PLT Correlations to Sixth Grade DCPS Science Standards

December 2008

Note: All PLT Activities are from the PLT *PreK-8 Environmental Education Activity Guide* except where noted. The numbers in the second and third columns refer to PLT activity numbers, found sequentially in the PreK-8 Guide. The Power Standards/Indicators found in the Pacing Guides are bolded.

SCIENTIFIC THINKING AND INQUIRY **Broad Concepts/Standards and Standards/Indicators**	**PLT Activities**	**Instructional Strategies/Integration Opportunities**
6.1. Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations.		
6.1.1. Give examples of different ways scientists investigate natural phenomena, and identify processes all scientists use, such as collection of relevant evidence, the use of reasoning, the development and testing of hypotheses, and the use and construction of theory to make sense of the evidence. **6.1.7. Draw conclusions based on scientific evidence, and indicate whether further information is needed to support a specific conclusion or to discriminate among several possible conclusions.** **6.1.8. Record and organize information in simple tables and graphs, and identify relationships they reveal. Use tables and graphs as examples of evidence for explanations when writing essays or writing about lab work, fieldwork, etc. Read simple tables and graphs produced by others, and describe**	41 How Plants Grow 48 Field, Forest, and Stream 77 Trees in Trouble 84 The Global Climate	(41) Students are asked to develop research questions, plan steps of their experiments, and make predictions of changing variables on plant growth. Incorporate described technology connections of students making observations with digital cameras and developing visual timeline of plant growth with presentation software (see Enrichment). (84) Background provides information on natural changes in climate and findings of government agencies that point to abnormal warming patterns. Activity has students graph and make predictions based on the CO2 data collection by scientists. Part B connects students to two Earth & Sky radio shows that focus on

in words what they show.		UC-Berkeley scientists' investigation of global warming.
6.1.2. Plan and conduct simple investigations based on student-developed questions that pertain to the content under study, and write instructions others can follow in carrying out the investigations. **6.1.4. Recognize and explain that hypotheses are valuable even if they turn out not to be true, but that many investigations are not hypothesis-driven.** **6.1.5. Write a report of an investigation that includes the problem to be solved, the methods employed, the tests conducted, the data collected or evidence examined, and the conclusions drawn.**	41 How Plants Grow	
6.1.3. Identify dependent and independent variables in those investigations that have controls. If no controls are used, explain why.	41 How Plants Grow 77 Trees in Trouble	
6.1.6. Locate information in reference books, back issues of newspapers and magazines, CD-ROMs, and online databases.	10 Charting Diversity 12 Invasive Species 29 Rain Reasons 45 Web of Life 58 There Ought to Be a Law 88 Life on the Edge (Part B)	(12) Students will conduct research on a local invasive species and develop a poster, video, or other presentation. You may choose to obtain books in Reading Connections section of activity for students to use as part of research. (95) Students will work in teams for particular time periods to gather information about the history of their community and create a portion of a timeline mural. Optional: Have students

	91 In the Good Old Days 95 Did You Notice? (Part B)	create timeline using graphics software.
6.1.9. Read a topographic map and a geologic map for evidence provided on the maps.	48 Field, Forest, and Stream	(48) Obtain topographic maps for Lay of the Land student team as recommended to help them locate site and determine body of water site drains into.
6.1.10. Construct and interpret a simple map.	55 Planning the Ideal Community	(55) Students interpret maps provided by teacher and create own maps when creating their ideal community. You may choose to have students create their maps using graphics software as suggested as an alternative to paper and pencil.

SCIENCE AND TECHNOLOGY **Broad Concepts/Standards and Standards/Indicators**	**PLT Activities**	**Instructional Strategies/Integration Opportunities**
6.2. Broad Concept: Although each of the human enterprises of science and technology has a character and history of its own, each is dependent on and reinforces the other.		
6.2.1. Explain that computers have become valuable in science because they speed up and extend people's ability to collect, store, compile, and analyze data; prepare research reports; and share data and ideas with investigators all over the world.	N/A	
6.2.2. Explain that technology is essential to science	12 Invasive Species	(84) Have students interpret CO2 data

for such purposes as measurement, data collection, graphing and storage, computation, communication and assessment of information, and access to outer space and other remote locations.	84 The Global Climate	collected by NOAA scientists at Mauna Loa Observatory (as provided in activity) and understand that this and other modes of technology are essential for understanding and predicting the effects of climate change.

THE SOLAR SYSTEM **Broad Concepts/Standards and Standards/Indicators**	**PLT Activities**	**Instructional Strategies/Integration Opportunities**
6.3. Broad Concept: Astronomy and planetary exploration reveal the structure and scale of the solar system.		
6.3.1. – 6.3.11.	N/A	

HEAT (THERMAL ENERGY) **Broad Concepts/Standards and Standards/Indicators**	**PLT Activities**	**Instructional Strategies/Integration Opportunities**
6.4. Broad Concept: The transfer of energy through radiation and convection currents affects many phenomena on the Earth's surface.		
6.4.1. – 6.4.6.	N/A	

WEATHER AND CLIMATE **Broad Concepts/Standards and Standards/Indicators**	**PLT Activities**	**Instructional Strategies/Integration Opportunities**
6.5. Broad Concept: Weather (in the short run) and climate (in the long run) involve the transfer of energy in and out of the atmosphere.		
6.5.1. – 6.5.6.	N/A	

RESOURCES **Broad Concepts/Standards and Standards/Indicators**	**PLT Activities**	**Instructional Strategies/Integration Opportunities**
6.6. Broad Concept: Sources of materials differ in amounts, distribution, usefulness, and the time required for their formation.		
6.6.1. Explain that fresh water is limited in supply and uneven in distribution; describe why it is essential for life as we know it and also for most human activities, including industrial processes.	N/A	
6.6.2. Recognize that fresh water is a resource that can be depleted or polluted, making it unavailable or unsuitable for humans.	36 Pollution Search (Part A) 38 Every Drop Counts	(36) Take students on patrol of neighborhood to identify sources of pollution to local waterways. Discussion questions focus on how pollution (e.g., polluted water) would affect human health, etc.
6.6.3. Recognize that the Earth's resources for humans, such as fresh water, air, arable soil, and trees, are finite.	14 Renewable or Not? 37 Reduce, Reuse, Recycle	(38) Students monitor their water usage in a day (use Water Use Chart student page provided) and learn how water is wasted. Have students do Part B to develop a

	38 Every Drop Counts 52 A Look at Aluminum 72 Air We Breathe 82 Resource-Go-Round 84 The Global Climate	water conservation action plan. (52) Students learn that aluminum is nonrenewable but recyclable. Project suggestions are provided for service learning projects that encourage recycling in community.
6.6.4. Explain that the atmosphere and the oceans have a limited capacity to absorb wastes and recycle materials naturally.	84 The Global Climate	
6.6.5. Investigate and describe how pollutants can affect weather and the atmosphere.	84 The Global Climate	(84) Integrate information in Background when discussing results from graphing and using provided questions (e.g., How might the change in CO2 affect the global society?). Greenhouse Effect diagram is provided. Earth & Sky Climate Study radio shows are focus of Part B.
6.6.6. Explain that recycling, reuse, and the development of substitutes can reduce the rate of depletion of many minerals.	37 Reduce, Reuse, Recycle 52 A Look at Aluminum 83 A Peek at Packaging	(37) Download the waste generation pie chart in the Background to show students on an overhead or with an LCD projector. For advanced students and to take a more in depth look at waste and recycling, see PLT's *Exploring Environmental Issues: Municipal Solid Waste*.
6.6.7. Describe that most rainwater that falls in Washington, DC, will eventually drain into the	44 Water Wonders	(44) Has been used as a component to teaching standard, as it focuses on water

Chesapeake Bay.		cycle and concepts such as precipitation, run off, etc.
6.6.8. Explain the important role of the water cycle within a watershed.	44 Water Wonders	(44) Interactive game and discussion questions teach standard. Do described Enrichment of building a terrarium to see water cycle in action.

THE ROCK CYCLE **Broad Concepts/Standards and Standards/Indicators**	**PLT Activities**	**Instructional Strategies/Integration Opportunities**
6.7. Broad Concept: Rock materials are continuously recycled in the rock cycle.		
6.7.1. – 6.7.6	N/A	

PLATE TECTONICS **Broad Concepts/Standards and Standards/Indicators**	**PLT Activities**	**Instructional Strategies/Integration Opportunities**
6.8. Broad Concept: Plate tectonics explain important features of the Earth's surface and major geologic events.		
6.8.1. – 6.8.12.	N/A	

EARTH AND LIFE HISTORY **Broad Concepts/Standards and Standards/Indicators**	**PLT Activities**	**Instructional Strategies/Integration Opportunities**
6.9. Broad Concept: Evidence from rocks allows us to understand the evolution of life on Earth.		
6.9.1. Explain how the Earth's surface is built up and broken down by natural processes, including deposition of sediments, rock formation, erosion, and weathering.	44 Water Wonders (Part B)	(44) Students conduct stream table experiment to see effect of water runoff on land, with and without vegetation.
6.9.2. Describe that the history of life on Earth has been disrupted by major catastrophic events, such as major volcanic eruptions or the impact of asteroids.	N/A	
6.9.3. Explain that although weathered rock is the basic component of soil, the composition and texture of soil and its fertility and resistance to erosion are greatly influenced by plant roots and debris, bacteria, fungi, worms, insects, and other organisms.	23 The Fallen Log 24 Nature's Recyclers 44 Water Wonders (Part B)	(24) Discussion questions include focus on how decomposers are important to forest (or other) ecosystem by recycling nutrients back to soil, etc. Integrate listed Reading Connections like Compost Critters that describes how bacteria, mites, millipedes, worms, etc. turn compost into humus.
6.9.4. – 6.9.7.	N/A	