



CONNECTICUT
Content Standards and Expected Performances
Core Science for Grades 6-8

Life's Structure and Function (A)
From Bacteria to Plants (B)
Animal Diversity (C)
Human Body Systems (D)
Ecology (E)

Earth Materials and Processes (F)
The Changing Surface of Earth (G)
The Water Planet (H)
The Air Around You (I)
Astronomy (J)

The Nature of Matter (K)
Chemistry (L)
Motion, Forces, and Energy (M)
Electricity and Magnetism (N)
Waves, Sound, and Light (O) © 2005

OBJECTIVES	PAGE REFERENCES		
	<i>Life Science Series</i>	<i>Earth Science Series</i>	<i>Physical Science Series</i>
Grade 6			
Core Themes, Content Standards, and Expected Performances			
<p><i>Properties of Matter – How does the structure of matter affect the properties and uses of materials?</i></p> <p>6.1 - Materials can be classified as pure substances or mixtures, depending on their chemical and physical properties.</p> <ul style="list-style-type: none"> ◆ Mixtures are made of combinations of elements and/or compounds, and they can be separated by using a variety of physical means. ◆ Pure substances can be either elements or compounds, and they cannot be broken down by physical means. 	<p>See Glencoe's Earth Science and Physical Science Series © 2005.</p>	<p>(F) 8, 19, 23-24, 36 <i>Launch Lab</i> 35 D 21 QD 23</p>	<p>(K) 25-29 <i>Lab</i> 30-31 <i>Integrate Earth Science</i> 29 <i>Section Review</i> 29 #1 & #5 D 27 ACT 27</p> <p>(L) 64-66 MM 65 IM 65 QD 66</p>

OBJECTIVES	PAGE REFERENCES		
	<i>Life Science Series</i>	<i>Earth Science Series</i>	<i>Physical Science Series</i>
C1. Describe the properties of common elements, such as oxygen, hydrogen, carbon, iron and aluminum.	See Glencoe's Earth Science and Physical Science Series © 2005.	(F) 8, 19, 23 <i>Section Review 12 #5 # 6,</i> 25 #5, #6 D 21 QD 23	(K) 22-23, 105-114 <i>Lab 24, 117</i> <i>Chapter Review 35 #22</i> ACT 20, 101 LD 103 IL 110 (L) <i>Launch Lab 95</i>
C 2. Describe how the properties of simple compounds, such as water and table salt, are different from the properties of the elements of which they are made.	See Glencoe's Earth Science and Physical Science Series © 2005.	(F) 23-24 DI 21 QD 23	(K) 25-26 <i>MiniLab 26</i> TPK 25 CU 29
C 3. Explain how mixtures can be separated by using the properties of the substances from which they are made, such as particle size, density, solubility and boiling point.	See Glencoe's Earth Science and Physical Science Series © 2005.	(F) 23, 53 <i>Integrate Social Studies 23</i> CC 22 (H) 102-103 <i>Figure 14 82</i> <i>MiniLab 107</i> QD 10, 78, 132 DI 102	(K) 28 <i>Science Online 28</i> <i>Section Review 29 #2</i> A 29 R 29 (L) 65 DI 67 VL 65

OBJECTIVES	PAGE REFERENCES		
	<i>Life Science Series</i>	<i>Earth Science Series</i>	<i>Physical Science Series</i>
<p><i>Matter and Energy in Ecosystems</i> – How do matter and energy flow through ecosystems?</p> <p>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.</p> <ul style="list-style-type: none"> ◆ Populations in ecosystems are affected by biotic factors, such as other populations, and abiotic factors, such as soil and water supply. ◆ Populations in ecosystems can be categorized as producers, consumers and decomposers of organic matter. 	(E) 12-17, 20-24 Lab 26-27	(G) 163 <i>Integrate Chemistry</i> 163 (H) 46-47, 49 <i>Integrate Life Science</i> 47 <i>National Geographic Society Visualizing</i> 48 AC 46 SJ 47 CD 107 D 150	(K) 108 A 111 (L) <i>Integrate Life Science</i> 82 <i>National Geographic</i> 80 D 105 CD 50 (M) 133, 142, 167 (N) <i>Science and Society</i> 30
C4. Describe how abiotic factors, such as temperature, water and sunlight, affect the ability of plants to create their own food through photosynthesis.	(E) 20, 36-42, 50 <i>Integrate Chemistry</i> 21	(H) 135-137 <i>Integrate Career</i> 136 AR 136 IL 137 TF 137	(L) D 44
C 5. Explain how populations are affected by predator-prey relationships.	(E) 20-24 VL 23	(G) 175 <i>Section Review</i> 161 #6b D 168 (H) 142 CC 136	See Glencoe's Life Science and Earth Science Series © 2005.

OBJECTIVES	PAGE REFERENCES		
	<i>Life Science Series</i>	<i>Earth Science Series</i>	<i>Physical Science Series</i>
C 6. Describe common food webs in different Connecticut ecosystems.	(E) 50-53 A 51 C 53 LD 51	The following page references are not specific to Connecticut. (H) 52, 135-137 <i>Integrate Career</i> 136 TP 135 AR 136 MA 136	See Glencoe's Life Science and Earth Science Series © 2005.
<i>Energy in the Earth's Systems – How do external and internal sources of energy affect the Earth's systems?</i> 6.3 - Variations in the amount of the sun's energy hitting the Earth's surface affect daily and seasonal weather patterns. ◆ Local and regional weather are affected by the amount of solar energy these areas receive and by their proximity to a large body of water.	See Glencoe's Earth Science and Physical Science Series © 2005.	(I) 21-22, 24-25, 36-37, 67-68 <i>National Geographic Society Visualizing</i> 23 <i>Section Review</i> 25 #2-6 CC 67	(K) <i>Science Online</i> 51 (M) 164 <i>Use the Internet Lab</i> 88-89 SJ 79
C 7. Describe the effect of heating on the movement of molecules in solids, liquids and gases.	See Glencoe's Earth Science and Physical Science Series © 2005.	(F) 11, 40, 46 <i>Integrate Chemistry</i> 43 D 46 (H) 9-10, 74 <i>Science Online</i> 9 (I) 18-19, 38 UA 18 QD 37	(K) 46, 50-51 <i>Lab</i> 53 <i>National Geographic</i> 48 ACT 48 (L) 74 (M) 158-159, 164 <i>Integrate Astronomy</i> 69 IL 163

OBJECTIVES	PAGE REFERENCES		
	<i>Life Science Series</i>	<i>Earth Science Series</i>	<i>Physical Science Series</i>
C 8. Explain how local weather conditions are related to the temperature, pressure and water content of the atmosphere and the proximity to a large body of water.	See Glencoe's Earth Science and Physical Science Series © 2005.	(I) 36-43, 44-47, 67-68 <i>Section Review 43 #4</i> <i>Science Online 45</i> IL 46 CC 67	(K) <i>Science Online 51</i> (M) <i>Use the Internet Lab 88-89</i> AIL 88 SJ 79
C 9. Explain how the uneven heating of the Earth's surface causes winds.	See Glencoe's Earth Science and Physical Science Series © 2005.	(I) 21-22, 24-25, 37 <i>National Geographic Society Visualizing 23</i> <i>Section Review 25 #6</i> TP 21	(M) 164 <i>Standardized Test Practice 181 #9</i>
<i>Science and Technology in Society – How do science and technology affect the quality of our lives?</i> 6.4 - Water moving across and through earth materials carries with it the products of human activities. ◆ Most precipitation that falls on Connecticut eventually reaches Long Island Sound.	(E) 78-79, 135 <i>Integrate Career 79</i> TFYI 79, 135	The following page references are not specific to Connecticut. (I) 24-25, 99 DI 24 AC 24 AS 25, 54	(L) <i>National Geographic 80</i> ACT 80, 88 (M) 167
C 10. Explain the role of septic and sewage systems on the quality of surface and ground water.	(E) 78-79, 107-108 <i>Time: Science and Society 86</i> D 86 VL 108	(H) 79 <i>National Geographic Society Visualizing 77</i> NGS 77 TF 79 VL 79	See Glencoe's Life Science and Earth Science Series © 2005.

OBJECTIVES	PAGE REFERENCES		
	<i>Life Science Series</i>	<i>Earth Science Series</i>	<i>Physical Science Series</i>
C 11. Explain how human activity may impact water resources in Connecticut, such as ponds, rivers and the Long Island Sound ecosystem.	(E) 107-108, 135 A 107 SJ 108 TFYI 135	The following page references are not specific to Connecticut. (H) 143-147 <i>Lab</i> 58-59 <i>Section Review</i> 147 #1, #4, #5 AIL 58 D 146 DI 146 R 147 CU 147 (I) 99	(L) <i>National Geographic</i> 80 ACT 80 (M) 167
Grade 7 Core Themes, Content Standards and Expected Performances			
<i>Energy Transfer and Transformations – What is the role of energy in our world?</i> 7.1 - Energy provides the ability to do work and can exist in many forms. ◆ Work is the process of making objects move through the application of force. ◆ Energy can be stored in many forms and can be transformed into the energy of motion.	See Glencoe’s Earth Science and Physical Science Series © 2005.	(F) 66-67, 68-69, 71, 73-75, 76-81 <i>National Geographic Society Visualizing</i> 72 DI 69 LD 78 IL 79	(L) 42-45, 113 ACT 113 (M) 98-99, 126-137 <i>Science Online</i> 132 <i>MiniLab</i> 133 R 130 IL 127 QD 133

OBJECTIVES	PAGE REFERENCES		
	<i>Life Science Series</i>	<i>Earth Science Series</i>	<i>Physical Science Series</i>
C 12. Explain the relationship among force, distance and work, and use the relationship ($W=F \times D$) to calculate work done in lifting heavy objects.	See Glencoe's Physical Science Series © 2005.	See Glencoe's Physical Science Series © 2005.	(M) 100 <i>MiniLab</i> 101 <i>Applying Math</i> 100 <i>Lab</i> 103 <i>Section Review</i> 102 #6 & #7 QD 99 DI 100 CU 102 A 117
C 13. Explain how simple machines, such as inclined planes, pulleys and levers, are used to create mechanical advantage.	See Glencoe's Physical Science Series © 2005.	See Glencoe's Physical Science Series © 2005.	(M) 104-106, 109-115 <i>Design Your Own Lab</i> 116-117 <i>Chapter Review</i> 121 #22 <i>Standardized Test Practice</i> 123 #19 VL 106, 114 UA 106 CU 108 A 114
C 14. Describe how different types of stored (potential) energy can be used to make objects move.	See Glencoe's Earth Science and Physical Science Series © 2005.	(F) 76-81 <i>Section Review</i> 81 #3 LD 78 MA 78	(L) 113 (M) 128, 132, 143, 161 <i>MiniLab</i> 133 <i>Section Review</i> 137 #1 LD 132 QD 133 (N) 17

OBJECTIVES	PAGE REFERENCES		
	<i>Life Science Series</i>	<i>Earth Science Series</i>	<i>Physical Science Series</i>
<p><i>Structure and Function – How are organisms structured to ensure efficiency and survival?</i></p> <p>7.2 - Many organisms, including humans, have specialized organ systems that interact with each other to maintain dynamic internal balance.</p> <ul style="list-style-type: none"> ◆ All organisms are composed of one or more cells; each cell carries on life-sustaining functions. ◆ Multicellular organisms need specialized structures and systems to perform basic life functions. 	<p>(A) 40-47 <i>Lab 48</i> <i>Communicating Your Data 48</i> IM 44 MM 45 QD 41 VL 43</p> <p>(B) 10-13 FF 10 IM 10</p> <p>(D) 75, 119 <i>Science Online 75</i> SJ 119</p>	<p>(H) 135-138 <i>Integrate Chemistry 138</i> IM 136 TF 137</p> <p>(I) 105-107 <i>Integrate Health 105</i></p>	<p>(M) 133 <i>National Geographic 134</i> CU 137</p> <p>(N) <i>National Geographic 10</i></p> <p>(O) 54-55</p>
<p>C 15. Describe the basic structures of an animal cell, including nucleus, cytoplasm, mitochondria and cell membrane, and how they function to support life.</p>	<p>(A) 76-80, 83-87 <i>National Geographic 81</i> IM 84 LD 78 UA 79</p>	<p>See Glencoe's Life Science Series © 2005.</p>	<p>See Glencoe's Life Science Series © 2005.</p>
<p>C 16. Describe the structures of the human digestive, respiratory and circulatory systems, and explain how they function to bring oxygen and nutrients to the cells and expel waste materials.</p>	<p>(D) 47-53, 64-69, 71-72, 92-100 <i>National Geographic 70</i> <i>Lab 73</i> A 51 FF 95 MM 94 QD 66 TFYI 49, 51, 69</p>	<p>(I) 105 <i>Integrate Health 105</i> TF 105</p>	<p>(K) 61</p>

OBJECTIVES	PAGE REFERENCES		
	<i>Life Science Series</i>	<i>Earth Science Series</i>	<i>Physical Science Series</i>
C 17. Explain how the human musculo-skeletal system supports the body and allows movement.	(D) 8-15, 17-19 <i>National Geographic</i> 16 <i>MiniLab</i> 18 MM 11 QD 9 TFYI 15	See Glencoe's Life Science and Physical Science Series © 2005.	(M) 133 <i>National Geographic</i> 134 ACT 134
<i>Energy in the Earth's Systems – How do external and internal sources of energy affect the Earth's systems?</i> 7.3 - Landforms are the result of the interaction of constructive and destructive forces over time. ◆ Volcanic activity and the folding and faulting of rock layers during the shifting of the Earth's crust affect the formation of mountains, ridges and valleys. ◆ Glaciation, weathering and erosion change the Earth's surface by moving earth materials from place to place.	See Glencoe's Earth Science Series © 2005.	(F) 106-108, 110, 112-114 <i>Science Online</i> 108 <i>National Geographic Society Visualizing</i> 109 <i>Section Review</i> 115 #1, #2 CC 113 TF 113, 114 (G) 64-68, 69-74	See Glencoe's Earth Science Series © 2005.
C 18. Describe how folded and faulted rock layers provide evidence of the gradual up and down motion of the Earth's crust.	See Glencoe's Earth Science Series © 2005.	(F) 106-108, 112-114, 126-129 <i>National Geographic Society Visualizing</i> 109 <i>Integrate Physics</i> 114 <i>Section Review</i> 129 #1-3 CC 113 TF 113, 114 DI 114	See Glencoe's Earth Science Series © 2005.

OBJECTIVES	PAGE REFERENCES		
	<i>Life Science Series</i>	<i>Earth Science Series</i>	<i>Physical Science Series</i>
C 19. Explain how glaciation, weathering and erosion create and shape valleys and floodplains.	See Glencoe's Earth Science Series © 2005.	(G) 64-68, 69-74, 92-97 <i>Lab 75</i> <i>National Geographic Society Visualizing</i> 98-99 CC 73 ATP 90	See Glencoe's Earth Science Series © 2005.
C 20. Explain how the boundaries of tectonic plates can be inferred from the location of earthquakes and volcanoes.	See Glencoe's Earth Science and Physical Science Series © 2005.	(F) 159-160 <i>Use the Internet</i> 116-117 <i>Lab</i> 146-147 DI 146 AS 147 CC 160	Students locate areas of seismic activity: (O) IL 14 CC 28
<i>Science and Technology in Society – How do science and technology affect the quality of our lives?</i> 7.4 - Technology allows us to improve food production and preservation, thus improving our ability to meet the nutritional needs of growing populations. ◆ Various microbes compete with humans for the same sources of food.	See Glencoe's Physical Science Series © 2005.	See Glencoe's Physical Science Series © 2005.	(L) 48-49 <i>MiniLab</i> 50 <i>Section Review</i> 52 #4 <i>Chapter Review</i> 59 #27 R 52 TPK 46 ACT 48 A 50
C 21. Describe how freezing, dehydration, pickling and irradiation prevent food spoilage caused by microbes.	See Glencoe's Physical Science Series © 2005.	See Glencoe's Physical Science Series © 2005.	(L) 48-49 <i>Chapter Review</i> 59 #20 ACT 48

OBJECTIVES	PAGE REFERENCES		
	<i>Life Science Series</i>	<i>Earth Science Series</i>	<i>Physical Science Series</i>
Grade 8 Core Themes, Content Standards and Expected Performances			
<p><i>Forces and Motion – What makes objects move the way they do?</i></p> <p>8.1 - An object's inertia causes it to continue moving the way it is moving unless it is acted upon by a force to change its motion.</p> <ul style="list-style-type: none"> ◆ The motion of an object can be described by its position, direction of motion and speed. ◆ An unbalanced force acting on an object changes its speed and/or direction of motion. ◆ Objects moving in circles must experience force acting toward the center. 	See Glencoe's Earth Science and Physical Science Series © 2005.	(F) 114-115 <i>Lab 105</i> <i>Integrate Physics 114</i> TF 114 (I) <i>Model and Invent 56-57</i> (J) <i>Section Review 54 #6</i>	(M) 8-11, 19, 38, 46-47 <i>Design Your Own Lab 56-57</i> R 13, 24 A 13 ACT 38 CU 41
<p>C 22. Calculate the average speed of a moving object and illustrate the motion of objects in graphs of distance over time.</p>	See Glencoe's Earth Science and Physical Science Series © 2005.	(F) <i>Lab 105</i> (G) <i>Lab 114-115</i> (I) <i>Model and Invent 56-57</i> (J) <i>Section Review 54 #6</i>	(M) 10-12 <i>MiniLab 11</i> <i>Applying Math 10</i> <i>Lab 55</i> <i>Section Review 13 #2</i> <i>Chapter Review 31 #17</i> A 11 ACT 12, 45 CU 13

OBJECTIVES	PAGE REFERENCES		
	<i>Life Science Series</i>	<i>Earth Science Series</i>	<i>Physical Science Series</i>
C 23. Describe the qualitative relationships among force, mass and changes in motion.	See Glencoe's Earth Science and Physical Science Series © 2005.	(F) <i>Integrate Physics</i> 114 (G) <i>Lab</i> 114-115 AC 98 DI 114	(M) 36-38, 42-48 <i>Design Your Own Lab</i> 56-57 QD 38 ACT 38, 45 CU 41 VL 44 R 24
C 24. Describe the forces acting on an object moving in a circular path.	See Glencoe's Earth Science and Physical Science Series © 2005.	(J) 17, 72 <i>Figure 8</i> 17 <i>MiniLab</i> 21 <i>Integrate Physics</i> 72 <i>Section Review</i> 74 #1	(M) 46-47 <i>Standardized Test Practice</i> 63 #19 QD 15 D 46
<i>Heredity and Evolution – What processes are responsible for life's unity and diversity?</i> 8.2 - Reproduction is a characteristic of living systems and it is essential for the continuation of every species. ◆ Heredity is the passage of genetic information from one generation to another. ◆ Some of the characteristics of an organism are inherited and some result from interactions with the environment.	(A) 128-134, 136-142, 158-161 <i>National Geographic</i> 131 <i>Lab</i> 135, 164 <i>Lab: Design Your Own</i> 176-177 IL 129 LD 139 MM 141 QD 141 (B) 134-139	(G) 156-161 <i>Section Review</i> 161 #2, #4, #5, #6 <i>Lab</i> 169 DI 156 CD 158 AS 161	See Glencoe's Life Science and Earth Science Series © 2005.

OBJECTIVES	PAGE REFERENCES		
	<i>Life Science Series</i>	<i>Earth Science Series</i>	<i>Physical Science Series</i>
C 25. Explain the similarities and differences in cell division in somatic and germ cells.	(A) 98-111 <i>Lab</i> 105 AR 109 QD 101 (B) 94-97	See Glencoe's Life Science Series © 2005.	See Glencoe's Life Science Series © 2005.
C 26. Describe the structure and function of the male and female human reproductive systems, including the process of egg and sperm production.	(A) 106-111 <i>National Geographic</i> 110	See Glencoe's Life Science Series © 2005.	See Glencoe's Life Science Series © 2005.
C 27. Describe how genetic information is organized in genes on chromosomes, and explain sex determination in humans.	(A) 114, 128-142 <i>Science Stats</i> 148 CC 107	See Glencoe's Life Science Series © 2005.	See Glencoe's Life Science Series © 2005.
<i>Earth in the Solar System – How does the position of Earth in the solar system affect conditions on our planet?</i> 8.3 - The solar system is composed of planets and other objects that orbit the sun. ◆ Gravity is the force that governs the motions of objects in the solar system. ◆ The motion of the Earth and moon relative to the sun causes daily, monthly and yearly cycles on Earth.	See Glencoe's Earth Science and Physical Science Series © 2005.	(J) 41, 43-45, 46-50 <i>Integrate Life Science</i> 41 <i>Section Review</i> 45 #2-6 <i>Science Online</i> 45, 49 CD 41 QD 44 R 45	(M) 43, 47 <i>Integrate History</i> 43 D 46 (O) 67

OBJECTIVES	PAGE REFERENCES		
	<i>Life Science Series</i>	<i>Earth Science Series</i>	<i>Physical Science Series</i>
C 28. Explain the effect of gravity on the orbital movement of planets in the solar system.	See Glencoe's Earth Science and Physical Science Series © 2005.	(J) 70-72 <i>Section Review 74 #1, #4</i>	(M) 43, 47 D 46 (O) 67
C 29. Explain how the regular motion and relative position of the sun, Earth and moon affect the seasons, phases of the moon and eclipses.	See Glencoe's Earth Science Series © 2005.	(J) 43-45, 46-50 <i>Science Online 43, 49</i> <i>Section Review 45 #4; 54 #1-4</i> AC 43 D 44	See Glencoe's Earth Science Series © 2005.
<i>Science and Technology in Society – How do science and technology affect the quality of our lives?</i> 8.4 - In the design of structures there is a need to consider factors such as function, materials, safety, cost and appearance. ◆ Bridges can be designed in different ways to withstand certain loads and potentially destructive forces.	See Glencoe's Earth Science and Physical Science Series © 2005.	The following references list examples of designs other than bridges. (F) 144-145 <i>Model and Invent 88-89</i> <i>MiniLab 144</i> <i>Section Review 145 #5</i> AS 89 R 145	(K) <i>Design Your Own Lab 62-63</i> AIL 62 (M) 159 <i>Science and Society 176</i> <i>Design Your Own Lab 26-27, 116-117</i> MM 166 ACT 176 AIL 116 (O) <i>Integrate Social Studies 48</i>
C 30. Explain how beam, truss and suspension bridges are designed to withstand the forces that act on them.	This objective can be met during teacher/class discussion.	This objective can be met during teacher/class discussion.	This objective can be met during teacher/class discussion.

Codes Used for TWE Codes

Life Science

A	Activity
AR	Active Reading
C	Challenge
CC	Curriculum Connection
D	Discussion
FF	Fun Facts
IL	Inquiry Lab
IM	Identify Misconceptions
LD	Lab Demonstration
MM	Make a Model
QD	Quick Demo
SJ	Science Journal
TFYI	Teacher FYI
UA	Use an Analogy
VL	Visual Learning

Earth Science

AC	Activity
AIL	Alternative Inquiry Lab
AR	Active Reading
AS	Assessment
ATP	About the Photo
CC	Curriculum Connection
CD	Cultural Diversity
CU	Check for Understanding
D	Discussion
DI	Differentiated Instruction
IL	Inquiry Lab
IM	Identifying Misconceptions
LD	Lab Demonstration
MA	Make a Model
NGS	National Geographic Society Visualizing
QD	Quick Demo
R	Reteach
SJ	Science Journal
TF	Teacher FYI
TP	Tie to Prior Knowledge
UA	Use an Analogy
VL	Visual Learning

Physical Science

A	Assessment
ACT	Activity
AIL	Alternative Inquiry Lab
CC	Curriculum Connection
CD	Cultural Diversity
CU	Check for Understanding
D	Discussion
DI	Differentiated Instruction
IL	Inquiry Lab
IM	Identifying Misconceptions
LD	Lab Demonstration
MM	Make a Model
QD	Quick Demo
R	Reteach
SJ	Science Journal
TPK	Tie to Prior Knowledge
UA	Use an Analogy
VL	Visual Learning