

PLT Correlations: SCIENCE GRADE 4 (revised 12/09)

Grade 4 : Embedded Inquiry

Learning Expectations	PLT Correlations
<p>GLE 0407.Inq.1 Explore different scientific phenomena by asking questions, making logical predictions, planning investigations, and recording data.</p>	<p>3. Peppermint Beetle (p.23) - Students experience scent-marking and consider its benefit to animals.</p> <p>15. A Few of My Favorite Things (p.75) - Students identify the materials and energy used to make a favorite object. As Enrichments, they trace solid waste in their community, set up a Swap Shop, or use “trash” to create new products.</p> <p>20. Environmental Exchange Box (p.92) - By exchanging boxes with classes in other regions, students compare the other regions to their own.</p> <p>22. Trees as Habitats (p.102) - Students inventory the plants and animals that live in, on, and around trees and discover how plants and animals depend on trees in many ways.</p> <p>23. The Fallen Log (p.105) - Students inventory the living things in and on rotting logs.</p> <p>24. Nature's Recyclers (p.108) - Students devise an experiment to investigate the eating habits of pill bugs or earthworms.</p> <p>27. Every Tree For Itself (p.117) - Students record and compare results of a simulation for rounds conducted according to different scenarios.</p> <p>37. Reduce, Reuse, Recycle (p.159) - Students plan and conduct a service learning project, and in doing so find ways to cut down on the waste they produce and improve how waste is managed in their community.</p> <p>38. Every Drop Counts (p.163) - Students monitor their water use and create an Action Plan to conserve water in their school.</p> <p>39. Energy Sleuths (p.167) - In Part C, students track their energy activities for one day.</p> <p>41. How Plants Grow (p179) - In the Variation, students grow, measure, and compare plants growing with versus without light, water, soil, or space.</p> <p>43. Have Seeds, Will Travel (p.185) - Students observe, collect, and classify seeds according to their likely means of dispersal. In the Enrichment, they modify dried lima beans to allow various types of dispersal.</p> <p>44. Water Wonders (p.188) - Students create “stream tables” to explore runoff under different conditions. As a Enrichment, they create terrariums in which they can observe the functioning of the water cycle.</p> <p>46. Schoolyard Safari (p.197) - Students go on a safari to explore a nearby habitat – the school yard – while looking for signs of animals living there.</p>

	<p>47. Are Vacant Lots Vacant? (p.200) - Students stake out a “plot” and inventory the plant and animal life within the plot. In the Variation, students use hand lenses to closely observe plants and tiny animals along a 3-foot piece of string or within the area defined by a coat hanger stretched into a circle.</p> <p>48. Field, Forest and Stream (p.203) - Students work in teams to investigate and record observations of both living and non-living components of three different study sites. In the Variation, students work in pairs to place “most” and “least” markers within a designated study site to locate extremes of light, moisture, temperature, wind, plant life, and animal life.</p> <p>52. A Look at Aluminum (p.228) - Students plan and participate in a service learning project to encourage aluminum recycling in their community.</p> <p>61. The Closer You Look (p.263) - Students carefully examine tree features and parts.</p> <p>64. Looking at Leaves (p.273) - Students explore leaf attributes such as color, shape, size, and bilateral symmetry through careful observation and various “leaf art” activities.</p> <p>65. Bursting Buds (p.277) - Students observe tree buds throughout the year.</p> <p>66. Germinating Giants (p.279) - Students compare their local trees to the world’s tallest tree, the coast redwood, and to the tree with the largest seeds, the coconut palm.</p> <p>67. How Big Is Your Tree? (p.284) - Students use string or “hand-spans” to measure the distance around a tree trunk or join arms to reach around larger trunks.</p> <p>70. Soil Stories (p.297) - In Part A, students use a “Soil Shake” test to separate the components of soil by their particle size. In Part B, students use a “Percolation Test” to test how well soils in different outdoor locations drain water.</p> <p>74. People, Places, Things (p.318) - As an Enrichment, students map their neighborhood.</p> <p>76. Tree Cookies (p.327) - Students examine a “tree cookie” to estimate its age when it was cut and to interpret the “clues” rings give as to environmental events the tree experienced.</p> <p>78. Signs of Fall (p.299) - In Part A, students observe and record “signs of fall” in a wooded area. In Part B, they use a “paper chromatography” process to separate the pigments in leaves.</p> <p>83. A Peek at Packaging (p.360) - Students examine the pros and cons of different packaging strategies.</p> <p>85. In the Driver’s Seat (p.370) - Students keep a log of their family’s transportation for a week, learn how petroleum is refined.</p> <p>95. Did You Notice? (p.414) - Students study changes in their local environment over short and long periods to identify patterns of change.</p> <p>96. Improve Your Place (p.418) - Students plan and carry out a service learning project that focuses on making positive environmental changes in their community.</p>
<p>GLE 0407.Inq.2 Select and use appropriate tools and simple equipment to conduct an investigation.</p>	

<p>GLE 0407.Inq.3 Organize data into appropriate tables, graphs, drawings, or diagrams.</p> <p>GLE 0407.Inq.4 Identify and interpret simple patterns of evidence to communicate the findings of multiple investigations.</p> <p>GLE 0407.Inq.5 Recognize that people may interpret the same results in different ways.</p> <p>GLE 0407.Inq.6 Compare the results of an investigation with what scientists already accept about this question.</p>		
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Grade 4 : Embedded Technology & Engineering		
Learning Expectations	Checks for Understanding	PLT Correlations
<p>GLE 0407.T/E.1 Describe how tools, technology, and inventions help to answer questions and solve problems.</p> <p>GLE 0407.T/E.2 Recognize that new tools, technology, and inventions are always being developed.</p> <p>GLE 0407.T/E.3 Identify appropriate materials, tools, and machines that can extend or enhance the ability to solve a specified problem.</p> <p>GLE 0407.T/E.4 Recognize the connection between scientific advances, new knowledge, and the availability of new tools and technologies.</p>	<p>0407.T/E.1 Explain how different inventions and technologies impact people and other living organisms.</p> <p>0407.T/E.2 Design a tool or a process that addresses an identified problem caused by human activity.</p> <p>0407.T/E.4 Evaluate an invention that solves a problem and determine ways to improve the design.</p>	<p>83. A Peek at Packaging (p.360) – Students examine the pros and cons of different packaging strategies.</p>

GLE 0407.T/E.5 Apply a creative design strategy to solve a particular problem generated by societal needs and wants.	0407.T/E.3 Determine criteria to evaluate the effectiveness of a solution to a specified problem.	37. Reduce, Reuse, Recycle (p.159) – Students plan and conduct a service learning project, and in doing so find ways to cut down on the waste they produce and improve how waste is managed in their community.
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Grade 4 : Standard 1 - Cells

Learning Expectations	Checks for Understanding	PLT Correlations
GLE 0407.1.1 Recognize that cells are the building blocks of all living things.	<p>0407.1.1 Use illustrations or direct observations to compare and contrast the basic structures of plant and animal cells.</p> <p>0407.1.2 Create a basic model of the cell that illustrates different cell structures and describes their functions.</p>	

Grade 4 : Standard 2 - Interdependence

Learning Expectations	Checks for Understanding	PLT Correlations
GLE 0407.2.1 Analyze the effects of changes in the environment on the stability of an ecosystem.	<p>0407.2.1 Analyze how an increase or decrease in competition or predation affects an ecosystem.</p> <p>0407.2.2 Design a simple experiment to illustrate the effects of competition, predation, and interdependency among living things.</p>	<p>12. Invasive Species (p.59)</p> <p>23. The Fallen Log (p.105)</p> <p>27. Every Tree For Itself (p.117)</p> <p>76. Tree Cookies (p.327)</p> <p>95. Did You Notice? (p.414)</p> <p>96. Improve Your Place (p.418)</p>

Grade 4 : Standard 3 - Flow of Matter and Energy

Learning Expectations	Checks for Understanding	PLT Correlations
<p>GLE 0407.3.1 Demonstrate that plants require light energy to grow and survive.</p>	<p>0407.3.3 Identify how a variety of organisms meet their energy needs.</p>	<p>41. How Plants Grow (p179) 64. Looking at Leaves (p.273) 67. How Big Is Your Tree? (p.284) 76. Tree Cookies (p.327) – Effects of shade</p>
<p>GLE 0407.3.2 Investigate different ways that organisms meet their energy needs.</p>	<p>0407.3.1 Create a food web that illustrates the energy relationships between plants and animals and the key issues or assumptions found in the model.</p> <p>0407.3.2 Classify organisms as carnivores, herbivores, or omnivores.</p>	<p>23. The Fallen Log (p.105) 24. Nature's Recyclers (p.108) 45. Web of Life (p.194) 46. Schoolyard Safari (p.197)</p>

Grade 4 : Standard 4 - Heredity

Learning Expectations	Checks for Understanding	PLT Correlations
<p>GLE 0407.4.1 Recognize the relationship between reproduction and the continuation of a species.</p> <p>GLE 0407.4.2 Differentiate between complete and incomplete metamorphosis.</p>	<p>0407.4.1 Design a simple demonstration that illustrates the relationship between reproduction and survival of a species.</p> <p>0407.4.2 Study the life cycles of a variety of organisms and determine whether these processes illustrate complete or incomplete metamorphosis.</p>	<p>31. Plant a Tree (p.132) 43. Have Seeds, Will Travel (p.185) 66. Germinating Giants (p.279)</p>

Grade 4 : Standard 5 - Biodiversity and Change

Learning Expectations	Checks for Understanding	PLT Correlations
<p>GLE 0407.5.1 Analyze physical and behavioral adaptations that enable organisms to survive in their environment.</p>	<p>0407.5.1 Classify animals according to their physical adaptations for obtaining food, oxygen, and surviving within a particular environment.</p> <p>0407.5.2 Describe how animal behaviors such as migration, defense, means of locomotion, and hibernation enable them to survive in an environment.</p> <p>0407.5.3 Investigate tropisms that plants exhibit in response to changes in their environment.</p>	<p>3. Peppermint Beetle (p.23) 5. Poet-Tree (p.31) 7. Habitat Pen Pals (p.37) 6. Picture This (p.34) 18. Tale of The Sun (p.86) 20. Environmental Exchange Box (p.92) 22. Trees as Habitats (p.102) 47. Are Vacant Lots Vacant? (p.200) 48. Field, Forest and Stream (p.203) 61. The Closer You Look (p.263) 65. Bursting Buds (p.277) 78. Signs of Fall (p.299) 80. Nothing Succeeds Like Succession (p.345)</p>
<p>GLE 0407.5.2 Describe how environmental changes caused the extinction of various plant and animal species.</p>	<p>0407.5.4 Gather fossil information to draw conclusions about organisms that exist today.</p> <p>0407.5.5 Analyze the common causes of extinction and explain how human actions sometimes result in the extinction of a species.</p>	<p>12. Invasive Species (p.59) 89. Trees For Many Reasons (p.387)</p>

Standard 6 Omitted

Grade 4 : Standard 7 – The Earth

Learning Expectations	Checks for Understanding	PLT Correlations
<p>GLE 0407.7.1 Investigate how the Earth's geological features change as a result of erosion (weathering and transportation) and deposition.</p>	<p>0407.7.1 Prepare a demonstration to illustrate how wind and water affect the earth's surface features.</p>	<p>70. Soil Stories (p.297) 95. Did You Notice? (p.414)</p>

	0407.7.2 Design an investigation to demonstrate how erosion and deposition change the earth's surface.	
GLE 0407.7.2 Evaluate how some earth materials can be used to solve human problems and enhance the quality of life.	<p>0407.7.3 List factors that determine the appropriate use of an earth material.</p> <p>0407.7.4 Use data from a variety of informational texts to analyze and evaluate man's impact on non-renewable resources.</p>	<p>13. We All Need Trees (p.65) 14. Renewable Or Not? (p.69) 15. A Few of My Favorite Things (p.75) 37. Reduce, Reuse, Recycle (p.159) 39. Energy Sleuths (p.167) 52. A Look at Aluminum (p.228) 70. Soil Stories (p.297) 74. People, Places, Things (p.318) - As an Enrichment, students map their neighborhood. 75. Tipi Talk (p.320) 82. Resource- Go-Round (p.355) 83. A Peek at Packaging (p.360) 85. In the Driver's Seat (p.370) 90. The Native Way (p.389) 91. In The Good Old Days (p.396) 92. A Look At Lifestyles (p.401) 93. Paper Civilizations (p.407)</p>

Grade 4 : Standard 8 - The Atmosphere		
Learning Expectations	Checks for Understanding	PLT Correlations
GLE 0407.8.1 Recognize the major components of the water cycle.	<p>0407.8.1 Prepare a model that illustrates the basic features of the water cycle.</p> <p>0407.8.3 Use an illustration to predict and draw conclusions about how weather and climate affect the water cycle.</p>	<p>38. Every Drop Counts (p.163) 44. Water Wonders (p.188)</p>
GLE 0407.8.2 Differentiate between weather and climate.	0407.8.2 Use long term weather data to distinguish between weather and climate.	76. Tree Cookies (p.327) – Effects of drought

Grade 4 : Standard 9 - Matter

Learning Expectations	Checks for Understanding	PLT Correlations
<p>GLE 0407.9.1 Collect data to illustrate that the physical properties of matter can be described with tools that measure weight, mass, length, and volume.</p> <p>GLE 0407.9.2 Explore different types of physical changes in matter.</p>	<p>0407.9.1 Use appropriate tools to measure and compare the physical properties of various solids and liquids.</p> <p>0407.9.2 Compare the causes and effects of various physical changes in matter.</p>	

Grade 4 : Standard 10 - Energy

Learning Expectations	Checks for Understanding	PLT Correlations
<p>GLE 0407.10.1 Distinguish among heat, radiant, and chemical forms of energy.</p> <p>GLE 0407.10.2 Investigate how light travels and is influenced by different types of materials and surfaces.</p>	<p>0407.10.1 Design an investigation to demonstrate how different forms of energy release heat or light.</p> <p>0407.10.2 Design an experiment to investigate how different surfaces determine if light is reflected, refracted, or absorbed.</p> <p>0407.10.3 Gather and organize information about a variety of materials to categorize them as translucent, transparent, or opaque.</p>	