

Grade 5 Grade Level Expectations correlated to Project Learning Tree
PreK-8 Guide
Science

Grade Level Expectation	PLT activity
Science as Inquiry The Abilities 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 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 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 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
10. Identify the difference between description and explanation (SI-M-A4)	4: Sounds Around 24: Nature's Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 48: Field, Forest and Stream

	73: Waste Watchers 78: Signs of Fall
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)	4: Sounds Around 24: Nature's Recyclers 28: Air Plants 37: Reduce, Reuse, Recycle 39: Energy Sleuths 48: Field, Forest and Stream 73: Waste Watchers 78: Signs of Fall
12. Use data and information gathered to develop an explanation of experimental results (SI-M-A4)	41: How Plants Grow 42: Sunlight and Shades of Green
13. Identify patterns in data to explain natural events (SI-M-A4)	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 73: Waste Watchers 78: Signs of Fall
14. Develop models to illustrate or explain conclusions reached through investigation (SI-M-A5)	4: Sounds Around 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream 61: The Closer You Look
15. Identify and explain the limitations of models used to represent the natural world (SI-M-A5)	4: Sounds Around 41: How Plants Grow 42: Sunlight and Shades of Green 48: Field, Forest and Stream
16. Use evidence to make inferences and predict trends (SI-M-A5)	41: How Plants Grow 42: Sunlight and Shades of Green
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)	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 73: Waste Watchers 78: Signs of Fall
18. Identify faulty reasoning and statements that misinterpret or are not supported by the evidence (SI-M-A6)	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 73: Waste Watchers 78: Signs of Fall
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)	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 73: Waste Watchers 78: Signs of Fall
20. Write clear, step-by-step instructions that others can follow to carry out procedures or conduct investigations (SI-M-A7)	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 73: Waste Watchers 78: Signs of Fall
21. Distinguish between <i>observations</i> and <i>inferences</i> (SI-M-A7)	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 73: Waste Watchers 78: Signs of Fall
22. Use evidence and observations to explain and communicate the results of investigations (SI-M-A7)	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 73: Waste Watchers 78: Signs of Fall
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 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 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 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 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 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 73: Waste Watchers
Physical Science	
Properties and Changes of Properties in Matter	
1. Measure a variety of objects in metric system units (PS-M-A1)	41: How Plants Grow 66: Germinating Giants 67: How Big is Your Tree? 70: Soil Stories
2. Compare the physical properties of large and small quantities of the same type of matter (PS-M-A1)	51: Make Your Own Paper 70: Soil Stories
3. Describe the structure of atoms and the electrical charge of protons, neutrons, and electrons (PS-M-A2)	
4. Identify the physical and chemical properties of various substances and group substances according to their observable and measurable properties (e.g., conduction, magnetism, light transmission) (PS-M-A3)	48: Field, Forest and Stream
5. Describe the properties and behavior of water in its solid, liquid, and gaseous phases (states) (PS-M-A5)	44: Water Wonders
6. Describe new substances formed from common chemical reactions (e.g., burning paper produces ash) (PS-M-A6)	16: Pass the Plants, Please 23: The Fallen Log 24: Nature's Recyclers 28: Air Plants 81: Living with Fire 82: Resource Go Round
Motions and Forces	
7. Compare, calculate, and graph the average speeds of objects in motion using both metric system and U.S. system units (PS-M-B1)	
8. Explain that gravity accelerates all falling objects at the same rate in the absence of air resistance (PS-M-B3)	
9. Demonstrate a change in speed or direction of an object's motion with the use of unbalanced forces (PS-M-B5)	
Transformations of Energy	
10. Compare potential and kinetic energy and give examples of each (PS-M-C1)	39: Energy Sleuths 81: Living with Fire 85: In the Driver's Seat
11. Classify energy resources as <i>renewable</i> , <i>non-renewable</i> , or <i>inexhaustible</i> (PS-M-C1)	14: Renewable or Not 39: Energy Sleuths 85: In the Driver's Seat
12. Identify the Sun as Earth's primary energy source and give examples (e.g., photosynthesis, water cycle) to support that conclusion (PS-M-C3)	41: How Plants Grow 42: Sunlight and Shades of Green 44: Water Wonders 45: Web of Life 72: Waste Watchers 79: Tree Lifecycle
13. Investigate how changes in the position of a light source and an object alter the size and shape of the shadow (PS-M-C4)	67: How Big is Your Tree? 63: Tree Factory
14. Identify other types of energy produced through the use of	39: Energy Sleuths

electricity (e.g., heat, light, mechanical) (PS-M-C6)	52: A Look at Aluminum 53: On the Move 72: Waste Watchers 85: In the Driver's Seat
Life Science Structure and Function in Living Systems	
15. Identify the cell as the basic unit of living things (LS-M-A1)	
16. Observe, identify, and describe the basic components of cells and their functions (e.g., cell wall, cell membrane, cytoplasm, nucleus) (LS-M-A1)	
17. Compare plant and animal cells and label cell components (LS-M-A2)	
18. Describe the metamorphosis of an amphibian (e.g., frog) (LS-M-A3)	
19. Describe the processes of photosynthesis and respiration in green plants (LS-M-A4)	27: Every Tree for Itself 28: Air Plants 41: How Plants Grow 42: Sunlight and Shades of Green 63: Tree Factory 79: Tree Lifecycle
20. Describe the levels of structural organization in living things (e.g., cells, tissues, organs, organ systems) (LS-M-A5)	27: Every Tree for Itself 76: Tree Cookies 79: Tree Lifecycle
21. Identify diseases caused by germs and how they can be transmitted from person to person (LS-M-A7)	
Populations and Ecosystems	
22. Develop and use a simple dichotomous key to classify common plants and animals (LS-M-C1)	6: Picture This! 9: Planet Diversity 64: Looking at Leaves 68: Name that Tree
23. Construct food chains that could be found in ponds, marshes, oceans, forests, or meadows (LS-M-C2)	22: Trees as Habitats 23: The Fallen Log 24: Nature's Recyclers 45: Web of Life 49: Tropical Treehouse
24. Describe the roles of producers, consumers, and decomposers in a food chain (LS-M-C2)	22: Trees as Habitats 23: The Fallen Log 24: Nature's Recyclers 45: Web of Life 49: Tropical Treehouse
25. Compare food chains and food webs (LS-M-C2)	22: Trees as Habitats 23: The Fallen Log 24: Nature's Recyclers 45: Web of Life 49: Tropical Treehouse
26. Identify and describe ecosystems of local importance (LS-M-C3)	9: Planet Diversity 20: Environmental Exchange Box 48: Forest, Field, and Stream
27. Compare common traits of organisms within major ecosystems (LS-M-C3)	5: Picture This! 7: Habitat Pen Pals 9: Planet Diversity 10: Charting Diversity 23: The Fallen Log 24: Nature's Recyclers 43: Have Seeds, Will Travel 47: Are Vacant Lots Vacant?
28. Explain and give examples of predator/prey relationships (LS-M-	8: The Forest of S.T. Shrew

C4)	11: Can It Be Real? 12: Invasive Species 23: The Fallen Log 25: Birds and Worms 26: Dynamic Duos 45: Web of Life 88: Life on the Edge
Adaptations of Organisms	
29. Describe adaptations of plants and animals that enable them to thrive in local and other natural environments (LS-M-D1)	7: Habitat Pen Pals 10: Charting Diversity 11: Can It be Real? 12: Invasive Species 23: The Fallen Log 24: Nature's Recyclers 25: Birds and Worms 26: Dynamic Duos 43: Have Seeds, Will Travel 88: Life on the Edge
Earth and Space Science	
Structure of the Earth	
30. Identify organic and inorganic matter in soil samples with the aid of a hand lens or microscope (ESS-M-A4)	24: Nature's Recyclers 48: Forest, Field and Stream 70: Soil Stories
31. Identify common rocks and minerals and explain their uses and economic significance (ESS-M-A5)	14: Renewable or Not 52: A Look at Aluminum 70: Soil Stories 82: Resource Go Round
32. Demonstrate the results of constructive and destructive forces using models or illustrations (ESS-M-A7)	
33. Identify the processes that prevent or cause erosion (ESS-M-A7)	44: Water Wonders 70: Soil Stories 96: Improve Your Place
34. Identify the components of the hydrosphere (ESS-M-A11)	
35. Identify the atmosphere as a mixture of gases, water vapor, and particulate matter (ESS-M-A11)	72: Air We Breathe
36. Identify, describe, and compare climate zones (e.g., polar, temperate, tropical) (ESS-M-A11)	49: Tropical Treehouse
37. Identify typical weather map symbols and the type of weather they represent (ESS-M-A12)	
Earth History	
38. Estimate the range of time over which natural events occur (e.g., lightning in seconds, mountain formation over millions of years) (ESS-M-B3)	
Earth in the Solar System	
39. Identify the physical characteristics of the Sun (ESS-M-C1)	
40. Describe the significance of Polaris as the North Star (ESS-M-C1)	
41. Explain why the Moon, Sun, and stars appear to move from east to west across the sky (ESS-M-C1)	
42. Differentiate among moons, asteroids, comets, meteoroids, meteors, and meteorites (ESS-M-C2)	
43. Describe the characteristics of the inner and outer planets (ESS-M-C2)	
44. Explain rotation and revolution by using models or illustrations (ESS-M-C4)	
45. Identify Earth's position in the solar system (ESS-M-C5)	

46. Identify and explain the interaction of the processes of the water cycle (ESS-M-C6) (ESS-M-A10)	44: Water Wonders 48: Forest, Field and Stream
47. Identify and explain advances in technology that have enabled the exploration of space (ESS-M-C8)	
Science and the Environment	
48. Determine the ability of an ecosystem to support a population (carrying capacity) by identifying the resources needed by that population (SE-M-A2)	9: Planet Diversity 12: Invasive Species 14: Renewable or Not 22: Trees as Habitats 27: Every Tree for Itself 45: Web of Life 47: Are Vacant Lots Vacant? 49: Tropical Treehouse
49. Identify and give examples of pollutants found in water, air, and soil (SE-M-A3)	36: Pollution Search 47: Are Vacant Lots Vacant? 72: Air We Breathe 73: Waste Watchers 85: In the Driver's Seat 96: Improve Your Place
50. Describe the consequences of several types of human activities on local ecosystems (e.g., polluting streams, regulating hunting, introducing nonnative species) (SE-M-A4)	9: Planet Diversity 12: Invasive Species 14: Renewable or Not 15: A Few of My Favorite Things 17: People of the Forest 21: Adopt a Tree 32: A Forest of Many Uses 38: Every Drop Counts 39: Energy Sleuths 44: Water Wonders 45: Web of Life 47: Are Vacant Lots Vacant? 49: Tropical Treehouse 70: Soil Stories 77: Trees in Trouble 80: Nothing Succeeds Like Succession 86: Our Changing World 88: Life on the Edge
51. Describe naturally occurring cycles and identify where they are found (e.g., carbon, nitrogen, water, oxygen) (SE-M-A7)	23: The Fallen Log 28: Air Plants 44: Water Wonders 78: Signs of Fall 79: Tree Lifecycle 80: Nothing Succeeds Like Succession 82: Resource Go Round 86: Our Changing World

Grade 5 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. Describe the characteristics, functions, and applications of various types of maps (G-1A-M1)	4: Sounds Around 53: On the Move 55: Planning the Ideal Community
2. Compare the uses of different types of maps, including two different types of maps of the same area (G-1A-M1)	14: Renewable or Not 53: On the Move 55: Planning the Ideal Community
3. Interpret a map, using a map key/legend and symbols, distance scale, compass rose, cardinal or intermediate directions, and latitude and longitude (G-1A-M2)	4: Sounds Around 53: On the Move 55: Planning the Ideal Community
4. Locate major landforms and geographic features, places, and bodies of water/waterways on a map of the United States (G-1A-M2)	
5. Translate a mental map into sketch form to illustrate relative location, size, and distances between places (G-1A-M3)	4: Sounds Around 53: On the Move 55: Planning the Ideal Community
Places and Regions	
6. Describe types of settlements and patterns of land use in Colonial America and suggest reasons for locations of cities and settlements (G-1B-M1)	75: Tipi Talk
7. Identify ways in which location and physical features influence the development or life in a region of the United States (e.g., effects of natural barriers) (G-1B-M2)	75: Tipi Talk
8. Identify physical or other criteria used to define regions and apply criteria to distinguish one region from another in the United States (G-1B-M3)	
9. Explain ways in which goals, cultures, interests, inventions, and technological advances affected perceptions and uses of places or regions in Colonial America (G-1B-M4)	75: Tipi Talk 90: Native Ways 92: A Look at Lifestyles
Physical and Human Systems	
10. Describe the influence of location and physical setting on the founding of the original thirteen colonies (G-1C-M3)	
11. Explain the reasons why Europeans chose to explore and colonize the world (G-1C-M4)	
12. Describe the economic interdependence among the thirteen American colonies (G-1C-M6)	
13. Explain how geographic differences and similarities among the thirteen American colonies contributed to political cooperation and conflict (G-1C-M7)	
Environment and Society	
14. Describe the impact of human action on the physical environment of early America (G-1D-M1)	92: A Look at Lifestyles
15. Explain and give examples of how Native Americans and Europeans adapted to living in a particular North American physical environment (G-1D-M2)	90: Native Ways 92: A Look at Lifestyles
16. Identify the natural resources used by people in the United States (G-1D-M3)	14: Renewable or Not
Civics	
Structure and Purposes of Government	
17. Compare aspects of American colonial government (e.g., local, colonial governors, role of the British parliament and Crown) to present-day U.S. local, state, and national government (C-1A-M5)	
Economics	
Fundamental Economic Concepts	

18. Describe economic activities within and among American Indian cultures prior to contact with Europeans (E-1A-M9)	90: Native Ways 92: A Look at Lifestyles
19. Use economic concepts (e.g., supply and demand, scarcity, interdependence) to identify the economic motivations for European exploration and settlement in the Americas (E-1A-M9)	14: Renewable or Not
History	
Historical Thinking Skills	
20. Construct a timeline of key events in American history (beginnings to 1763) (H-1A-M1)	
21. Demonstrate an understanding of relative and absolute chronology by interpreting data presented in a timeline (H-1A-M1)	76: Tree Cookies
22. Identify different points of view about key events in early American history (H-1A-M2)	19: Viewpoints on the Line
23. Identify the causes, effects, or impact of a given event in early American history (H-1A-M3)	
24. Use both a primary and secondary source to describe key events or issues in early American history (H-1A-M4)	
25. Identify historical issues or problems in early America and explain how they were addressed (H-1A-M5)	
26. Conduct historical research using a variety of resources to answer historical questions related to early American history (H-1A-M6)	
United States History	
27. Identify and describe indigenous cultures and groups that existed in the Americas at the beginning of European exploration (H-1B-M1)	
28. Describe the trade that connected the Americas, Western Europe, and Western Africa prior to 1620, including the origins of the West Africa-European trade connection (H-1B-M1)	
29. Compare and contrast Africans, Europeans, and Native Americans converging in the Western Hemisphere after 1492 (H-1B-M1)	
30. Explain that cultures change through cultural diffusion, invention, and innovation (H-1B-M2)	40: Then and Now 75: Tipi Talk 90: Native Ways 92: A Look at Lifestyles
31. Describe major early explorations and explorers and their reasons for exploration (H-1B-M2)	
32. Describe the Spanish conquests in the Americas including the impact on the Aztecs, Incas, and other indigenous peoples (H-1B-M2)	
33. Explain the course and consequences of the Columbian Exchange, including its cultural, ecological, and economic impact on Europe, the Americas, and West Africa (H-1B-M2)	
34. Describe the arrival of Africans in the European colonies in the seventeenth century and the increase in the importation of slaves in the eighteenth century (H-1B-M3)	
35. Explain the societal impact of the immersion of Africans in the Americas (H-1B-M3)	
36. Identify instances of both cooperation and conflict between Indians and European settlers (H-1B-M3)	92: A Look at Lifestyles
37. Describe and compare the various religious groups in colonial America and the role of religion in colonial communities (H-1B-M4)	
38. Describe the political, social, and economic organization and structure of the thirteen British colonies that became the United States (H-1B-M5)	

39. Describe reflections of European culture, politics, and institutions in American life (H-1B-M5)	
40. Explain why some colonists felt loyal to England due to their cultural, political, and economic ties to their homeland (H-1B-M5)	
World History	
41. Describe the origins, characteristics, and expansion of ancient American empires (e.g., Inca, Maya) and complex societies in the Americas (e.g., Aztec) (H-1C-M13)	

Grade 5 Grade Level Expectations correlated to Project Learning Tree PreK-8 Guide Mathematics

Grade Level Expectation	PLT activity
Number and Number Relations	
1. Differentiate between the terms <i>factor</i> and <i>multiple</i> , and <i>prime</i> and <i>composite</i> (N-1-M)	
2. Recognize, explain, and compute equivalent fractions for common fractions (N-1-M) (N-3-M)	16: Pass the Plants, Please
3. Add and subtract fractions with common denominators and use mental math to determine whether the answer is reasonable (N-2-M)	16: Pass the Plants, Please
4. Compare positive fractions using number sense, symbols (i.e., $<$, $=$, $>$), and number lines (N-2-M)	28: Air Plants
5. Read, explain, and write a numerical representation for positive improper fractions, mixed numbers, and decimals from a pictorial representation and vice versa (N-3-M)	28: Air Plants 37: Reduce, Reuse, Recycle
6. Select and discuss the correct operation for a given problem involving positive fractions using appropriate language such as <i>sum</i> , <i>difference</i> , <i>numerator</i> , and <i>denominator</i> (N-4-M) (N-5-M)	12: Invasive Species 16: Pass the Plants, Please
7. Select, sequence, and use appropriate operations to solve multi-step word problems with whole numbers (N-5-M) (N-4-M)	12: Invasive Species 28: Air Plants
8. Use the whole number system (e.g., computational fluency, place value, etc.) to solve problems in real-life and other content areas (N-5-M)	12: Invasive Species 16: Pass the Plants, Please 28: Air Plants 37: Reduce, Reuse, Recycle 38: Every Drop Counts 41: How Plants Grow 47: Are Vacant Lots Vacant? 48: Forest, Field and Stream 66: Germinating Giants 67: How Big is Your Tree? 53: On the Move 73: Waste Watchers 85: In the Driver's Seat
9. Use mental math and estimation strategies to predict the results of computations (i.e., whole numbers, addition and subtraction of fractions) and to test the reasonableness of solutions (N-6-M) (N-2-M)	12: Invasive Species 16: Pass the Plants, Please 28: Air Plants 37: Reduce, Reuse, Recycle 38: Every Drop Counts 67: How Big is Your Tree?

	73: Waste Watchers 85: In the Driver's Seat
10. Determine when an estimate is sufficient and when an exact answer is needed in real-life problems using whole numbers (N-6-M) (N-5-M)	12: Invasive Species 28: Air Plants 37: Reduce, Reuse, Recycle 38: Every Drop Counts 41: How Plants Grow 47: Are Vacant Lots Vacant? 48: Forest, Field and Stream 67: How Big is Your Tree? 70: Soil Stories 73: Waste Watchers 85: In the Driver's Seat
11. Explain concepts of ratios and equivalent ratios using models and pictures in real-life problems (e.g., understand that $\frac{2}{3}$ means 2 divided by 3) (N-8-M) (N-5-M)	12: Invasive Species 27: Every Tree for Itself 28: Air Plants 37: Reduce, Reuse, Recycle 38: Every Drop Counts 66: Germinating Giants 67: How Big is Your Tree? 69: Forest for the Trees 73: Waste Watchers 77: Trees in Trouble 85: In the Driver's Seat
Algebra	
12. Find unknown quantities in number sentences by using mental math, backward reasoning, inverse operations (i.e., unwrapping), and manipulatives (e.g., tiles, balance scales) (A-2-M) (A-3-M)	
13. Write a number sentence from a given physical model of an equation (e.g., balance scale) (A-2-M) (A-1-M)	
14. Find solutions to one-step inequalities and identify positive solutions on a number line (A-2-M) (A-3-M)	
Measurement	
15. Model, measure, and use the names of all common units in the U.S. and metric systems (M-1-M)	16: Pass the Plants, Please 21: Adopt a Tree 41: How Plants Grow 47: Are Vacant Lots Vacant? 48: Forest, Field and Stream
16. Apply the concepts of elapsed time in real-life situations and calculate equivalent times across time zones in real-life problems (M-1-M) (M-6-M)	
17. Distinguish among the processes of counting, calculating, and measuring and determine which is the most appropriate strategy for a given situation (M-2-M)	37: Reduce, Reuse, Recycle 38: Every Drop Counts 41: How Plants Grow 47: Are Vacant Lots Vacant? 73: Waste Watchers 77: Trees in Trouble
18. Estimate time, temperature, weight/mass, and length in familiar situations and explain the reasonableness of answers (M-2-M)	21: Adopt a Tree 37: Reduce, Reuse, Recycle 38: Every Drop Counts 41: How Plants Grow 47: Are Vacant Lots Vacant? 48: Forest, Field and Stream 66: Germinating Giants 73: Waste Watchers 77: Trees in Trouble
19. Compare the relative sizes of common units for time, temperature, weight, mass, and length in real-life situations (M-2-M) (M-4-M)	37: Reduce, Reuse, Recycle 38: Every Drop Counts

	41: How Plants Grow 66: Germinating Giants 73: Waste Watchers 77: Trees in Trouble
20. Identify appropriate tools and units with which to measure time, mass, weight, temperature, and length (M-3-M)	21: Adopt a Tree 37: Reduce, Reuse, Recycle 41: How Plants Grow 47: Are Vacant Lots Vacant? 48: Forest, Field and Stream 77: Trees in Trouble
21. Measure angles to the nearest degree (M-3-M)	
22. Compare and estimate measurements between the U.S. and metric systems in terms of common reference points (e.g., l vs. qt., m vs. yd.) (M-4-M)	
23. Convert between units of measurement for length, weight, and time, in U.S. and metric, within the same system (M-5-M)	
Geometry	
24. Use mathematical terms to classify and describe the properties of 2-dimensional shapes, including circles, triangles, and polygons (G-2-M)	
25. Identify and use appropriate terminology for transformations (e.g., <i>translation</i> as <i>slide</i> , <i>reflection</i> as <i>flip</i> , and <i>rotation</i> as <i>turn</i>) (G-3-M)	
26. Identify shapes that have rotational symmetry (G-3-M)	
27. Identify and plot points on a coordinate grid in the first quadrant (G-6-M)	
Data Analysis, Probability, and Discrete Math	
28. Use various types of charts and graphs, including double bar graphs, to organize, display, and interpret data and discuss patterns verbally and in writing (D-1-M) (D-2-M) (P-3-M) (A-4-M)	16: Pass the Plants, Please 22: Trees as Habitats 25: Birds and Worms 47: Are Vacant Lots Vacant? 48: Forest, Field and Stream 80: Nothing Succeeds Like Succession
29. Compare and contrast different scales and labels for bar and line graphs (D-1-M)	
30. Organize and display data using spreadsheets, with technology (D-1-M)	16: Pass the Plants, Please 21: Adopt a Tree 38: Every Drop Counts 66: Germinating Giants 81: Living With Fire 85: In the Driver's Seat
31. Compare and contrast survey data from two groups relative to the same question (D-2-M)	22: Trees as Habitats 25: Birds and Worms 41: How Plants Grow 47: Are Vacant Lots Vacant? 48: Forest, Field and Stream 85: In the Driver's Seat
32. Represent probabilities as common fractions and recognize that probabilities fall between 0 and 1, inclusive (D-5-M)	
Patterns, Relations, and Functions	
33. Fill in missing elements in sequences of designs, number patterns, positioned figures, and quantities of objects (P-1-M)	

Grade 5 Grade Level Expectations correlated to Project Learning Tree
PreK-8 Guide
English 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., base words, roots, affixes) , determining word origins (etymology) using electronic and print dictionaries, thesauruses, glossaries (ELA-1-M1)	
2. Identify common abbreviations, symbols, acronyms, and multiple-meaning words (ELA-1-M1)	
3. Identify the meanings of idioms and analogies (ELA-1-M1)	
4. Develop specific vocabulary (e.g., for reading scientific, geographical, historical, and mathematical texts, as well as news and current events) for various purposes (ELA-1-M1)	12: Invasive Species 13: We All Need Trees 16: Pass the Plants, Please 31: Plant a Tree 52: A Look at Aluminum 80: Nothing Succeeds Like Succession 88: Life on the Edge
5. 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 8: Forest of S.T. Shrew 18: Tale of the Sun 36: Pollution Search 89: Trees for Many Reasons 92: A Look at Lifestyles
6. Identify and explain literary devices in grade-appropriate texts, including: how word choice and images appeal to the senses and suggest mood, tone, and style, foreshadowing , flashback (ELA-1-M2)	8: Forest of S. T. Shrew 36: Pollution Search 89: Trees for Many Reasons
7. Answer literal and inferential questions in oral and written responses about ideas and information in grade-appropriate texts, including: fiction, nonfiction, poetry, songs (ELA-1-M3)	4: Sounds Around 8: Forest of S. T. Shrew 13: We All Need Trees 17: People of the Forest 18: Tale of the Sun 36: Pollution Search 39: Waste Watchers 49: Tropical Treehouse 89: Trees for Many Reasons 90: Native Ways 92: A Look at Lifestyles 93: Paper Civilizations
8. Identify the connections between ideas and information in a variety of texts (e.g., cartoons, poetry, fiction, instructional manuals) and real-life situations and other texts (ELA-1-M4)	4: Sounds Around 8: Forest of S. T. Shrew 13: We All Need Trees 17: People of the Forest 18: Tale of the Sun 36: Pollution Search 39: Waste Watchers 49: Tropical Treehouse 89: Trees for Many Reasons 90: Native Ways 92: A Look at Lifestyles

	93: Paper Civilizations
Standard 6:	
9. Identify cultural characteristics, including customs, traditions, and viewpoints, found in national, world, and multicultural literature in oral and written responses (ELA-6-M1)	4: Sounds Around 8: Forest of S. T. Shrew 18: Tale of the Sun 78: Signs of Fall 89: Trees for Many Reasons 90: Native Ways 92: A Look at Lifestyles
10. Compare and contrast elements (e.g., plot, setting, characters, theme) in a variety of genres in oral and written responses (ELA-6-M2)	4: Sounds Around 8: Forest of S. T. Shrew 18: Tale of the Sun 78: Signs of Fall 89: Trees for Many Reasons 90: Native Ways 92: A Look at Lifestyles
11. Use knowledge of the distinctive characteristics to classify and interpret elements of various genres, including: fiction (e.g., folktales, fairy tales, fables, legends, short stories, novels), nonfiction (e.g., biography, autobiography, informational text), poetry (e.g., lyric, narrative) and drama (e.g., one-act play or skits) (ELA-6-M3)	4: Sounds Around 8: Forest of S. T. Shrew 18: Tale of the Sun 78: Signs of Fall 89: Trees for Many Reasons 90: Native Ways 92: A Look at Lifestyles
Standard 7:	
12. 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 and implied main ideas and supporting details for each, comparing and contrasting literary elements and ideas, making simple inferences and drawing conclusions, predicting the outcome of a story or situation with reasonable justification and identifying literary devices (ELA-7-M1)	4: Sounds Around 8: Forest of S. T. Shrew 11: Can It Be Real? 12: Invasive Species 13: We All Need Trees 16: Pass the Plants, Please 17: People of the Forest 18: Tale of the Sun 31: Plant a Tree 36: Pollution Search 39: Waste Watchers 49: Tropical Treehouse 52: A Look at Aluminum 78: Signs of Fall 80: Nothing Succeeds Like Succession 88: Life on the Edge 89: Trees for Many Reasons 90: Native Ways 92: A Look at Lifestyles 93: Paper Civilizations
13. Examine and explain the relationship between life experiences and texts to generate solutions to problems (ELA-7-M2)	4: Sounds Around 8: Forest of S. T. Shrew 11: Can It Be Real? 12: Invasive Species 13: We All Need Trees 16: Pass the Plants, Please 17: People of the Forest 18: Tale of the Sun 31: Plant a Tree 36: Pollution Search 39: Waste Watchers 49: Tropical Treehouse 52: A Look at Aluminum

	<p>78: Signs of Fall 80: Nothing Succeeds Like Succession 88: Life on the Edge 89: Trees for Many Reasons 90: Native Ways 92: A Look at Lifestyles 93: Paper Civilizations</p>
<p>14. Use technical information and other available resources (e.g., software programs, manuals) to solve problems (ELA-7-M2)</p>	<p>12: Invasive Species 13: We All Need Trees 16: Pass the Plants, Please 17: People of the Forest 31: Plant a Tree 36: Pollution Search 39: Waste Watchers 49: Tropical Treehouse 52: A Look at Aluminum 88: Life on the Edge 92: A Look at Lifestyles 93: Paper Civilizations</p>
<p>15. Explain an author's purpose for writing (e.g., to explain, to entertain, to persuade, to inform, to express personal attitudes or beliefs) (ELA-7-M3)</p>	<p>4: Sounds Around 18: Tale of the Sun 36: Pollution Search 78: Signs of Fall 89: Trees for Many Reasons 90: Native Ways 92: A Look at Lifestyles</p>
<p>16. Explain how the author's viewpoint (perspective, bias) is reflected in the text (ELA-7-M3)</p>	<p>4: Sounds Around 18: Tale of the Sun 36: Pollution Search 78: Signs of Fall 89: Trees for Many Reasons 90: Native Ways 92: A Look at Lifestyles</p>
<p>17. Analyze grade-appropriate print and nonprint texts using various reasoning skills, including: identifying cause-effect relationships, raising questions, thinking inductively and deductively, generating a theory or hypothesis, skimming/scanning and distinguishing facts from opinions and probability (ELA-7-M4)</p>	<p>4: Sounds Around 8: Forest of S. T. Shrew 11: Can It Be Real? 12: Invasive Species 13: We All Need Trees 17: People of the Forest 18: Tale of the Sun 36: Pollution Search 49: Tropical Treehouse 52: A Look at Aluminum 78: Signs of Fall 88: Life on the Edge 89: Trees for Many Reasons 90: Native Ways 92: A Look at Lifestyles</p>
Writing	
Standard 2:	
<p>18. Write multiparagraph compositions on student- or teacher-selected topics organized with the following: an established central idea, important ideas or events stated in sequential or chronological order, elaboration (e.g., fact, examples, specific details), transitional words and phrases that unify points and ideas, and an overall structure including an introduction, a body/middle, and a concluding paragraph</p>	<p>12: Invasive Species</p>

that summarizes important ideas (ELA-2-M1)	
19. Organize individual paragraphs with topic sentences, relevant elaboration, and concluding sentences (ELA-2-M1)	12: Invasive Species 21: Adopt a Tree
20. 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) and variety in sentence structure (ELA-2-M2)	7: Habitat Pen Pals 12: Invasive Species 21: Adopt a Tree 96: Improve Your Place
21. Develop grade-appropriate compositions applying writing processes such as the following: selecting topic and form, prewriting (e.g., brainstorming, researching, raising questions, completing graphic organizers), drafting, conferencing (e.g., peer and teacher), revising based on feedback and use of various tools (e.g., LEAP21 Writer’s Checklist, rubrics), proofreading/editing, and publishing using technology (ELA-2-M3)	7: Habitat Pen Pals 12: Invasive Species 96: Improve Your Place
22. Develop grade-appropriate paragraphs and multiparagraph compositions using the various modes (i.e., description, narration, exposition, and persuasion), emphasizing narration and exposition (ELA-2-M4)	7: Habitat Pen Pals 12: Invasive Species 21: Adopt a Tree 96: Improve Your Place
23. Use the various modes to write compositions, including: how-to essays and stories that incorporate dialogue, characters, plot, setting, and sensory details (ELA-2-M4)	7: Habitat Pen Pals
24. Develop writing/compositions using a variety of literary and sound devices, including similes, metaphors, and onomatopoeia (ELA-2-M5)	5: Poet Tree
25. Write for various purposes, including: formal and informal letters that state a purpose, make requests, or give compliments, evaluations of media, such as films, performances, or field trips and explanations of stories and poems using retellings, examples, and text-based evidence (ELA-2-M6)	7: Habitat Pen Pals 17: People of the Forest 18: Tale of the Sun 26: Dynamic Duos 96: Improve Your Place
Writing/Proofreading	
Standard 3:	
26. Use standard English punctuation, including: parentheses and commas in direct quotations, commas to set off appositives and introductory phrases, and use quotation marks around dialogue (ELA-3-M2)	
27. Capitalize the first and other important words in titles and proper nouns (ELA-3-M2)	
28. Write paragraphs and compositions following standard English structure and usage, including: varied sentence structures (e.g., simple, compound) and types (i.e., declarative, interrogative, imperative, exclamatory), agreement of subjects and verbs in complex sentences, sentences without double negatives and correct sentence fragments and run-on sentences (ELA-3-M3)	
29. Apply knowledge of parts of speech in writing, including: using same verb tense throughout when appropriate and selecting and using specific nouns, pronouns, and verbs for clarity (ELA-3-M4)	
30. Spell high-frequency, commonly confused, frequently misspelled words correctly (ELA-3-M5)	
31. Incorporate accurate spelling and use a variety of resources (e.g., glossaries, dictionaries, thesauruses, spell check) to find correct	

spellings (ELA-3-M5)	
Speaking and Listening	
Standard 4:	
32. Adjust diction and enunciation to suit the purpose for speaking (ELA-4-M1)	19: Viewpoints on the Line 40: Then and Now 60: Publicize It! 96: Improve Your Place
33. Use complete sentences and standard English grammar, diction, syntax, and pronunciation when speaking (ELA-4-M1)	19: Viewpoints on the Line 40: Then and Now 60: Publicize It! 96: Improve Your Place
34. Follow procedures (e.g., read, question, write a response, form groups) from detailed oral instructions (ELA-4-M2)	
35. Restate or describe oral directions/procedures for tasks (ELA-4-M2)	16: Pass the Plants Please
36. Adjust volume and inflection to suit the audience and purpose of presentations (ELA-4-M3)	19: Viewpoints on the Line 40: Then and Now 60: Publicize It! 96: Improve Your Place
37. Organize oral presentations with a thesis, an introduction, a body developed with relevant details, and a conclusion (ELA-4-M3)	
38. Demonstrate active listening strategies (e.g., asking focused questions, responding to questions, making visual contact) (ELA-4-M4)	40: Then and Now
39. Deliver formal and informal presentations for a variety of purposes, including: book reports, personal experiences and explanations of projects (ELA-4-M4)	
40. Evaluate media for various purposes, including: effectiveness of organization and presentation and usefulness and relevance of information (ELA-4-M5)	
41. Participate in group and panel discussions, including: explaining the effectiveness and dynamics of group process, applying agreed-upon rules for formal and informal discussions and assuming a variety of roles (e.g., facilitator, recorder, leader, listener) (ELA-4-M6)	
Information Resources	
Standard 5:	
42. Locate and select information using a variety of organizational features in 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) and frequently accessed and bookmarked Web 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
43. Locate and integrate information from grade-appropriate resources, including: multiple printed texts (e.g., encyclopedias, atlases, library catalogs, specialized dictionaries, almanacs, technical encyclopedias) and electronic sources (e.g., Web sites, databases, audio and video tapes, films, documentaries) for use in researching a topic (ELA-5-M2)	11: Can It Be Real? 12: Invasive Species 17: People of the Forest 39: Energy Sleuths 40: Then and Now 45: Web of Life 96: Improve Your Place
44. Locate, gather, and select information using data-gathering strategies, including: surveying, interviewing and paraphrasing (ELA-5-M3)	12: Invasive Species 17: People of the Forest 34: Who Works in This Forest? 40: Then and Now 45: Web of Life 90: Native Ways

	96: Improve Your Place
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) and bibliographies (ELA-5-M3)	11: Can It Be Real? 12: Invasive Species 17: People of the Forest 39: Energy Sleuths 40: Then and Now 45: Web of Life 96: Improve Your Place
46. Use word processing and/or other technology to draft, revise, and publish a variety of works, including compositions and reports (ELA-5-M4)	4: Sounds Around 11: Can It Be Real? 12: Invasive Species 17: People of the Forest 21: Adopt a Tree 22: Trees as Habitats 40: Then and Now 45: Web of Life 79: Tree Lifecycle 96: Improve Your Place
47. Give credit for borrowed information following acceptable use policy, including: integrating quotations and citations, using endnotes and creating bibliographies and/or works cited lists (ELA-5-M5)	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
48. Interpret information from a variety of grade-appropriate sources, including timelines, charts, schedules, tables, diagrams, and maps (ELA-5-M6)	12: Invasive Species 17: People of the Forest 40: Then and Now 45: Web of Life 96: Improve Your Place