Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.1.08.A.1 5 - 8	Science Practices	Understand Scientific Explanations	Demonstrate understanding and use interrelationships among central scientific concepts to revise explanations and to consider alternative explanations.	10 interpreting observations and proposing explanations 15 revise explanations based on observational evidence 20 interpreting observation and proposing explanations 22 interpreting observations and posing explanations 50 interpret observations and pose explanations 114 interpret observations and propose explanations 150 proposing explanations 180 proposing explanations 209 interpreting observations 211 interpreting observations 213 interpret observations 218 interpreting observations 219 interpreting observations 220 interpreting observations 372 interpreting observation and proposing explanations 407 revising explanations based on evidence	20 interpret observations 21 contruction reasonable explanations based on direct and indirect data 34 evaluating the relationship between atmospheric pressure and weather 34 evaluating your aneroid barometer design 36 interpret observations 51 construct reasonable explanations based on scientific evidence 53 interpret observations and propose explanations 63 interpret observations 64 interpret observations and pose explanations 67 interpreting observations 68 interpreting observations 78 interpret observations 81 interpret observations 84 interpret observations 87 construct reasonable explanations supported by evidence 88 construct explanations based on evidence

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
				426	theories of origin of the moon	95	interpret observations
				444	proposing explanations	97	construct explanations supported by scientific evidence
						99	interpret observations
						100	construct explanations supported by evidence
						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

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.1.08.A.2 5 - 8	Science Practices	Understand Scientific Explanations	Use mathematical, physical, and computational tools to build conceptual-based models and to pose theories.	39	graphical models	9	constructing and evaluating a graphical model
				39	understand that scientific knowledge is often in the form of models	9	interpretation of pattern in data from observation
				39	creating and using an algebraic model	29	determining relationship between temperature of the atmosphere and relative humidity
				41	making graphs from data	33	constructing a graph from atmospheric pressure
				42	making graphical model from data	36	constructing and evaluating graphical models from data
				43	how to make graphical model from data	40	interpret patterns in data
				44	making graphical model from data	43	construct graphical model from data and evaluate
				45	constructing a graph	51	construct and evaluate a quantitative graphical model
				51	constructing graphical models	57	interpretation of data
				52	interpret patterns from data	67	creating and evaluating graphical model from data
				52	scientific knowledge is often in the form of models	68	interpretation of patterns from data
				52	making graphs	69	science is often in the form of models
				74	making and interpreting graphs	113	construct and evaluate graphical models
				268	scientific knowledge in form of models		
				378	interpretation of patterns in data		

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
				380	interpretation of data from graphs and charts	116	renewable resources
				394	create and evaluate graph	127	construct graphical model from data and evaluate
				412	interpret patterns in data from tables	136	construct graphical model from data and evaluate
				420	interpretation of data from tables	166	lab notebook
				444	construct and evaluate data from graphical model	167	making graphs
				444	interpretation of patterns from data		
				470	understand science is often in the form of mathematical models		

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.1.08.A.3 5 - 8	Science Practices	Understand Scientific Explanations	Use scientific principles and models to frame and synthesize scientific arguments and pose theories.	15 19 22 276 394 444 444	formal lab report writing up scientific results writing up scientific results analyze trends from data trends in data analyze trends from data create line graph	3 21 22 24 24 36 40 48 51 57 63 63 68 68 72	trends from data contruction reasonable explanations based on direct and indirect data make predictions based on observations make predictions based on observations trends from data make predictions baesd on observed data analyze trends from data make predictions construct reasonable explanations based on scientific evidence make predictions based on data make predictions based on inferences make predictions from data make predictions from observations analyze trends from data predict based on observations

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
					87 construct reasonable explanations supported by evidence 88 construct explanations based on evidence 96 make predictions based on inferences 97 construct explanations supported by scientific evidence 100 construct explanations supported by evidence 102 making predictions 119 making predictions 123 make explanations 127 construct explanations based on observations 129 make reasonable explanation based on data 133 use observations to construct explanations 149 formal lab report 150 lab report 151 writing up results 151 analyze trends from data 151 lab report 167 lab reports

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
					167 making graphs 168 formal lab report

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.1.08.B.1 5 - 8	Science Practices	Generate Scientific Evidence Through Active Investigations	Design investigations and use scientific instrumentation to collect, analyze, and evaluate evidence as part of building and revising models and explanations.	11	keep a lab notebook	1	measuring
				22	collect qualitative data	4	measuring including use of appropriate tools
				24	measurements—including appropriate tools and	10	measuring and choosing tools
				25	measurements—units	11	measuring
				26	measurement	13	measuring
				28	measurement—choosing appropriate units	14	design experiment including selecting equipment
				31	measurement—including correct units	28	collecting wet and dry bulb temperature readings
				34	collect data with precision	47	design scientific investigations
				40	collect data with precision	50	collect quantitative data
				40	design scientific experiments	64	collect observational data
				48	collecting quantitative data	66	making measurements
				48	measurement—including selecting appropriate tools	66	collect quantitative data
				49	measure—select units	73	measurements
				51	making measurements	82	measurements
				205	making measurements	85	collect quantitative data
				345	measuring	96	collect qualitative data
						96	measurement
						116	collect quantitative data
						121	measuring
						124	measurement

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
					125 measurement 129 measurements 152 measuring 153 measuring 154 measuring 158 measuring 159 measuring 160 measuring 161 measuring

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.1.08.B.2 5 - 8	Science Practices	Generate Scientific Evidence Through Active Investigations	Gather, evaluate, and represent evidence using scientific tools, technologies, and computational strategies.	9	making observational data	2	data tables
				11	using data tables	2	averages
				12	collect observational data	3	trends from data
				13	collecting qualitative data	4	data tables
				20	using and making data tables	7	data tables
						8	data tables
				21	collect observational data	9	data tables
				22	collect qualitative data	9	interpretation of pattern in data from observation
				22	collect observational data	12	data tables
				31	using data tables	19	observational data
				35	data tables	22	data tables
				39	understand that scientific knowledge is often in the form of models	24	data tables
						24	trends from data
				42	making and using data tables	26	data tables
				43	creating and using data tables	28	collecting wet and dry bulb temperature readings
				48	using data tables	29	determining relationship between temperature of the atmosphere and relative humidity
				48	collecting quantitative data		
				51	using data tables		
				52	interpret patterns from data	36	using data tables
						38	data tables
				52	scientific knowledge is often in the form of models	39	data tables
						40	interpret patterns in data

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
				63	collect observational evidence	40	analyze trends from data
				85	making observational data	50	collect quantitative data
				110	data tables	51	data tables
				268	scientific knowledge in form of models	57	interpretation of data
				276	analyze trends from data	59	data tables
				378	interpretation of patterns in data	63	observational data
				380	interpretation of data from graphs and charts	66	collect quantitative data
				394	trends in data	66	data tables
				394	using data tables	68	analyze trends from data
				412	interpret patterns in data from tables	68	interpretation of patterns from data
				420	interpretation of data from tables	69	data tables
				444	interpretation of patterns from data	69	science is often in the form of models
				444	analyze trends from data	72	data tables
				470	understand science is often in the form of mathematical models	72	data tables
						74	data tables
						78	data tables
						85	data tables
						85	collect quantitative data
						86	data tables
						90	data tables
						92	data tables
						94	collect observational data

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
					95 collect observational data 95 data tables 96 collect qualitative data 96 collect observational data 100 data tables 100 data tables 108 data tables 116 collect quantitative data 118 data tables 122 data tables 123 data tables 131 data tables 137 data tables 151 analyze trends from data 151 data tables 155 data tables 167 data tables 168 data tables

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.1.08.B.3 5 - 8	Science Practices	Generate Scientific Evidence Through Active Investigations	Use qualitative and quantitative evidence to develop evidence-based arguments.	52	interpret patterns from data	9	interpretation of pattern in data from observation
				52	interpret patterns from data	9	interpretation of pattern in data from observation
				378	interpretation of patterns in data	21	contruction reasonable explanations based on direct and indirect data
				378	interpretation of patterns in data	22	make predictions based on observations
				380	interpretation of data from graphs and charts	24	make predictions based on observations
				380	interpretation of data from graphs and charts	29	determining relationship between temperature of the atmosphere and relative humidity
				412	interpret patterns in data from tables	29	determining relationship between temperature of the atmosphere and relative humidity
				412	interpret patterns in data from tables	36	make predictions baesd on observed data
				420	interpretation of data from tables	40	interpret patterns in data
				420	interpretation of data from tables	40	interpret patterns in data
				444	interpretation of patterns from data	48	make predictions
				444	create line graph	51	construct reasonable explanations based on scientific evidence
				444	interpretation of patterns from data	57	make predictions based on data

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
					57 interpretation of data 57 interpretation of data 63 make predictions based on inferences 63 make predictions from data 68 interpretation of patterns from data 68 make predictions from observations 68 interpretation of patterns from data 72 predict based on observations 87 construct reasonable explanations supported by evidence 88 construct explanations based on evidence 96 make predictions based on inferences 97 construct explanations supported by scientific evidence 100 construct explanations supported by evidence 102 making predictions 119 making predictions

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
					123 make explanations 127 construct explanations based on observations 129 make reasonable explanation based on data 133 use observations to construct explanations

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.1.08.B.4 5 - 8	Science Practices	Generate Scientific Evidence Through Active Investigations	Use quality controls to examine data sets and to examine evidence as a means of generating and reviewing explanations.	15	revise explanations based on observational evidence	3	trends from data
				34	analysis of errors in measurement	6	testing explanations against observations
				52	interpret patterns from data	9	interpretation of pattern in data from observation
				276	analyze trends from data	11	analysis of errors
				378	interpretation of patterns in data	11	analysis of errors in measurement
				380	interpretation of data from graphs and charts	12	errors in measurement
				394	trends in data	13	errors in measurement
				407	revising explanations based on evidence	24	trends from data
				412	interpret patterns in data from tables	29	determining relationship between temperature of the atmosphere and relative humidity
				420	interpretation of data from tables	34	evaluating your aneroid barometer design
				444	create line graph	34	calculating error between your barometer and a commercial barometer
				444	analyze trends from data	40	analyze trends from data
				444	interpretation of patterns from data	40	interpret patterns in data
						57	interpretation of data
						68	analyze trends from data
						68	interpretation of patterns from data
						151	analyze trends from data

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.1.08.C.1 5 - 8	Science Practices	Reflect on Scientific Knowledge	Monitor one's own thinking as understandings of scientific concepts are refined.	9 think about how personal opinion is supported or not supported by data 10 interpreting observations and proposing explanations 20 interpreting observation and proposing explanations 22 interpreting observations and posing explanations 50 interpret observations and pose explanations 114 interpret observations and propose explanations 150 proposing explanations 180 proposing explanations 209 interpreting observations 211 interpreting observations 213 interpret observations 218 interpreting observations 219 interpreting observations 220 interpreting observations 372 interpreting observation and proposing explanations 444 proposing explanations	20 interpret observations 21 contruction reasonable explanations based on direct and indirect data 36 interpret observations 51 construct reasonable explanations based on scientific evidence 53 interpret observations and propose explanations 63 interpret observations 64 interpret observations and pose explanations 67 interpreting observations 68 interpreting observations 78 interpret observations 81 interpret observations 84 interpret observations 87 construct reasonable explanations supported by evidence 88 construct explanations based on evidence 95 interpret observations 97 construct explanations supported by scientific evidence

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
					99 interpret observations 100 construct explanations supported by evidence 116 proposing explanations 116 interpret observations 123 make explanations 127 construct explanations based on observations 129 make reasonable explanation based on data 133 use observations to construct explanations
5.1.08.C.2 5 - 8	Science Practices	Reflect on Scientific Knowledge	Revise predictions or explanations on the basis of discovering new evidence, learning new information, or using models.	15 revise explanations based on observational evidence 407 revising explanations based on evidence 426 theories of origin of the moon	34 evaluating your aneroid barometer design

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.1.08.C.3 5 - 8	Science Practices	Reflect on Scientific Knowledge	Generate new and productive questions to evaluate and refine core explanations.	4	making a hypothesis	5	formulate hypothesis
				4	pose questions and state hypothesis baed on prior experiences	6	make hypothesis
				8	make testable hypothesis	6	conducting scientific inquiry by asking questions and formulating hypotheses
				13	making hypothesis	6	testing explanations against observations
				15	formulate testable hypothesis	50	formulate testable hypothesis
				15	making hypothesis based on prior experiences	64	formulate testable hypothesis
				21	making testable hypothesis	112	formulate testable hypothesis
				37	create testable hypothesis	113	formulate testable hypothesis
				37	pose questions and state hypothesis	129	formulate testable hypothesis
				52	create testable hypothesis		
				52	conduct scientific inquiry through lab investigations		
				80	pose questions and state hypothesis baed on prior experiences		
				373	making testable hypothesis		

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.1.08.D.1 5 - 8	Science Practices	Participate Productively in Science	Engage in multiple forms of discussion in order to process, make sense of, and learn from others' ideas, observations, and experiences.	9	observation—senses help to develop awareness of events or objects and their properties	9	collaboration and peer review
				10	observing—using senses to develop an awareness of events or objects and their properties	20	communication
				13	observing and using observations	53	group discussion skills—clarify
				15	communication—written	69	communicating
				19	writing up scientific results	100	make an oral presentation about results
				19	communicating is key to scientific process	150	communicating results is essential to science
				22	explaining through discussion	151	writing up results
				22	writing up scientific results	167	making graphs
				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		

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
				429 communicating written scientific notation 444 create line graph 471 effectively conveying written info is essential to science	
5.1.08.D.2 5 - 8	Science Practices	Participate Productively in Science	Engage in productive scientific discussion practices during conversations with peers, both face-to-face and vritually, in the context of scientific investigations and model-building.	15 communication—written 19 communicating is key to scientific process 22 explaining through discussion 30 written communication 35 communication written 224 explaining—scientific ideas are made clear through discussion 266 communicating 281 communication 376 explaining 429 communicating written scientific notation 444 create line graph 471 effectively conveying written info is essential to science	20 communication 53 group discussion skills—clarify 69 communicating 150 communicating results is essential to science

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.1.08.D.3 5 - 8	Science Practices	Participate Productively in Science	Demonstrate how to safely use tools, instruments, and supplies.	safety rules, quiz, and contract found at end of investigation manual 10 microscopes 23 English and metric ruler 23 telescopes 24 English and metric rulers 24 measurements—including appropriate tools and 25 measurements—units 26 metric rulers 26 make measurements with precision 26 measurement 28 measurement—choosing appropriate units 28 balances 29 beakers and graduated cylinders 31 measurement—including correct units 32 thermometers and temperature-measuring instruments 33 thermometers and temperature-measuring instruments	1 timers 1 measuring 4 measuring including use of appropriate tools 10 metric rulers 10 measuring and choosing tools 11 measuring 12 rulers 13 measuring 27 safety in swinging thermometers 59 maps 66 making measurements 73 measurements 77 maps 78 maps 78 maps 82 measurements 84 safety devices 96 thermometers 96 measurement 121 measuring 124 measurement 124 timers

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
				34 temperature measuring instruments 35 beakers and graduated cylinders 35 rulers 35 timers 35 thermometers 35 balances 48 measurement—including selecting appropriate tools 49 measure—select units 51 making measurements 60 thermometers 68 beakers and graduated cylinders 135 maps 186 map 188 maps 189 maps 191 maps 193 maps 195 maps 197 maps 198 maps	125 measurement 125 timers 125 metric and English rulers 129 measurements 134 telescopes 136 telescopes 137 telescopes 138 telescopes 143 safety skills 144 safety skills 145 goggles 145 safety quiz 146 goggles and aprons 146 safety quiz 147 safety quiz 147 goggles 148 safety contract 150 thermometers 152 metric and English rulers 152 measuring 153 measuring 153 metric rulers 154 metric rulers

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
				198 sound generating equipment 200 maps 201 maps 205 making measurements 345 measuring	154 measuring 155 metric rulers 156 temperature measuring devices 157 beakers 157 thermometers 158 rulers 158 measuring 159 measuring 160 measuring 161 measuring 162 graduated cylinder 163 balances 164 balances 165 balances

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.2.06.A.1 5-6	Physical Science	Properties of Matter	Determine the volume of common objects using water displacement methods.	28 measure volume of regular solid objects 29 measure volume with a variety of methods 30 finding volume of solids 51 making volume measurements 68 measure volume with a variety of methods 77 measure volume with variety of methods	23 measure volumes of regular and irregular solids 159 measure volume of regular objects 160 measure volume of regular solids 161 measure volume of regular objects 162 measure volume of irregular objects

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.2.06.A.2 5-6	Physical Science	Properties of Matter	Calculate the density of objects or substances after determining volume and mass.	27 27 67 68 68 77 412	mass is different than volume for the same object compare objects and materials using mass, weight, and density compare objects based on density understand that mass and volume are two different measures of the same object compare objects based on mass understand that mass and volume are two different measures compare densities	10 11 14 22 23 23 24 24 72 159 160 161 162 163 164 165	mass measuring mass mass and volume compare objects and materials based on volume volume compare objects based on density volume and mass are different density volume volume volume volume mass mass mass
5.2.06.C.1 5-6	Physical Science	Forms of Energy	Predict the path of reflected or refracted light using reflecting and refracting telescopes as examples.	400	reflection of light		

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.2.06.E.4 5-6	Physical Science	Forces and Motion	Predict if an object will sink or float using evidence and reasoning.		46 will a fluid sink or float
5.2.08.C.1 7-8	Physical Science	Forms of Energy	Structure evidence to explain the relatively high frequency of tornadoes in "Tornado Alley."	116 hurricanes 116 safety in storms 117 hurricanes 122 changes in and causes for weather 130 describe changes in weather (i.e. clouds) 131 reasons for changes in weather 132 changes in weather 133 changes in weather 134 reasons for changes in weather 136 causes of severe weather 137 changes in weather and causes for storms 138 reasons for tornadoes 296 proper safety precautions for severe weather 297 safety precautions for severe weather	30 changes in weather 40 describe changes in weather 42 causes for tornadoes 44 hurricanes

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.2.08.C.2 7-8	Physical Science	Forms of Energy	Model and explain current technologies used to capture solar energy for the purposes of converting it to electrical energy.	380 classify resources as renewable or nonrenewable 381 compare economic and environmental impacts of using different energy sources 382 analyze efficiency of using other resources 382 research and classify resources as renewable or nonrenewable 383 compare economic and environmental impacts of using different energy sources 383 investigate the economic and environmental impacts of using different energy sources 383 classify resources as renewable or nonrenewable 384 analyze efficiency of energy conversions in power from fossil fuels 385 efficiency of energy conversions	114 environmental impact of using different energy sources 115 economic and environmental effects of using different resources 115 classify resources as renewable or nonrenewable

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.3.06.C.1 5-6	Life Science	Interdependence	Explain the impact of meeting human needs and wants on local and global environments.	47 environmental impact of landfills 322 conservation of resources 341 effects of agriculture 350 conservation of resources 362 effects of agriculture 364 wise choices in conservation of water resources 366 environmental impact of chemical reactions 366 wise choices in resources 368 sense of environmental impact and conservation 386 wise choices in conservation of research 386 make wise choices in use of resources with regards to environmental impact 389 make wise choices about conserving resources 390 make wise choices in conservation of resources 472 conservation of resources	107 make wise choices in the use of resources 108 make wise choices in the conservation of resources 109 make wise choices in the conservation of resources

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.3.06.C.2 5-6	Life Science	Interdependence	Predict the impact that altering biotic and abiotic factors has on an ecosystem.	142 what things affect biomes and populations there 145 factors like water that affect populations in ecosystems 341 effects of agriculture 362 effects of agriculture	49 factors regarding populations
5.3.06.C.3 5-6	Life Science	Interdependence	Describe how one population of organisms may affect other plants and/or animals in an ecosystem.	142 what things affect biomes and populations there 145 factors like water that affect populations in ecosystems	49 factors regarding populations
5.3.06.E.1 5-6	Life Science	Evolution and Diversity	Describe the impact on the survival of species during specific times in geologic history when environmental conditions changed.	212 geologic time scale 212 general history of Earth 214 geologic time scale 214 explain general history of life on Earth 216 geologic time scale 218 geologic time scale 219 geologic time scale 220 geologic time scale 221 explain general history of life 235 explain ice ages 337 ice ages	80 general history on Earth

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.06.A.1 5-6	Earth Systems Science	Objects in the Universe	Generate and analyze evidence (through simulations) that the Sun's apparent motion across the sky changes over the course of a year.	114 explain relationship between Earth, Sun, and patterns of seasons 404 Earth's rotation and patterns of day and night 423 relationship of sun and Earth 424 relationship of Earth and sun 430 patterns of day and night and years 435 solar eclipses 435 solar eclipses 436 seasons and relationship between Earth and sun 437 identify seasons 445 identify seasons	117 relationship between sun and Earth and day and night 119 relationship between sun and Earth 124 relationship between sun and Earth and days 131 how Sun and Earth distances cause seasons 132 Earth and Sun positions causing seasons 133 Sun and Earth positions and their relationship with seasons 133 relationship between Earth sun and light

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.06.A.2 5-6	Earth Systems Science	Objects in the Universe	Construct and evaluate models demonstrating the rotation of Earth on its axis and the orbit of Earth around the Sun.	113 compare orbits of planets 114 explain relationship between Earth, Sun, and patterns of seasons 403 orbits of moons and planets 404 Earth's rotation and patterns of day and night 411 compare orbits of planets in solar system 415 orbits of other bodies in the solar system 416 other bodies in solar system 418 compare orbits of planets and other bodies in solar system 423 relationship of sun and Earth 423 orbits of planets and moons 424 relationship of Earth and sun 424 orbits of planets in solar system 425 compare orbits of planets and moon 430 explain orbit of Earth	117 relationship between sun and Earth and day and night 117 orbits of moon and planets 118 orbits of moons and other planets 119 relationship between sun and Earth 119 orbits of planets 124 relationship between sun and Earth and days 131 how Sun and Earth distances cause seasons 132 Earth and Sun positions causing seasons 133 Sun and Earth positions and their relationship with seasons 133 relationship between Earth sun and light 138 orbits of planets

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				430	patterns of day and night and years	
				432	orbit of moon	
				435	solar eclipses	
				435	solar eclipses	
				436	seasons and relationship between Earth and sun	
				437	identify seasons	
				445	identify seasons	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.06.A.3 5-6	Earth Systems Science	Objects in the Universe	Predict what would happen to an orbiting object if gravity were increased, decreased, or taken away.	113 compare orbits of planets 403 orbits of moons and planets 411 compare orbits of planets in solar system 415 orbits of other bodies in the solar system 416 other bodies in solar system 418 compare orbits of planets and other bodies in solar system 423 orbits of planets and moons 424 orbits of planets in solar system 425 role of gravity in solar system 425 compare orbits of planets and moon 428 role of gravity in solar system 430 explain orbit of Earth 432 orbit of moon	117 orbits of moon and planets 118 orbits of moons and other planets 119 orbits of planets 138 orbits of planets

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.06.A.4 5-6	Earth Systems Science	Objects in the Universe	Compare and contrast the major physical characteristics (including size and scale) of solar system objects using evidence in the form of data tables and photographs.	113 compare orbits of planets 399 general structure of solar system 399 compare planets 401 general structure of the solar system 403 orbits of moons and planets 405 general position of Earth 407 classifying planets 409 classifying the planets 409 classify and compare planets 410 compare planets 411 compare orbits of planets in solar system 412 comparing planets 415 orbits of other bodies in the solar system 416 other bodies in solar system 418 compare orbits of planets and other bodies in solar system 418 compare planets 419 compare planets 420 compare planets	117 place of Earth in solar system 117 orbits of moon and planets 118 Earth's position among planets 118 orbits of moons and other planets 119 Earth's position among the planets 119 orbits of planets 121 position of Earth among planets 138 orbits of planets

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				423	orbits of planets and moons	
				424	orbits of planets in solar system	
				424	place of Earth in solar system	
				425	compare orbits of planets and moon	
				427	general structure of solar system	
				430	explain orbit of Earth	
				432	orbit of moon	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.4.06.B.1 5-6	Earth Systems Science	History of Earth	Interpret a representation of a rock layer sequence to establish oldest and youngest layers, geologic events, and changing life forms.	6	fossils	81	fossils
				208	explain origin and formation of fossils		
				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		
				211	how fossils are formed		
				212	fossils used to determine age of Earth		
				213	how rocks and fossils are used to date Earth		
				215	fossil record helps to understand the history of Earth		
				216	fossil record used to understand Earth's history		
				217	how rocks are used to tell the age of Earth		
				223	explain how rocks are used to determine age of Earth		
				237	general Earth systems		
				238	lithosphere		
				307	how rocks are used to tell age of Earth		

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
				310 structure of Earth specifically mantle 315 explain the origin and formation of fossils 315 how fossils are formed 359 how rocks can help tell age of Earth	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.4.06.B.3 5-6	Earth Systems Science	History of Earth	Determine if landforms were created by processes of erosion (e.g., wind, water, and/or ice) based on evidence in pictures, video, and/or maps.	5	explain factors that helped shape Earth—volcanism	74	mountain building
				18	recognize forces that shape Earth—volcanoes	100	rivers and streams
				118	evolution of land features from gradual changes	101	rivers and streams
				258	predict results of gradual changes—mountain building	101	running water shapes the landscape
				283	how volcanoes shape Earth's surface	102	predict evolution of land features resulting from erosion
				284	volcanoes shape Earth's surface	102	water running causes erosion
				292	forces such as erosion and volcanism that shape Earth's surface	104	predict results of erosion
				292	forces such as erosion and volcanism that shape Earth's surface	105	predict results of erosion
				304	forces that shape Earth's surface (i.e. volcanism)		
				308	forces that shape Earth (erosion)		
				312	how volcanoes help shape Earth		
				318	forces like volcanoes and erosion form and shape Earth		

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				326	predict evolution of land features resulting from gradual changes	
				328	running water shapes landscape	
				330	forces that shape Earth's surface—erosion	
				332	forces that shape Earth's surface—erosion	
				334	water running downhill shapes Earth	
				334	rivers streams erosion and deposition	
				339	evolution of land features from gradual changes	
				341	forces that shape Earth such as erosion	
				342	predict evolution of land features because of erosion	
				343	streams and erosion	
				343	water running shapes landscape	
				358	forces that change Earth's surface erosion	
				358	forces that change Earth's surface (erosion)	
				359	evolution of land features from erosion	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				362	evolution of land features by erosion	
				392	volcanism	
				392	volcanism	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.06.B.4 5-6	Earth Systems Science	History of Earth	Describe methods people use to reduce soil erosion.	108 how people affect Earth's atmosphere 322 how humans activities affect resources 341 effects of agriculture 341 how humans affect soil resources 341 how technology shapes landscape (i.e. erosion) 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 362 effects of agriculture 362 how technology shapes Earth's surface 365 effects of human activity on water	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

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				371	human effects on natural resources	
				375	effects of human activity on natural resources	
				376	how human activity affects natural resources	
				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	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
5.4.06.C.1 5-6	Earth Systems Science	Properties of Earth Materials	Predict the types of ecosystems that unknown soil samples could support based on soil properties.	169	explain how rocks are broken down by the action of water	
				170	how rocks are broken down and how surface features are affected by water	
				171	erosion and how surface features change	
				210	how rocks are broken down and surface features change due to action of water	
				252	major Earth systems—lithosphere	
				308	geologic recycling of rock	
				308	rock gets broken down into soil	
				327	how rocks are broken down	
				329	how rocks are broken down by water and ice	
				332	how rocks are broken down and turned back into soil	
				337	rocks broken down into soil	
				340	Earth's surface changes because of water	
				356	soil formation	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				357	how Earth's materials are recycled geologically	
				358	Earth's materials are recycled geologically	
				358	how rocks break down into soil	
				359	rocks are broken down into soil	
				360	how rocks are broken down into soil	
				361	rocks broken down into soil	
				363	how rocks are broken down into soil	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.4.06.C.2 5-6	Earth Systems Science	Properties of Earth Materials	Distinguish physical properties of sedimentary, igneous, or metamorphic rocks and explain how one kind of rock could eventually become a different kind of rock.	169	explain how rocks are broken down by the action of water	90	how rocks are formed
				170	how rocks are broken down and how surface features are affected by water	94	explain how rocks are formed
				171	erosion and how surface features change	100	types of rocks and how they are formed
				199	types of rock and how they are formed		
				210	how rocks are broken down and surface features change due to action of water		
				252	major Earth systems—lithosphere		
				295	how rocks are formed		
				307	types of rocks and how they are made		
				308	rock cycle and types of rock		
				308	geologic recycling of rock		
				308	rock gets broken down into soil		
				310	igneous rock formation		
				311	how igneous rocks are formed		
				312	how rocks are formed		

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				315	how sedimentary rocks are formed	
				316	metamorphic rock formation	
				317	formation of metamorphic rocks	
				318	how rocks are formed	
				327	rock cycle	
				327	how rocks are broken down	
				329	how rocks are broken down by water and ice	
				332	how rocks are broken down and turned back into soil	
				336	types of rock and how they are formed	
				337	rocks broken down into soil	
				340	Earth's surface changes because of water	
				356	soil formation	
				357	how Earth's materials are recycled geologically	
				358	how rocks break down into soil	
				358	rock formation	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				358	Earth's materials are recycled geologically	
				359	rocks are broken down into soil	
				360	how rocks are broken down into soil	
				361	rocks broken down into soil	
				363	how rocks are broken down into soil	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.06.C.3 5-6	Earth Systems Science	Properties of Earth Materials	Deduce the story of the tectonic conditions and erosion forces that created sample rocks or rock formations.	5 explain factors that helped shape Earth—volcanism 18 recognize forces that shape Earth—volcanoes 199 types of rock and how they are formed 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 234 know properties of minerals 257 properties of minerals—rocks 283 how volcanoes shape Earth's surface	90 how rocks are formed 91 properties of minerals and ways to identify minerals 92 properties of minerals and how to identify them 94 explain how rocks are formed 100 types of rocks and how they are formed

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				284	volcanoes shape Earth's surface	
				286	properties of minerals	
				292	forces such as erosion and volcanism that shape Earth's surface	
				292	forces such as erosion and volcanism that shape Earth's surface	
				295	how rocks are formed	
				304	forces that shape Earth's surface (i.e. volcanism)	
				304	properties of minerals	
				305	properties of minerals (i.e. cleavage)	
				306	properties of minerals (i.e. hardness)	
				307	types of rocks and how they are made	
				307	how rocks are used to tell age of Earth	
				308	forces that shape Earth (erosion)	
				308	rock cycle and types of rock	
				310	igneous rock formation	
				311	how igneous rocks are formed	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				312	how rocks are formed	
				312	how volcanoes help shape Earth	
				315	how sedimentary rocks are formed	
				316	metamorphic rock formation	
				316	minerals	
				317	formation of metamorphic rocks	
				318	how rocks are formed	
				318	forces like volcanoes and erosion form and shape Earth	
				320	properties of minerals	
				321	properties of diamond	
				327	rock cycle	
				330	forces that shape Earth's surface—erosion	
				332	forces that shape Earth's surface—erosion	
				336	types of rock and how they are formed	
				341	forces that shape Earth such as erosion	
				358	rock formation	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
				358 forces that change Earth's surface erosion 358 forces that change Earth's surface (erosion) 359 how rocks can help tell age of Earth 392 volcanism 392 volcanism	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.06.D.1 5-6	Earth Systems Science	Tectonics	Apply understanding of the motion of lithospheric plates to explain why the Pacific Rim is referred to as the Ring of Fire.	16 plate tectonics 165 geologic basis for natural hazards 235 behavior of Earth's crust 246 theory of plate tectonics 247 plate tectonics explains surface features of Earth 248 plate tectonics 253 know geologic basis for volcanoes 253 plate tectonics 254 plate tectonics 260 geologic basis for earthquakes 262 location of volcanoes and earthquakes 264 geologic basis for volcanoes 264 know that the explanation for the location and properties of volcanoes are due to hot spots and subduction 265 volcanoes are caused by hot spots 267 plate tectonics 268 plate tectonics	78 geologic basis for earthquakes 78 explanation for placement and properties of volcanoes 80 plate tectonics 81 plate tectonics 82 students know geologic basis for earthquakes 87 theory of plate tectonics 90 explanation of location of volcanoes

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				269	plate tectonics	
				270	basis of geologic hazards like earthquakes	
				271	know geologic basis for earthquakes	
				272	students know geologic basis for earthquakes	
				273	plate tectonics	
				273	know why and how earthquakes occur	
				275	geologic basis of earthquakes	
				280	how to use maps to identify geologic hazard	
				280	geologic basis for earthquakes	
				280	students analyze geologic hazard maps and know how to use the map's information	
				287	geologic basis for volcanoes	
				288	geologic basis for volcanoes	
				289	geologic basis for volcanoes	
				290	geologic basis for volcanoes	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				291	geologic basis for volcanoes	
				291	use geologic hazard map to know where geologic events have occurred or will occur	
				292	geologic basis for volcanoes	
				292	volcanoes occur at hotspots due to subduction	
				293	volcanoes occur at hotspots created because of subduction	
				295	two types of volcanoes—violent and with voluminous lava	
				297	know geologic basis of natural hazards	
				318	plate tectonics	
				384	how human activity affects renewable and nonrenewable resources	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.06.D.2 5-6	Earth Systems Science	Tectonics	Locate areas that are being created (deposition) and destroyed (erosion) using maps and satellite images.	5 explain factors that helped shape Earth—volcanism 18 recognize forces that shape Earth—volcanoes 92 how water cycle is related to erosion 93 water cycle is related to erosion 118 evolution of land features from gradual changes 168 how water cycle is related to erosion 169 explain how rocks are broken down by the action of water 170 how rocks are broken down and how surface features are affected by water 171 erosion and how surface features change 172 how water is cycle is related to erosion 175 how water cycle is related to erosion 209 explain how water cycle is related to erosion	61 how rock cycle is related to erosion 74 mountain building 98 explain how water is related to erosion 100 water cycle related to erosion 102 predict evolution of land features resulting from erosion 104 predict results of erosion 105 predict results of erosion

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				210	how rocks are broken down and surface features change due to action of water	
				252	major Earth systems—lithosphere	
				258	predict results of gradual changes—mountain building	
				283	how volcanoes shape Earth's surface	
				284	volcanoes shape Earth's surface	
				292	forces such as erosion and volcanism that shape Earth's surface	
				292	forces such as erosion and volcanism that shape Earth's surface	
				304	forces that shape Earth's surface (i.e. volcanism)	
				308	rock gets broken down into soil	
				308	forces that shape Earth (erosion)	
				312	how volcanoes help shape Earth	
				318	forces like volcanoes and erosion form and shape Earth	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				326	predict evolution of land features resulting from gradual changes	
				327	water cycle related to erosion	
				327	how rocks are broken down	
				328	water related to weathering	
				329	how rocks are broken down by water and ice	
				330	forces that shape Earth's surface—erosion	
				332	forces that shape Earth's surface—erosion	
				332	how rocks are broken down and turned back into soil	
				333	how water cycle is related to erosion	
				334	water cycle related to erosion	
				335	how water cycle is related to erosion	
				337	rocks broken down into soil	
				339	evolution of land features from gradual changes	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				340	Earth's surface changes because of water	
				341	forces that shape Earth such as erosion	
				342	predict evolution of land features because of erosion	
				343	how water cycle relates to erosion	
				344	water cycle related to erosion	
				345	water cycle related to erosion	
				356	soil formation	
				358	how rocks break down into soil	
				358	forces that change Earth's surface erosion	
				358	forces that change Earth's surface (erosion)	
				359	rocks are broken down into soil	
				359	evolution of land features from erosion	
				360	how rocks are broken down into soil	
				361	rocks broken down into soil	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				362	evolution of land features by erosion	
				363	how rocks are broken down into soil	
				364	how water cycle is related to erosion	
				392	volcanism	
				392	volcanism	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.06.E.1 5-6	Earth Systems Science	Energy in Earth Systems	Generate a conclusion about energy transfer and circulation by observing a model of convection currents.	87 relationship between sun and precipitation 99 relationships between sun and water cycle 112 relationships between Earth's rotation and currents 117 differential heating of oceans 122 differential heating of Earth causes circulation 124 how differential heating of Earth causes air movements 124 Coriolis effect 124 know the relationship between rotation of Earth and the circular motion of air currents 125 differential heating of Earth results in circulation of air 125 Coriolis effect 135 Coriolis effect 135 differential heating of Earth leads to distribution of heat 137 Coriolis effect	25 explain relationship between solar energy and precipitation and rivers and oceans 26 understand relationship between solar energy and water cycle 48 differential heating causes circulation of currents

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				142	relationship between solar energy and precipitation	
				156	how sun and oceans interact	
				158	relationship between sun and oceans	
				159	Coriolis effect	
				183	Coriolis effect	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.06.F.1 5-6	Earth Systems Science	Climate and Weather	Explain the interrelationships between daily temperature, air pressure, and relative humidity data.	116 hurricanes 117 hurricanes 122 large scale movement of air and how it affects weather 122 changes in and causes for weather 123 large movements of air 125 how air movement affects weather 126 movement of air affects weather 129 types of precipitation based on dewpoint 130 describe changes in weather (i.e. clouds) 131 reasons for changes in weather 132 changes in weather 132 different forms of precipitation 133 large scale movement of air causes weather changes 133 changes in weather 134 movement of air affects weather	30 changes in weather 40 describe changes in weather 42 causes for tornadoes 44 hurricanes

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				134	reasons for changes in weather	
				136	causes of severe weather	
				137	changes in weather and causes for storms	
				137	movement of air affects weather	
				138	reasons for tornadoes	
				141	movement of air affects climate	
				158	movements of air affect weather patterns	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
5.4.06.F.2 5-6	Earth Systems Science	Climate and Weather	Create climatographs for various locations around Earth and categorize the climate based on the yearly patterns of temperature and precipitation.	105	effect of elevation on climate	
				111	weather and climate are based on heat transfer	
				122	weather involves transfer of energy	
				125	effect of latitude on climate	
				128	how climate is related to transfer of energy	
				134	things that affect climate and weather	
				135	weather is due to energy transfer	
				137	know weather is the result of energy transfers	
				138	know weather has to do with energy transfer	
				139	effect on climate of ocean currents	
				141	know effects on climate of altitude, latitude, topography, and bodies of water	
				141	effects of latitude and elevation and topography and proximity to water on climate	
				142	know that climate is based on energy transfer	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				143	mountains affect climate	
				159	effects of climate based on warm or cold ocean currents	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.06.G.1 5-6	Earth Systems Science	Biogeochemical Cycles	Illustrate global winds and surface currents through the creation of a world map of global winds and currents that explains the relationship between the two factors.	112 relationships between Earth's rotation and currents 117 differential heating of oceans 117 how oceans affect weather 122 large scale movement of air and how it affects weather 122 differential heating of Earth causes circulation 123 large movements of air 124 Coriolis effect 124 how differential heating of Earth causes air movements 124 know the relationship between rotation of Earth and the circular motion of air currents 125 differential heating of Earth results in circulation of air 125 Coriolis effect 125 how air movement affects weather 126 movement of air affects weather	45 investigate ocean currents 48 differential heating causes circulation of currents

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				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	
				135	Coriolis effect	
				137	movement of air affects weather	
				137	Coriolis effect	
				139	how oceans affect weather including El Nino	
				141	oceans affect climate	
				141	movement of air affects climate	
				158	movements of air affect weather patterns	
				158	oceans affect climate	
				159	Coriolis effect	
				159	ocean currents	
				160	ocean currents	
				178	ocean currents	
				179	ocean currents	
				183	Coriolis effect	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.06.G.2 5-6	Earth Systems Science	Biogeochemical Cycles	Create a model of ecosystems in two different locations, and compare and contrast the living and nonliving components.	142 what things affect biomes and populations there 145 factors like water that affect populations in ecosystems 356 how matter flows in an ecosystem	49 factors regarding populations
5.4.06.G.3 5-6	Earth Systems Science	Biogeochemical Cycles	Describe ways that humans can improve the health of ecosystems around the world.	341 effects of agriculture 362 effects of agriculture	
5.4.08.A.1 7-8	Earth Systems Science	Objects in the Universe	Analyze moon-phase, eclipse, and tidal data to construct models that explain how the relative positions and motions of the Sun, Earth, and Moon cause these three phenomena.	423 relationship of Earth and moon 426 giant impact theory 428 tides and Earth and moon's relationship 432 phases of the moon 433 phases of moon 434 lunar eclipses 435 solar eclipses	127 phases of the moon 137 appearance of moon 138 appearance of the moon

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.4.08.A.2 7-8	Earth Systems Science	Objects in the Universe	Use evidence of global variations in day length, temperature, and the amount of solar radiation striking Earth's surface to create models that explain these phenomena and seasons.	114	explain relationship between Earth, Sun, and patterns of seasons	117	relationship between sun and Earth and day and night
				404	Earth's rotation and patterns of day and night	119	relationship between sun and Earth
				423	relationship of sun and Earth	124	relationship between sun and Earth and days
				424	relationship of Earth and sun	131	how Sun and Earth distances cause seasons
				430	patterns of day and night and years	132	Earth and Sun positions causing seasons
				435	solar eclipses	133	Sun and Earth positions and their relationship with seasons
				435	solar eclipses		
				436	seasons and relationship between Earth and sun	133	relationship between Earth sun and light
				437	identify seasons		
				445	identify seasons		

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
5.4.08.A.3 7-8	Earth Systems Science	Objects in the Universe	Predict how the gravitational force between two bodies would differ for bodies of different masses or bodies that are different distances apart.	16 17 22 27 324 353 374 402 425 428	gravitation law of gravity law of gravity law of gravity law of gravity law of gravity law of gravity Newton's universal law of gravitation role of gravity in solar system role of gravity in solar system	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.08.A.4 7-8	Earth Systems Science	Objects in the Universe	Analyze data regarding the motion of comets, planets, and moons to find general patterns of orbital motion.	113 compare orbits of planets 403 orbits of moons and planets 411 compare orbits of planets in solar system 415 orbits of other bodies in the solar system 416 other bodies in solar system 418 compare orbits of planets and other bodies in solar system 423 orbits of planets and moons 424 orbits of planets in solar system 425 compare orbits of planets and moon 430 explain orbit of Earth 432 orbit of moon	117 orbits of moon and planets 118 orbits of moons and other planets 119 orbits of planets 138 orbits of planets

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.4.08.B.1 7-8	Earth Systems Science	History of Earth	Correlate the evolution of organisms and the environmental conditions on Earth as they changed throughout geologic time.	169	explain how rocks are broken down by the action of water	80	general history on Earth
				170	how rocks are broken down and how surface features are affected by water		
				171	erosion and how surface features change		
				209	how rocks and fossils are used to determine age of Earth		
				210	how rocks are used to tell age of Earth		
				210	how rocks are broken down and surface features change due to action of water		
				211	how rocks and fossils are used to date Earth		
				212	general history of Earth		
				212	fossils used to determine age of Earth		
				213	how rocks and fossils are used to date Earth		
				214	explain general history of life on Earth		
				215	fossil record helps to understand the history of Earth		

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				216	fossil record used to understand Earth's history	
				217	how rocks are used to tell the age of Earth	
				221	explain general history of life	
				223	explain how rocks are used to determine age of Earth	
				235	explain ice ages	
				237	general Earth systems	
				238	lithosphere	
				252	major Earth systems—lithosphere	
				307	how rocks are used to tell age of Earth	
				308	rock gets broken down into soil	
				327	how rocks are broken down	
				329	how rocks are broken down by water and ice	
				332	how rocks are broken down and turned back into soil	
				337	rocks broken down into soil	
				337	ice ages	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				340	Earth's surface changes because of water	
				356	soil formation	
				358	how rocks break down into soil	
				359	rocks are broken down into soil	
				359	how rocks can help tell age of Earth	
				360	how rocks are broken down into soil	
				361	rocks broken down into soil	
				363	how rocks are broken down into soil	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.4.08.B.2 7-8	Earth Systems Science	History of Earth	Evaluate the appropriateness of increasing the human population in a region (e.g., barrier islands, Pacific Northwest, Midwest United States) based on the region's history of catastrophic events, such as volcanic eruptions, earthquakes, and floods.	5	explain factors that helped shape Earth—volcanism	74	mountain building
				18	recognize forces that shape Earth—volcanoes	80	general history on Earth
				118	evolution of land features from gradual changes	102	predict evolution of land features resulting from erosion
				212	general history of Earth	104	predict results of erosion
				214	explain general history of life on Earth	105	predict results of erosion
				215	fossil record helps to understand the history of Earth		
				216	fossil record used to understand Earth's history		
				221	explain general history of life		
				235	explain ice ages		
				237	general Earth systems		
				238	lithosphere		
				258	predict results of gradual changes—mountain building		
				283	volcanoes change natural habitat		
				283	how volcanoes shape Earth's surface		
				284	volcanoes shape Earth's surface		

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
				292 forces such as erosion and volcanism that shape Earth's surface 292 forces such as erosion and volcanism that shape Earth's surface 304 forces that shape Earth's surface (i.e. volcanism) 308 forces that shape Earth (erosion) 312 how volcanoes help shape Earth 318 forces like volcanoes and erosion form and shape Earth 326 predict evolution of land features resulting from gradual changes 330 forces that shape Earth's surface—erosion 332 forces that shape Earth's surface—erosion 337 ice ages 339 Earth changes due to landslides 339 evolution of land features from gradual changes 340 landslides change habitats	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				341	forces that shape Earth such as erosion	
				342	predict evolution of land features because of erosion	
				358	forces that change Earth's surface (erosion)	
				358	forces that change Earth's surface erosion	
				359	evolution of land features from erosion	
				362	evolution of land features by erosion	
				392	volcanism	
				392	volcanism	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
5.4.08.C.1 7-8	Earth Systems Science	Properties of Earth Materials	Determine the chemical properties of soil samples in order to select an appropriate location for a community garden.	169	explain how rocks are broken down by the action of water	
				170	how rocks are broken down and how surface features are affected by water	
				171	erosion and how surface features change	
				210	how rocks are broken down and surface features change due to action of water	
				252	major Earth systems—lithosphere	
				308	rock gets broken down into soil	
				327	how rocks are broken down	
				329	how rocks are broken down by water and ice	
				332	how rocks are broken down and turned back into soil	
				337	rocks broken down into soil	
				340	Earth's surface changes because of water	
				356	soil formation	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
				358 how rocks break down into soil 359 rocks are broken down into soil 360 how rocks are broken down into soil 361 rocks broken down into soil 363 how rocks are broken down into soil	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.08.C.2 7-8	Earth Systems Science	Properties of Earth Materials	Explain how chemical and physical mechanisms (changes) are responsible for creating a variety of landforms.	5 explain factors that helped shape Earth—volcanism 18 recognize forces that shape Earth—volcanoes 118 evolution of land features from gradual changes 169 explain how rocks are broken down by the action of water 170 how rocks are broken down and how surface features are affected by water 171 erosion and how surface features change 210 how rocks are broken down and surface features change due to action of water 252 major Earth systems—lithosphere 258 predict results of gradual changes—mountain building 283 volcanoes change natural habitat 283 how volcanoes shape Earth's surface	74 mountain building 100 rivers and streams 101 rivers and streams 102 predict evolution of land features resulting from erosion 104 predict results of erosion 105 predict results of erosion

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				284	volcanoes shape Earth's surface	
				292	forces such as erosion and volcanism that shape Earth's surface	
				292	forces such as erosion and volcanism that shape Earth's surface	
				304	forces that shape Earth's surface (i.e. volcanism)	
				308	forces that shape Earth (erosion)	
				308	geologic recycling of rock	
				308	rock gets broken down into soil	
				312	how volcanoes help shape Earth	
				318	forces like volcanoes and erosion form and shape Earth	
				326	predict evolution of land features resulting from gradual changes	
				327	how rocks are broken down	
				329	how rocks are broken down by water and ice	
				330	forces that shape Earth's surface—erosion	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				332	how rocks are broken down and turned back into soil	
				332	forces that shape Earth's surface—erosion	
				334	rivers streams erosion and deposition	
				337	rocks broken down into soil	
				339	evolution of land features from gradual changes	
				339	Earth changes due to landslides	
				340	Earth's surface changes because of water	
				340	landslides change habitats	
				341	forces that shape Earth such as erosion	
				342	predict evolution of land features because of erosion	
				343	streams and erosion	
				356	soil formation	
				357	how Earth's materials are recycled geologically	
				358	how rocks break down into soil	
				358	Earth's materials are recycled geologically	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
				358 forces that change Earth's surface (erosion) 358 forces that change Earth's surface erosion 359 rocks are broken down into soil 359 evolution of land features from erosion 360 how rocks are broken down into soil 361 rocks broken down into soil 362 evolution of land features by erosion 363 how rocks are broken down into soil 392 volcanism 392 volcanism	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.08.C.3 7-8	Earth Systems Science	Properties of Earth Materials	Model the vertical structure of the atmosphere using information from active and passive remote-sensing tools (e.g., satellites, balloons, and/or ground-based sensors) in the analysis.	99 components of Earth's atmosphere 102 atmospheric pressure and how it changes with altitude 103 techniques for atmospheric measurement 105 water vapor as part of the atmosphere 116 tools (planes) for atmospheric measurement 117 techniques for atmospheric measurement 122 large scale movement of air and how it affects weather 123 large movements of air 125 how air movement affects weather 126 movement of air affects weather 129 water vapor as part of atmosphere 131 water vapor as part of atmosphere	30 describe techniques for atmospheric measurement 31 make a barometer for air pressure readings 38 use techniques for atmospheric measurement 39 use techniques for atmospheric measurement 41 techniques of atmospheric measurement

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				133	large scale movement of air causes weather changes	
				134	movement of air affects weather	
				137	movement of air affects weather	
				141	movement of air affects climate	
				148	describe techniques for atmospheric observation	
				149	tools used to measure atmosphere	
				158	movements of air affect weather patterns	
				390	significance of greenhouse effect	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.08.D.1 7-8	Earth Systems Science	Tectonics	Model the interactions between the layers of Earth.	199 types of rock and how they are formed 295 how rocks are formed 307 types of rocks and how they are made 308 rock cycle and types of rock 310 igneous rock formation 311 how igneous rocks are formed 312 how rocks are formed 315 how sedimentary rocks are formed 316 metamorphic rock formation 317 formation of metamorphic rocks 318 how rocks are formed 327 rock cycle 336 types of rock and how they are formed 358 rock formation	90 how rocks are formed 94 explain how rocks are formed 100 types of rocks and how they are formed

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.4.08.D.2 7-8	Earth Systems Science	Tectonics	Present evidence to support arguments for the theory of plate motion.	5	explain factors that helped shape Earth—volcanism	70	types of features found along plate boundaries
				16	plate tectonics	76	three types of plate boundaries and features associated with them
				18	recognize forces that shape Earth—volcanoes	77	students know why earthquakes occur
				198	students know that ocean floor gives evidence for plate tectonics	78	explanation for placement and properties of volcanoes
				234	know features of ocean floor	78	structures that form at certain plate boundaries
				235	behavior of Earth's crust	78	types of features at plate boundaries
				238	features of ocean floor	78	students know the structures that form at plate boundaries
				239	cause of earthquakes	80	plate tectonics
				246	theory of plate tectonics	81	plate tectonics
				247	plate tectonics explains surface features of Earth	82	students know why earthquakes occur
				248	plate tectonics	82	students know why earthquakes occur
				249	features of ocean floor that give evidence for plate tectonics	85	students understand how earthquakes occur
				250	know features of ocean floor as evidence for plate tectonics	87	theory of plate tectonics
				253	plate tectonics		
				253	evolution of land features resulting from gradual changes		

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
				253 structures that form at plate boundaries 254 plate tectonics 254 features of ocean floor that give evidence for plate tectonics 254 plate boundaries 255 plate boundaries 256 plate boundaries 256 features of ocean floor that provide evidence for plate tectonics 259 plate boundaries 259 know how earthquakes occur 260 structures that form at plate boundaries 261 plate boundaries 262 ocean floor as evidence for plate tectonics 263 plate boundaries 264 principal structures that form at plate boundaries 264 know that the explanation for the location and properties of volcanoes are due to hot spots and subduction	88 students know why and how earthquakes occur and the scales used to measure their intensity 88 students know there are two types of volcanoes—one with violent eruptions and voluminous lava flows 89 students know structures that form at the three different plate boundaries 89 two types of volcanoes violent and gentle 89 students know that there are two kinds of volcanoes 89 know what forms at different types of plate boundaries 90 explanation of location of volcanoes 90 types of volcanoes

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				266	plate boundaries	
				267	plate boundaries	
				267	plate tectonics	
				267	ocean floor features give evidence for plate tectonics	
				268	plate boundaries	
				268	plate tectonics	
				269	plate tectonics	
				270	why and how earthquakes occur	
				273	plate tectonics	
				274	students know why and how earthquakes occur	
				278	scale for measuring earthquakes	
				279	earthquake scale	
				280	scale for earthquakes	
				280	types of features at plate boundaries	
				281	know scales used to measure intensity of earthquakes	
				282	explain the inner structure of a volcano	
				283	how volcanoes shape Earth's surface	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				284	volcanoes shape Earth's surface	
				285	inner workings of a volcano	
				286	different types of volcanoes	
				287	describe inner workings of volcanoes	
				287	two types of volcanoes—violent and voluminous lava	
				288	types of volcanoes	
				289	workings of a volcano	
				289	types of volcanoes	
				290	sea floor characteristics are evidence of plate tectonics	
				290	structures that form at plate boundaries	
				292	forces such as erosion and volcanism that shape Earth's surface	
				292	forces such as erosion and volcanism that shape Earth's surface	
				292	volcanoes occur at hotspots due to subduction	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				293	volcanic islands appear at plate boundaries	
				293	diagram structure of volcano	
				293	volcanoes occur at hotspots created because of subduction	
				294	islands form at plate boundaries	
				295	two types of volcanoes—violent and with voluminous lava	
				304	forces that shape Earth's surface (i.e. volcanism)	
				308	forces that shape Earth (erosion)	
				310	types of plate boundaries	
				312	how volcanoes help shape Earth	
				317	sea floor characteristics show evidence of plate tectonics	
				317	types of formations found at different plate boundaries	
				318	plate tectonics	
				318	forces like volcanoes and erosion form and shape Earth	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
				318	structures formed at types of plate boundaries		
				319	plate boundaries		
				330	forces that shape Earth's surface—erosion		
				332	forces that shape Earth's surface—erosion		
				341	forces that shape Earth such as erosion		
				358	forces that change Earth's surface erosion		
				358	forces that change Earth's surface (erosion)		
				384	how human activity affects renewable and nonrenewable resources		
				392	volcanism		
				392	volcanism		
5.4.08.D.3 7-8	Earth Systems Science	Tectonics	Explain why geomagnetic north and geographic north are at different locations.	78	use a compass	37	use a compass
				202	use a compass	125	use a compass

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.4.08.E.1 7-8	Earth Systems Science	Energy in Earth Systems	Explain how energy from the Sun is transformed or transferred in global wind circulation, ocean circulation, and the water cycle.	46	water cycle	25	explain relationship between solar energy and precipitation and rivers and oceans
				82	different types of water on Earth	25	water cycle model
				83	different forms of water on Earth	26	understand relationship between solar energy and water cycle
				86	different forms of water on Earth	26	water cycle model
				87	water cycle	48	differential heating causes circulation of currents
				87	relationship between sun and precipitation	116	water cycle
				88	water cycle and types of water on Earth		
				90	describe the water cycle		
				92	water cycle and types of water		
				99	relationships between sun and water cycle		
				117	differential heating of oceans		
				122	differential heating of Earth causes circulation		
				124	how differential heating of Earth causes air movements		
				125	differential heating of Earth results in circulation of air		
				130	water cycle and types of water on Earth		

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				131	types of water on Earth	
				132	types of water	
				135	differential heating of Earth leads to distribution of heat	
				142	relationship between solar energy and precipitation	
				156	how sun and oceans interact	
				158	relationship between sun and oceans	
				365	various forms of water (i.e. surface water)	
				366	water cycle	
				388	describe water cycle	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.08.F.1 7-8	Earth Systems Science	Climate and Weather	Determine the origin of local weather by exploring national and international weather maps.	116 hurricanes 117 hurricanes 122 large scale movement of air and how it affects weather 122 changes in and causes for weather 123 large movements of air 125 how air movement affects weather 126 movement of air affects weather 129 types of precipitation based on dewpoint 130 describe changes in weather (i.e. clouds) 131 reasons for changes in weather 132 changes in weather 132 different forms of precipitation 133 changes in weather 133 large scale movement of air causes weather changes 134 movement of air affects weather	30 changes in weather 40 describe changes in weather 42 causes for tornadoes 44 hurricanes 59 maps 77 maps 78 maps 78 maps

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				134	reasons for changes in weather	
				135	maps	
				136	causes of severe weather	
				137	movement of air affects weather	
				137	changes in weather and causes for storms	
				138	reasons for tornadoes	
				141	movement of air affects climate	
				158	movements of air affect weather patterns	
				186	map	
				188	maps	
				189	maps	
				191	maps	
				193	maps	
				195	maps	
				197	maps	
				198	maps	
				200	maps	
				201	maps	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.4.08.F.2 7-8	Earth Systems Science	Climate and Weather	Explain the mechanisms that cause varying daily temperature ranges in a coastal community and in a community located in the interior of the country.	105	effect of elevation on climate	45	investigate ocean currents
				111	weather and climate are based on heat transfer		
				117	how oceans affect weather		
				122	weather involves transfer of energy		
				125	effect of latitude on climate		
				128	how climate is related to transfer of energy		
				134	things that affect climate and weather		
				135	weather is due to energy transfer		
				137	know weather is the result of energy transfers		
				138	know weather has to do with energy transfer		
				139	how oceans affect weather including El Nino		
				139	effect on climate of ocean currents		
				141	effects of latitude and elevation and topography and proximity to water on climate		

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				141	know effects on climate of altitude, latitude, topography, and bodies of water	
				141	oceans affect climate	
				142	know that climate is based on energy transfer	
				142	interaction of wind, ocean currents, and mountains results in distribution of biomes	
				143	mountains affect climate	
				145	distribution of deserts and rain forests because of oceans	
				158	oceans affect climate	
				159	ocean currents	
				159	effects of climate based on warm or cold ocean currents	
				159	interaction of wind patterns and ocean currents	
				160	ocean currents	
				178	ocean currents	
				179	ocean currents	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.4.08.F.3 7-8	Earth Systems Science	Climate and Weather	Create a model of the hydrologic cycle that focuses on the transfer of water in and out of the atmosphere. Apply the model to different climates around the world.	46	water cycle	25	water cycle model
				46	water cycle	25	explain relationship between solar energy and precipitation and rivers and oceans
				82	different types of water on Earth	25	water cycle model
				82	different types of water on Earth	26	water cycle model
				83	different forms of water on Earth	26	understand relationship between solar energy and water cycle
				83	different forms of water on Earth	26	water cycle model
				86	different forms of water on Earth	116	water cycle
				86	different forms of water on Earth	116	water cycle
				87	water cycle		
				87	relationship between sun and precipitation		
				87	water cycle		
				88	water cycle and types of water on Earth		
				88	water cycle and types of water on Earth		
				90	describe the water cycle		
				90	describe the water cycle		
				92	water cycle and types of water		

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				92	water cycle and types of water	
				99	relationships between sun and water cycle	
				111	weather and climate are based on heat transfer	
				122	weather involves transfer of energy	
				126	water cycle related to weather	
				126	how water cycle affects weather	
				128	how climate is related to transfer of energy	
				130	water cycle and types of water on Earth	
				130	water cycle and types of water on Earth	
				131	types of water on Earth	
				131	types of water on Earth	
				132	how water cycle relates to weather	
				132	types of water	
				132	types of water	
				135	weather is due to energy transfer	
				137	know weather is the result of energy transfers	

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				137	water cycle affects weather	
				138	know weather has to do with energy transfer	
				141	water affects climates	
				142	relationship between solar energy and precipitation	
				142	know that climate is based on energy transfer	
				143	water affects temperature	
				156	how sun and oceans interact	
				158	relationship between sun and oceans	
				158	how water cycle relates to weather patterns	
				365	various forms of water (i.e. surface water)	
				365	various forms of water (i.e. surface water)	
				366	water cycle	
				366	water cycle	
				388	describe water cycle	
				388	describe water cycle	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page	
5.4.08.G.1 7-8	Earth Systems Science	Biogeochemical Cycles	Represent and explain, using sea surface temperature maps, how ocean currents impact the climate of coastal communities.	105	effect of elevation on climate	45	investigate ocean currents
				117	how oceans affect weather		
				125	effect of latitude on climate		
				134	things that affect climate and weather		
				139	effect on climate of ocean currents		
				139	how oceans affect weather including El Nino		
				141	know effects on climate of altitude, latitude, topography, and bodies of water		
				141	effects of latitude and elevation and topography and proximity to water on climate		
				141	oceans affect climate		
				142	interaction of wind, ocean currents, and mountains results in distribution of biomes		
				143	mountains affect climate		
				145	distribution of deserts and rain forests because of oceans		
				158	oceans affect climate		

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				159	ocean currents	
				159	effects of climate based on warm or cold ocean currents	
				159	interaction of wind patterns and ocean currents	
				160	ocean currents	
				178	ocean currents	
				179	ocean currents	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.08.G.2 7-8	Earth Systems Science	Biogeochemical Cycles	Investigate a local or global environmental issue by defining the problem, researching possible causative factors, understanding the underlying science, and evaluating the benefits and risks of alternative solutions.	108 air pollution 108 how people affect Earth's atmosphere 322 how humans activities affect resources 340 explain relationship between hydropshere, climate, and human activity 341 how technology shapes landscape (i.e. erosion) 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 how technology shapes Earth's surface 362 draw conclusions about human activity on Earth's 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

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				364	origins and effects of water pollution	
				365	effects of human activity on water	
				365	relationship between hydrosphere and human activity	
				366	relationship between hydrosphere and human activity	
				367	relationship between humans and hydrosphere	
				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	
				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	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				387	describe origins of air pollution	
				388	origins and effects of water pollution	
				390	origin of air pollution	
				472	how humans activities affect resources	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page	Volume 2 Investigation Manual Page
5.4.6.B.2 5-6	Earth Systems Science	History of Earth	Examine Earth's surface features and identify those created on a scale of human life or on a geologic time scale.	5 explain factors that helped shape Earth—volcanism 18 recognize forces that shape Earth—volcanoes 118 evolution of land features from gradual changes 258 predict results of gradual changes—mountain building 283 how volcanoes shape Earth's surface 284 volcanoes shape Earth's surface 292 forces such as erosion and volcanism that shape Earth's surface 292 forces such as erosion and volcanism that shape Earth's surface 304 forces that shape Earth's surface (i.e. volcanism) 308 forces that shape Earth (erosion) 312 how volcanoes help shape Earth 318 forces like volcanoes and erosion form and shape Earth	74 mountain building 102 predict evolution of land features resulting from erosion 104 predict results of erosion 105 predict results of erosion

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science

CPO Science Earth Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume 1 Student Text Page		Volume 2 Investigation Manual Page
				326	predict evolution of land features resulting from gradual changes	
				330	forces that shape Earth's surface—erosion	
				332	forces that shape Earth's surface—erosion	
				339	evolution of land features from gradual changes	
				341	forces that shape Earth such as erosion	
				342	predict evolution of land features because of erosion	
				358	forces that change Earth's surface (erosion)	
				358	forces that change Earth's surface erosion	
				359	evolution of land features from erosion	
				362	evolution of land features by erosion	
				392	volcanism	
				392	volcanism	