

Correlation to Connecticut Core Science Curriculum Framework

CPO Science Earth Science

Student Text and Investigation Manual

Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
C.08 6	Energy in the Earth's Systems	Variations in the amount of the sun's energy hitting the Earth's surface affect daily and seasonal weather patterns.	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.	111 weather and climate are based on heat transfer 117 how oceans affect weather 122 weather involves transfer of energy 122 large scale movement of air and how it affects weather 123 large movements of air 125 how air movement affects weather 126 how water cycle affects weather 126 movement of air affects weather 126 water cycle related to weather 128 how climate is related to transfer of energy 132 how water cycle relates to weather 133 large scale movement of air causes weather changes 134 movement of air affects weather 135 weather is due to energy transfer 137 water cycle affects weather	45 investigate ocean currents 50 investigate wave speed

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				137	
				137	
				138	
				139	
				141	
				141	
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				142	
				143	
				158	
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				178	
				179	

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Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
C.09 6	Energy in the Earth's Systems	Variations in the amount of the sun's energy hitting the Earth's surface affect daily and seasonal weather patterns.	Explain how the uneven heating of the Earth's surface causes winds.	117 differential heating of oceans 122 differential heating of Earth causes circulation 122 large scale movement of air and how it affects weather 123 large movements of air 124 how differential heating of Earth causes air movements 125 differential heating of Earth results in circulation of air 125 how air movement affects weather 126 movement of air affects weather 133 large scale movement of air causes weather changes 134 movement of air affects weather 135 differential heating of Earth leads to distribution of heat 137 movement of air affects weather 141 movement of air affects climate	48 differential heating causes circulation of currents

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Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
				158 movements of air affect weather patterns	

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Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
C.10 6	Science and Technology in Society	Water moving across and through earth materials carries with it the products of human activities.	Explain the role of septic and sewage systems on the quality of surface and ground water.	46 importance of water to society 46 how groundwater figures into water cycle 47 importance of water to society 82 groundwater 83 water is important for life 87 groundwater 88 importance of water to people 88 groundwater 98 nitrogen and oxygen and other gases as components of atmosphere 340 explain relationship between hydrosphere, climate, and human activity 364 origins and effects of water pollution 365 relationship between hydrosphere and human activity 365 water is important to people 366 importance of water to society	

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Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
				366 relationship between hydrosphere and human activity	
				367 importance of water analysis	
				367 relationship between humans and hydrosphere	
				368 importance of water to society	
				388 students know importance of water to society	
				388 origins and effects of water pollution	

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Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
C.11 6	Science and Technology in Society	Water moving across and through earth materials carries with it the products of human activities.	Explain how human activity may impact water resources in Connecticut, such as ponds, rivers and the Long Island Sound ecosystem.	108 how people affect Earth's atmosphere 322 how humans activities affect resources 341 how humans affect soil resources 349 make inferences and draw conclusions about effect of humans activity on Earth's renewable resources 350 how humans activities affect resources 356 how human activity affects soil and water resources 361 human impact on soil 362 draw conclusions about human activity on Earth's resources 365 effects of human activity on water 371 human effects on natural resources 375 effects of human activity on natural resources 376 how human activity affects natural resources 377 how human activity affects resources	104 draw conclusions about effects of human activity on resources 105 draw conclusions about effects of human activity on resources 109 renewable and non-renewable resources 112 make inferences and draw conclusions about effects of human activity on renewable and nonrenewable resources

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Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
				378 conclusions about human activity and effects on Earth's resources	
				379 how human activity affects resources—renewable and nonrenewable	
				387 how human activity affects renewable and nonrenewable resources	
				472 how humans activities affect resources	

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Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
C.18 7	Energy in Earth's Systems	Landforms are the result of the interaction of constructive and destructive forces over time.	Describe how folded and faulted rock layers provide evidence of the gradual up and down motion of the Earth's crust.	16 plate tectonics 118 evolution of land features from gradual changes 209 how rocks and fossils are used to determine age of Earth 210 how rocks are used to tell age of Earth 211 how rocks and fossils are used to date Earth 212 fossils used to determine age of Earth 213 how rocks and fossils are used to date Earth 217 how rocks are used to tell the age of Earth 223 explain how rocks are used to determine age of Earth 235 behavior of Earth's crust 246 theory of plate tectonics 247 plate tectonics explains surface features of Earth 248 plate tectonics 253 plate tectonics 254 plate tectonics 258 predict results of gradual changes—mountain building	74 mountain building 80 plate tectonics 81 plate tectonics 87 theory of plate tectonics 102 predict evolution of land features resulting from erosion 104 predict results of erosion 105 predict results of erosion

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Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
				267	
				plate tectonics	
				268	
				plate tectonics	
				269	
				plate tectonics	
				273	
				plate tectonics	
				307	
				how rocks are used to tell age of Earth	
				318	
				plate tectonics	
				326	
				predict evolution of land features resulting from gradual changes	
				339	
				evolution of land features from gradual changes	
				342	
				predict evolution of land features because of erosion	
				359	
				how rocks can help tell age of Earth	
				359	
				evolution of land features from erosion	
				362	
				evolution of land features by erosion	
				384	
				how human activity affects renewable and nonrenewable resources	

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Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
C.19 7	Energy in Earth's Systems	Landforms are the result of the interaction of constructive and destructive forces over time.	Explain how glaciation, weathering and erosion create and shape valleys and floodplains.	89 watersheds and rivers 92 caves 118 evolution of land features from gradual changes 190 use maps to identify major features 203 use maps to identify features of Earth 258 predict results of gradual changes—mountain building 326 predict evolution of land features resulting from gradual changes 328 running water shapes landscape 334 water running downhill shapes Earth 334 rivers streams erosion and deposition 339 evolution of land features from gradual changes 342 predict evolution of land features because of erosion 343 streams and erosion 343 water running shapes landscape 359 evolution of land features from erosion	74 mountain building 100 rivers and streams 101 rivers and streams 101 running water shapes the landscape 102 predict evolution of land features resulting from erosion 102 water running causes erosion 104 predict results of erosion 105 predict results of erosion

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Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
				362 evolution of land features by erosion	

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Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page		
C.20 7	Energy in Earth's Systems	Landforms are the result of the interaction of constructive and destructive forces over time.	Explain how the boundaries of tectonic plates can be inferred from the location of earthquakes and volcanoes.	253	evolution of land features resulting from gradual changes	70	types of features found along plate boundaries
				253	structures that form at plate boundaries	76	three types of plate boundaries and features associated with them
				254	plate boundaries	78	explanation for placement and properties of volcanoes
				255	plate boundaries		
				256	plate boundaries	78	structures that form at certain plate boundaries
				260	structures that form at plate boundaries	78	types of features at plate boundaries
				264	know that the explanation for the location and properties of volcanoes are due to hot spots and subduction	78	students know the structures that form at plate boundaries
				264	principal structures that form at plate boundaries	89	students know structures that form at the three different plate boundaries
				266	plate boundaries		
				267	plate boundaries	89	know what forms at different types of plate boundaries
				268	plate boundaries		
				280	types of features at plate boundaries	90	explanation of location of volcanoes
				290	structures that form at plate boundaries		
				292	volcanoes occur at hotspots due to subduction		
				293	volcanoes occur at hotspots created because of subduction		

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Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
				293 volcanic islands appear at plate boundaries 294 islands form at plate boundaries 295 two types of volcanoes—violent and with voluminous lava 310 types of plate boundaries 317 types of formations found at different plate boundaries 318 structures formed at types of plate boundaries	
C.28 8	Earth in the Solar System	The solar system is composed of planets and other objects that orbit the sun.	Explain the effect of gravity on the orbital movement of planets in the solar system.	425 role of gravity in solar system 428 gravity causes orbits 428 role of gravity in solar system	

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Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page		
C.29 8	Earth in the Solar System	The solar system is composed of planets and other objects that orbit the sun.	Explain how the regular motion and relative position of the sun, Earth and moon affect the seasons, phases of the moon and eclipses.	114	explain relationship between Earth, Sun, and patterns of seasons	117	relationship between sun and Earth and day and night
				114	general cause of seasons	119	relationship between sun and Earth
				404	Earth's rotation and patterns of day and night	124	relationship between sun and Earth and days
				423	relationship of Earth and moon	127	phases of the moon
				423	relationship of sun and Earth	131	how Sun and Earth distances cause seasons
				424	relationship of Earth and sun	132	Earth and Sun positions causing seasons
				426	giant impact theory	133	relationship between Earth sun and light
				428	tides and Earth and moon's relationship	133	Sun and Earth positions and their relationship with seasons
				430	patterns of day and night and years	137	appearance of moon
				432	phases of the moon	138	appearance of the moon
				433	phases of moon		
				434	lunar eclipses		
				435	solar eclipses		
				435	solar eclipses		
				435	solar eclipses		
				436	seasons and relationship between Earth and sun		
				437	identify seasons		
				445	identify seasons		

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C.INQ.01 6, 7, 8	Scientific Inquiry, Literacy, Numeracy		Identify questions that can be answered through scientific investigation.	4 pose questions and state hypothesis baed on prior experiences 15 making hypothesis based on prior experiences 37 pose questions and state hypothesis 40 design scientific experiments 80 pose questions and state hypothesis baed on prior experiences 100 why is Earth's atmosphere different from other planets 366 what is in your tap water	47 design scientific investigations

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C.INQ.02 6, 7, 8	Scientific Inquiry, Literacy, Numeracy		Read, interpret and examine the credibility of scientific claims in different sources of information.	<p>15 revise explanations based on observational evidence</p> <p>96 snow-making and the water cycle</p> <p>120 when you hit a baseball does it go farther in Denver?</p> <p>397 resources and conservation info</p> <p>407 revising explanations based on evidence</p>	<p>21 construction reasonable explanations based on direct and indirect data</p> <p>34 evaluating your aneroid barometer design</p> <p>51 construct reasonable explanations based on scientific evidence</p> <p>87 construct reasonable explanations supported by evidence</p> <p>88 construct explanations based on evidence</p> <p>97 construct explanations supported by scientific evidence</p> <p>100 construct explanations supported by evidence</p> <p>123 make explanations</p> <p>127 construct explanations based on observations</p> <p>129 make reasonable explanation based on data</p> <p>133 use observations to construct explanations</p>

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C.INQ.03 6, 7, 8	Scientific Inquiry, Literacy, Numeracy		Design and conduct appropriate types of scientific investigations to answer different questions.	<p>4 describe the steps of the scientific method</p> <p>8 describe the steps of the scientific method</p> <p>11 describe the steps of the scientific method</p> <p>14 describe steps of the scientific method</p> <p>18 steps of the scientific method</p> <p>40 design scientific experiments</p> <p>52 steps of scientific method</p> <p>52 conduct scientific inquiry through lab investigations</p> <p>247 steps of scientific theory</p>	<p>6 conducting scientific inquiry by asking questions and formulating hypotheses</p> <p>47 design scientific investigations</p>

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Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
C.INQ.04 6, 7, 8	Scientific Inquiry, Literacy, Numeracy		Identify independent and dependent variables, and those variables that are kept constant, when designing an experiment.	36 recognizing and controlling variables in observations and experiments 37 recognizing and controlling variables 40 recognizing and controlling variables in an experiment 41 recognizing variables 43 recognizing variables 45 recognizing variables 50 recognizing variables 52 recognize variables 394 recognize controlling variables	9 recognizing and controlling variables 114 recognize and control variables

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C.INQ.05 6, 7, 8	Scientific Inquiry, Literacy, Numeracy		Use appropriate tools and techniques to make observations and gather data.	10	microscopes	1	timers
				23	English and metric ruler	10	metric rulers
				23	telescopes	12	rulers
				24	English and metric rulers	14	metric and English rulers
				25	understand length measurements in English and metric units	23	measure volumes of regular and irregular solids
				26	length measurements	59	maps
				26	understand length measurements in metric units	74	length measurements
				26	metric rulers	77	maps
				26	metric rulers	78	maps
				27	units of force	78	maps
				27	units of force	96	thermometers
				28	mass measurements	120	length measurements
				28	measurements of length—appropriate units	121	length measurements in km and m
				28	balances	122	length measurement
				28	measure volume of regular solid objects	124	timers
				29	measure volume with a variety of methods	125	metric and English rulers
				30	kg and g of mass	125	timers
				30	SI and English length measurements	134	telescopes
30	SI and English length measurements	136	telescopes				
30	finding volume of solids	137	telescopes				
30	finding volume of solids	138	telescopes				
32	thermometers and temperature-measuring instruments	150	thermometers				

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Standard #: Grade	Core Theme	Content Standards	Expected Performances	Volume 1 Student Text Page	Volume 2 Investigation Manual Page		
				33	thermometers and temperature-measuring instruments	152	understanding length measurements
				34	temperature measuring instruments	152	metric and English rulers
				35	rulers	153	metric rulers
				35	balances	153	length measurements
				35	thermometers	153	length measurements
				35	timers	154	metric rulers
				51	making volume measurements	155	metric rulers
				51	understand length measurement in English and metric units	156	temperature measuring devices
				60	thermometers	157	thermometers
				68	measure volume with a variety of methods	158	rulers
				77	measure volume with variety of methods	159	measure volume of regular objects
				135	maps	160	measure volume of regular solids
				186	map	161	measure volume of regular objects
				188	maps	162	measure volume of irregular objects
				189	maps	163	balances
				191	maps	164	mass in kg and gm
				193	maps	164	balances
				195	maps	165	mass in kg and gm
				197	maps	165	balances

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				198 maps 200 maps 201 maps	
C.INQ.06 6, 7, 8	Scientific Inquiry, Literacy, Numeracy		Use mathematical operations to analyze and interpret data.	34 analysis of errors in measurement 39 creating and using an algebraic model	2 averages 11 analysis of errors in measurement 12 errors in measurement 13 errors in measurement 34 calculating error between your barometer and a commercial barometer

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C.INQ.07 6, 7, 8	Scientific Inquiry, Literacy, Numeracy		Identify and present relationships between variables in appropriate graphs.	39 graphical models 41 making graphs from data 42 making graphical model from data 43 how to make graphical model from data 44 making graphical model from data 45 constructing a graph 51 constructing graphical models 52 making graphs 74 making and interpreting graphs 394 create and evaluate graph 444 construct and evaluate data from graphical model	9 constructing and evaluating a graphical model 33 constructing a graph from atmospheric pressure data 36 constructing and evaluating graphical models from data 43 construct graphical model from data and evaluate 51 construct and evaluate a quantitative graphical model 67 creating and evaluating graphical model from data 113 construct and evaluate graphical models 116 renewable resources 127 construct graphical model from data and evaluate 136 construct graphical model from data and evaluate 166 lab notebook 167 making graphs

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C.INQ.08 6, 7, 8	Scientific Inquiry, Literacy, Numeracy		Draw conclusions and identify sources of error.	9 use arguments of percent to describe scientific observations and conclusions 34 analysis of errors in measurement	11 analysis of errors 11 analysis of errors in measurement 12 errors in measurement 13 errors in measurement 21 construction reasonable explanations based on direct and indirect data 34 calculating error between your barometer and a commercial barometer 51 construct reasonable explanations based on scientific evidence 87 construct reasonable explanations supported by evidence 88 construct explanations based on evidence 97 construct explanations supported by scientific evidence 100 construct explanations supported by evidence 123 make explanations 127 construct explanations based on observations 129 make reasonable explanation based on data

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					133 use observations to construct explanations

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C.INQ.09 6, 7, 8	Scientific Inquiry, Literacy, Numeracy		Provide explanations to investigated problems or questions.	10	interpreting observations and proposing explanations	20	interpret observations
				15	revise explanations based on observational evidence	21	construct reasonable explanations based on direct and indirect data
				15	cause and effect relationships	34	evaluating your aneroid barometer design
				20	interpreting observation and proposing explanations	34	identifying relationships between air pressure and weather
				22	interpreting observations and posing explanations	36	interpret observations
				50	interpret observations and pose explanations	51	construct reasonable explanations based on scientific evidence
				114	interpret observations and propose explanations	53	interpret observations and propose explanations
				150	proposing explanations	63	interpret observations
				180	proposing explanations	64	interpret observations and pose explanations
				209	interpreting observations	67	interpreting observations
				211	interpreting observations	68	interpreting observations
				213	interpret observations	78	interpret observations
				218	interpreting observations	81	interpret observations
				219	interpreting observations	84	interpret observations
				220	interpreting observations	87	construct reasonable explanations supported by evidence
				372	interpreting observation and proposing explanations	88	construct explanations based on evidence

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				407	revising explanations based on evidence	90	identify cause and effect relationships
				444	proposing explanations	95	interpret observations
						97	construct explanations supported by scientific evidence
						99	interpret observations
						100	construct explanations supported by evidence
						100	identifying cause and effect relationships
						116	interpret observations
						116	proposing explanations
						123	make explanations
						127	construct explanations based on observations
						129	make reasonable explanation based on data
						133	use observations to construct explanations

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C.INQ.10 6, 7, 8	Scientific Inquiry, Literacy, Numeracy		Communicate about science in different formats, using relevant science vocabulary, supporting evidence and clear logic.	15 communication—written 15 formal lab report 19 communicating is key to scientific process 19 writing up scientific results 22 writing up scientific results 22 explaining through discussion 30 written communication 35 communication written 224 explaining—scientific ideas are made clear through discussion 266 communicating 281 communication 298 making an oral presentation of scientific objects 376 explaining 429 communicating written scientific notation 444 create line graph 471 effectively conveying written info is essential to science	20 communication 69 communicating 100 make an oral presentation about results 149 formal lab report 150 communicating results is essential to science 150 lab report 151 lab report 151 writing up results 167 lab reports 167 making graphs 168 formal lab report