Interviewing; paraphrasing (ELA-5-M3)</p>	<p>11: Can It Be Real? 12: Invasive Species 17: People of the Forest 40: Then and Now 45: Web of Life 96: Improve Your Place</p>
<p>45. Generate grade-appropriate research reports that include information presented in a variety of forms, including: visual representations of data/information; graphic organizers (e.g., outlines, timelines, charts, webs);bibliographies (ELA-5-M3)</p>	<p>11: Can It Be Real? 12: Invasive Species 17: People of the Forest 40: Then and Now 45: Web of Life 96: Improve Your Place</p>
<p>46. Use word processing and/or other technology to draft, revise, and publish a variety of works, including compositions, investigative reports, and business letters (ELA-5-M4)</p>	<p>11: Can It Be Real? 12: Invasive Species 17: People of the Forest 40: Then and Now 45: Web of Life 96: Improve Your Place</p>
<p>47. Give credit for borrowed information following acceptable-use policy, including: integrating quotations and citations; using endnotes; 48. creating bibliographies and/or works cited lists (ELA-5-M5)</p>	<p>11: Can It Be Real? 12: Invasive Species 17: People of the Forest 40: Then and Now 45: Web of Life 96: Improve Your Place</p>
<p>49. Interpret information from a variety of graphic organizers , including timelines, charts, schedules, tables, diagrams, and maps in grade-appropriate sources (ELA-5-M6)</p>	<p>12: Invasive Species 17: People of the Forest 40: Then and Now 45: Web of Life 96: Improve Your Place</p>