

PLT Correlations: SCIENCE GRADE 7

Revised 8/2009

Grade 7 : Embedded Inquiry

Learning Expectations	Project PLT Correlations
<p>GLE 0707.Inq.1 Design and conduct open-ended scientific investigations.</p>	
<p>GLE 0707.Inq.2 Use appropriate tools and techniques to gather, organize, analyze, and interpret data.</p>	<p>3. Peppermint Beetle, p.23 - Students experience scent-marking and consider its benefit to animals.</p> <p>4. Sounds Around, p.26 – Students compare noise levels between a sheltered site and an open site.</p> <p>15. A Few of My Favorite Things, p.75 - Students identify the materials and energy used to make a favorite object.</p> <p>21. Adopt a Tree, p. 97 - In Part B, students use a journal to record observations and answer questions about their adopted tree.</p> <p>27. Every Tree For Itself, p.117 - Students record and compare results of the simulation for rounds conducted according to different scenarios.</p> <p>28. Air Plants, p.120 - Students observe oxygen production in a submerged aquatic plant to infer the roles of light and carbon dioxide in photosynthesis.</p> <p>36. Pollution Search, p.153 - In Part A, students look for and record evidences of pollution in and around the school.</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>42. Sunlight and Shades of Green, p.182 - Students test what happens when they block sunlight from the leaves of a tree or shrub, and then they will interpret their findings. As an Enrichment, they test leaves for the presence of starch.</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>51. Make Your Own Paper, p.224 - As an Enrichment, students investigate how different materials affect the characteristics of the paper created.</p> <p>54. I'd Like To Visit a Place Where ... (p.236) - By working on a service learning project to improve a local park, students learn about the community's system for managing open spaces.</p> <p>61. The Closer You Look, p.263 - Students carefully examine tree features and parts.</p> <p>65. Bursting Buds, p.277 - Students observe tree buds throughout the year.</p> <p>70. Soil Stories, p.297 - In Part B, students use a "Percolation Test" to test how well soils in different outdoor locations drain water.</p> <p>72. Air We Breathe, p.309 - Students use flashlights and coated slides to observe particles in the air.</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>85. In the Driver's Seat, p.370 - Students keep a log of their family's transportation for a week and, as an Enrichment, conduct a survey to determine the average occupancy of vehicles in their community.</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 0707.Inq.3 Synthesize information to determine cause and effect relationships between evidence and explanations.</p> <p>GLE 0707.Inq.4 Recognize possible sources of bias and error, alternative explanations, and questions for further exploration.</p> <p>GLE 0707.Inq.5 Communicate scientific understanding using descriptions, explanations, and models.</p>	

Grade 7 : Embedded Technology & Engineering		
Learning Expectations	Checks for Understanding	Project PLT Correlations
<p>GLE 0707.T/E.1 Explore how technology responds to social, political, and economic needs.</p>	<p>0707.T/E.1 Use appropriate tools to test for strength, hardness, and flexibility of materials.</p>	<p>83. A Peek at Packaging, p.360 (Assessment Opportunity)</p>

<p>GLE 0707.T/E.2 Know that the engineering design process involves an ongoing series of events that incorporate design constraints, model building, testing, evaluating, modifying, and retesting.</p> <p>GLE 0707.T/E.3 Compare the intended benefits with the unintended consequences of a new technology.</p> <p>GLE 0707.T/E.4 Describe and explain adaptive and assistive bioengineered products.</p>	<p>7707.T/E.2 Apply the engineering design process to construct a prototype that meets certain specifications.</p> <p>0707.T/E.3 Explore how the unintended consequences of new technologies can impact society.</p> <p>0707.T/E.4 Research bioengineering technologies that advance health and contribute to improvements in our daily lives.</p> <p>0707.T/E.5 Develop an adaptive design and test its effectiveness.</p>	
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Grade 7 : Standard 1 - Cells

Learning Expectations	Checks for Understanding	Project PLT Correlations
<p>GLE 0707.1.1 Make observations and describe the structure and function of organelles found in plant and animal cells.</p> <p>GLE 0707.1.2 Summarize how the different levels of organization are integrated within living systems.</p>	<p>0707.1.1 Examine and describe plant and animal cells using compound microscopes.</p> <p>0707.1.2 Identify the function of the major plant and animal cellular organelles.</p> <p>0707.1.3 Make a Venn diagram to compare the structures and functions of an animal cell with a city or school.</p> <p>0707.1.4 Build a 3-D model of a cell.</p>	

<p>GLE 0707.1.3 Describe the function of different organ systems and how collectively they enable complex multicellular organisms to survive.</p>	<p>0707.1.5 Construct a poster that illustrates the hierarchy among cells, tissues, organs, organ systems, and organisms.</p> <p>0707.1.6 Describe the function of different organ systems.</p> <p>0707.1.7 Explain how different organ systems interact to enable complex multicellular organisms to survive.</p> <p>0707.1.8 Apply the idea of the division of labor to explain why living things are organized into cells, tissues, organs, and organ systems.</p>	<p>3. Peppermint Beetle, p.23 4. Sounds Around, p.26 21. Adopt a Tree, p. 97 27. Every Tree For Itself, p.117 16. Pass The Plants, Please, p.77 61. The Closer You Look, p.263 63. Tree Factory, p.269 65. Bursting Buds, p.277 76. Tree Cookies, p.327 72. Air We Breathe, p.309</p>
<p>GLE 0707.1.4 Illustrate how cell division occurs in sequential stages to maintain the chromosome number of a species.</p> <p>GLE 0707.1.5 Observe and explain how materials move through simple diffusion.</p>	<p>0707.1.9 Model the movement of chromosomes during plant cell division.</p> <p>0707.1.10 Design a demonstration that illustrates how materials move across a semi-permeable membrane by simple diffusion.</p>	

Grade 7 : Standard 3 - Flow of Matter and Energy		
Learning Expectations	Checks for Understanding	Project PLT Correlations
<p>GLE 0707.3.1 Distinguish between the basic features of photosynthesis and respiration.</p> <p>GLE 0707.3.2 Investigate the exchange of oxygen and carbon dioxide between living things and the environment.</p>	<p>0707.3.1 Associate the fundamental processes of photosynthesis and respiration with appropriate cell structures.</p> <p>0707.3.2 Examine and identify the chloroplasts in a leaf cell.</p> <p>0707.3.3 Identify the materials used by plants to make food.</p>	<p>28. Air Plants, p.120 42. Sunlight and Shades of Green, p.182</p>

	<p>0707.3.4 Create a chart that compares the reactants and products of photosynthesis and respiration.</p> <p>0707.3.5 Model the pathways of water, oxygen, and carbon dioxide through a plant.</p> <p>0707.3.6 Describe the movement of oxygen and carbon dioxide between living things and the environment.</p> <p>0707.3.7 Describe structures that animals use to obtain oxygen.</p>	
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Grade 7 : Standard 4 - Heredity		
Learning Expectations	Checks for Understanding	Project PLT Correlations
<p>GLE 0707.4.1 Compare and contrast the fundamental features of sexual and asexual reproduction.</p>	<p>707.4.1 Classify organisms according to whether they reproduce sexually or asexually.</p>	
<p>GLE 0707.4.2 Demonstrate an understanding of sexual reproduction in flowering plants.</p>	<p>0707.4.2 Label and explain the function of the reproductive parts of a flower.</p> <p>0707.4.3 Describe various methods of plant pollination.</p>	<p>31. Plant a Tree, p.132 43. Have Seeds, Will Travel, p.185 66. Germinating Giants, p.279</p>
<p>GLE 0707.4.3 Explain the relationship among genes, chromosomes, and inherited traits.</p> <p>GLE 0707.4.4 Predict the probable appearance of offspring based on the genetic characteristics of the parents</p>	<p>0707.4.4 Investigate the relationship among DNA, genes, and chromosomes.</p> <p>0707.4.5 Explain the differences between dominant and recessive traits.</p> <p>0707.4.6 Use a Punnett square to predict the genotypes of offspring resulting from a monohybrid cross.</p>	

	0707.4.7 Draw a phenotypically accurate picture of an individual whose traits are modeled by the role of a die.	
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Grade 7 : Standard 7 – The Earth

Learning Expectations	Checks for Understanding	Project PLT Correlations
GLE 0707.7.1 Describe the physical properties of minerals.	0707.7.1 Organize and explain information about the properties of minerals and their uses.	
GLE 0707.7.2 Summarize the basic events that occur during the rock cycle.	<p>0707.7.2 Label a diagram that depicts the major processes of the rock cycle.</p> <p>0707.7.3 Distinguish among sedimentary, igneous, and metamorphic rocks and relate these to a simple diagram of the rock cycle.</p>	44. Water Wonders, p.188
<p>GLE 0707.7.3 Analyze the characteristics of the earth’s layers and the location of the major plates.</p> <p>GLE 0707.7.4 Explain how earthquakes, mountain building, volcanoes, and sea floor spreading are associated with movements of the earth’s major plates.</p>	<p>0707.7.4 Recognize that the earth’s layers have different thickness, states of matter, densities, and chemical makeup.</p> <p>0707.7.5 Analyze the relationship between plate movements and areas of earthquake activity.</p> <p>0707.7.6 Analyze the relationship between plate movements and mountain building.</p> <p>0707.7.7 Analyze the relationship between plate movements, volcanoes, and sea floor spreading.</p>	
GLE 0707.7.5 Differentiate between renewable and nonrenewable resources in terms of their use by man.	0707.7.8 Determine the impact of man’s use of renewable and nonrenewable resources on future supplies.	<p>14. Renewable Or Not?, p.69</p> <p>37. Reduce, Reuse, Recycle, p.159</p> <p>38. Every Drop Counts, p.163</p> <p>39. Energy Sleuths, p.167</p>

		<p>51. Make Your Own Paper, p.224</p> <p>52. A Look at Aluminum, p.228</p> <p>70. Soil Stories, p.297</p> <p>83. A Peek at Packaging, p.360 (Assessment Opportunity)</p> <p>84. The Global Climate, p.363</p> <p>85. In the Driver's Seat, p.370</p> <p>89. Trees For Many Reasons, p.387</p>
<p>GLE 0707.7.6 Evaluate how human activities affect the earth's land, oceans, and atmosphere.</p>	<p>0707.7.9 Evaluate how human activities affect the condition of the earth's land, water, and atmosphere.</p>	<p>4. Sounds Around, p.26</p> <p>15. A Few of My Favorite Things, p.75</p> <p>19. Viewpoints on The Line, p.89</p> <p>33. Forest Consequences, p. 138</p> <p>35. Loving It Too Much, p.147</p> <p>36. Pollution Search, p.153</p> <p>37. Reduce, Reuse, Recycle, p.159</p> <p>40. Then and Now, p.174</p> <p>54. I'd Like To Visit a Place Where ..., p.236</p> <p>56. We Can Work It Out, p.241</p> <p>59. Power Of Print, p.253</p> <p>60. Publicize It!, p.256</p> <p>81. Living With Fire, p.350</p> <p>89. Trees For Many Reasons, p.387</p> <p>96. Improve Your Place, p.418</p>

Grade 7 : Standard 11 - Motion

Learning Expectations	Checks for Understanding	Project PLT Correlations
<p>GLE 0707.11.1 Identify six types of simple machines.</p> <p>GLE 0707.11.2 Apply the equation for work in experiments with simple machines to determine the amount of force needed to do work.</p> <p>GLE 0707.11.3 Distinguish between speed and velocity.</p>	<p>0707.11.1 Compare the six types of simple machines.</p> <p>0707.11.2 Compete an investigation to determine how machines reduce the amount of force needed to do work.</p> <p>0707.11.3 Summarize the difference between the speed and velocity based on the distance and amount of time traveled.</p>	

<p>GLE 0707.11.4 Investigate how Newton’s laws of motion explain an object’s movement.</p> <p>GLE 0707.11.5 Compare and contrast the basic parts of a wave.</p> <p>GLE 0707.11.6 Investigate the types and fundamental properties of waves.</p>	<p>0707.11.4 Recognize how a net force impacts an object’s motion.</p> <p>0707.11.5 Create a graphic organizer to illustrate and describe the basic parts of a wave.</p> <p>0707.11.6 Compare how transverse and longitudinal waves are produced and transmitted.</p>	
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