

**Correlation of
Seeds of Science/Roots of Reading®
Integrated Science and Literacy Units**

**with the State of Connecticut
Science Standards
for Grade 6**

Created October 2011



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The program was created by a team at the Lawrence Hall of Science at the University of California, Berkeley.

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CT Science Standards – 6th Grade	2 nd - 3 rd Grade				3 rd - 4 th Grade				4 th - 5 th Grade			
	Soil Habitats	Shoreline Science	Designing Mixtures	Gravity & Magnetism	Light Energy	Weather & Water	Variation and Adaptation	Digestion & Body Systems	Planets & Moons	Aquatic Ecosystems	Models of Matter	Chemical Changes
Properties of Matter — How does the structure of matter affect the properties and uses of materials?												
6.1 — Materials can be classified as pure substances or mixtures, depending on their chemical and physical properties.												
6.1.a. Mixtures are made of combinations of elements and/or compounds, and they can be separated by using a variety of physical means.												
6.1.b Pure substances can be either elements or compounds, and they cannot be broken down by physical means.												
Students should be able to:												
1. Distinguish between mass and density.												
2. Explain that density is a ratio of mass to volume. Use density to identify elements or separate mixtures.												

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3. Demonstrate that different substances float or sink in water depending on their density.												
4. Compare and contrast the properties of a metals, nonmetals and metalloids.												
5. Differentiate between a mixture and an element or compound and identify examples.												• • •
6. Conduct and report on an investigation that uses physical means such as particle size, density, solubility or magnetism to separate substances in a mixture.											• • •	
7. Use the patterns in the Periodic Table to locate metals, metalloids and nonmetals and to predict the												

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general characteristics of an element.												
8. Compare and contrast physical and chemical changes, and use evidence to support or refute a claim that a chemical reaction has occurred.												• • •
Matter and Energy in Ecosystems — How do matter and energy flow through ecosystems?												
6.2 — An ecosystem is composed of all the populations that are living in a certain space and the physical factors with which they interact..												
6.2.a. Populations in ecosystems are affected by biotic factors, such as other populations, and abiotic factors, such as soil and water supply.												
6.2.b. Populations in ecosystems can be categorized as producers, consumers and decomposers of organic matter.												
Students should be able to:												

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1. Explain the interdependence between biotic and abiotic factors within a given ecosystem.	[Hatched Area]						●			● ● ●					
2. Design and conduct a scientific investigation to explore the porosity and permeability of soils and their ability to support different plant life.															
3. Present an oral or written argument to support the claim that “The sun is the source of energy to support life on Earth.”													● ●		
4. Investigate and report on the effects of abiotic factors on a plant’s ability to carry out photosynthesis.															
5. Compare and contrast the energy transfers and															

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matter cycling among producers, consumers and decomposers in varied Connecticut ecosystems.												
6. Create and interpret graphs that illustrate relationships between predator-prey populations over time.										●		
7. Evaluate the impacts of environmental changes caused by nature and by humans.						●				● ● ●		
Energy in the earth’s systems — How do external and internal sources of energy affect the earth’s systems?												
6.3 — Variations in the amount of the sun’s energy hitting the earth’s surface affects daily and seasonal weather patterns.												
6.3.a. Local and regional weather are affected by the amount of solar energy the area receives and proximity to a large body of water.												

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Student should be able to:												
1. Compare the composition and functions of the earth's atmospheric layers.	[Hatched Area]					• • •						
2. Explain how changes in temperature, pressure, moisture and density of air create weather.						• •						
3. Describe differences between climate and weather.						•						

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4. Demonstrate the arrangement and motion of atoms or molecules in solids, liquids and gases.											• • •	
5. Predict the phase change that will result from the absorption or release of heat energy by solids, liquids or gases.						• • •					• • •	
6. Create models or diagrams that demonstrate how solar energy drives different phases of the water cycle.						• • •						
7. Design, conduct and report in writing an investigation to compare the heat absorption and release rates of water and earth materials.												
8. Compare and contrast conditions that cause local sea												

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breezes/land breezes and global wind patterns.												
9. Predict the type of weather that may result given certain cloud types, warm and cold fronts and air pressure.												
10. Explain the causes of temperature differences between coastal and inland areas.												
Science and Technology in Society — How do science and technology affect the quality of our lives?												
6.4— Water moving across and through earth materials carries with it the products of human activities.												
6.4.a. Most precipitation that falls on Connecticut eventually reaches Long Island Sound.												
Students should be able to:												

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1. Discuss and chart the reasons why water is essential for life.	[Hatched Area]									• •		
2. Observe, analyze and record the unique physical and chemical properties of water.	[Hatched Area]										• •	
3. Research the differences in quantities between fresh water (solid and liquid) and salt water covering the earth’s surface and report on the impact to humans.	[Hatched Area]											
4. Investigate and explain in writing how substances, both harmful and beneficial, dissolve in and are carried by surface and ground water.	[Hatched Area]					•						

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5. Use appropriate maps to locate and identify the major watersheds that drain into Long Island Sound and analyze how the topography influences the way water moves in the Long Island Sound watershed.												
6. Research and evaluate in writing the effects of common point and nonpoint water pollutants in Connecticut.												
7. Compare and contrast the general structures, processes and limitations of a septic system to a secondary wastewater treatment plant.												
8. Debate the effectiveness of a law designed to protect water resources.												

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