

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two 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.	8 proposing an explanation 11 revising explanations 12 proposing explanations 15 concept of scientific theory explained 30 interpreting observations and proposing explanations 96 proposing explanations 138 cell theory 149 posing explanations 181 theory of how eukaryotic cells developed from prokaryotic cells 190 construct explanations supported by evidence 258 evidence for theory of evolution 261 basis for theory 267 Darwin's theory 288 Wegener's theory 289 plate tectonic theory 300 interpret observations 317 Potter's theory 434 design scientific experiments 434 interpret observation	3 revising explanations based on observational evidence 17 patterns in observed world 18 revise explanations 19 explanation based on data 27 interpret observations 30 interpreting observations and proposing explanations 34 interpret observations 39 interpreting observations 42 interpreting observations 44 interpreting observations and posing explanations 47 posing explanations 49 interpret observations and pose explanations 52 proposing explanations from data 63 interpreting observations and proposing explanations 65 interpreting data and posing explanations 70 make explanations based on evidence

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
					76 construct explanations backed by data
					76 interpret observations
					77 construct explanation based on evidence
					79 explanation supported by evidence
					84 explanations based on evidence
					85 construct explanations based on evidence
					90 interpreting observations and proposing explanations
					94 proposing explanations
					97 interpret observations
					105 explanations from experiments
					111 interpret observations and propose explanations
					116 interpreting observations and proposing explanations
					122 posing explanations

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two 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.	17	constructing a graphical model	3	constructing graphical model
				17	interpretation of patterns from graphs and tables	6	creating a graphical model from data
				18	making graphical model from data	37	making graph from data
				19	creating graphical model from data	47	using data tables
				21	constructing graphical model from data	54	constructing graphical model from data
				21	interpretation of patterns in data	57	making sketches and diagrams
				24	interpretation of patterns in data	83	evaluate graphical model
				40	patterns from	87	evaluate data from graph
				152	recognition that scientific knowledge can be in the form of models	87	analyze trends from data
				170	science can be models	87	patterns in data
				190	interpretation of patterns from data	107	create and analyze graphical model from data
				210	science—not just a collection of facts but can be a conceptual model	113	find math rule for lever equilibrium
				260	interpretation of data from charts	153	lab notebook
				300	graphs	154	making graphs
				402	scientific knowledge in the form of models		

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				452 scientific knowledge can be in the form of models	

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page		Volume Two 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.	14	lab report	6	make prediction based on inferences from data
				20	analysis of trends from data	9	make predictions based on inferences from data
				21	analyze trends from data	15	writing up scientific results
				26	analyze trends in data	19	predict
				157	making predictions based on inferences from data	19	explanation based on data
				190	construct explanations supported by evidence	22	make predictions based on observed data
						27	make predictions based on observed data
						45	making predictions based on inferences from observed data
						54	analyze trends from data
						58	make predictions based on inferences from data
		61	make predictions based on inferences from observed data				
		70	make predictions from data				
		70	make explanations based on evidence				
		75	use arguments of % to describe data				
		76	construct explanations backed by data				

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
					77 construct explanation based on evidence
					79 explanation supported by evidence
					80 make argument based on evidence
					84 explanations based on evidence
					85 construct explanations based on evidence
					92 make predictions based on inferences from observed data
					105 explanations from experiments
					113 analyze trends from data
					113 analyze lever equilibrium data
					115 make predictions based on data
					121 make predictions based on observations
					130 formal lab report
					131 lab report
					132 writing up results
					154 making graphs
					155 formal lab report

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page		Volume Two 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.	6	length	1	making accurate measurements
				13	designing scientific experiments	1	measurements and use of proper tools
				14	collect data with precision in mind	2	collect quantitative data
				16	designing scientific experiments—including asking questions	4	collect data with precision as a central consideration
				434	making measurements	29	collect observational data
						41	collect quantitative data
						44	collect qualitative data
						54	collect quantitative data
						60	collect quantitative data
						82	measurement
						82	quantitative data
						95	quantitative data
						97	quantitative data
						97	measuring
						101	design experiments
						103	make predictions
						107	quantitative data
						110	quantitative data
						120	collect quantitative data
						133	measuring
						134	measuring
						135	measuring

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
					136 measuring 139 measuring 140 measuring 141 measuring 142 measuring

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two 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.	17	interpretation of patterns from graphs and tables	2	collect quantitative data
				18	using data tables	3	creating and using data tables
				20	analysis of trends from data	5	creating and using lab tables
				21	interpretation of patterns in data	8	collect observational data
				21	analyze trends from data	11	creating and using data tables
				21	creating and using data tables	12	collect observational data
				24	interpretation of patterns in data	13	observational data
				26	analyze trends in data	14	observation
				40	collect observational data	16	creating data tables
				40	patterns from	16	collect observational data
				104	data tables	21	data tables
				152	recognition that scientific knowledge can be in the form of models	24	creating and using data tables
				170	science can be models	24	collecting observational data
				190	interpretation of patterns from data	29	creating and using data tables
				210	science—not just a collection of facts but can be a conceptual model	29	collect observational data
				260	interpretation of data from charts	31	make observational data
				300	data tables	32	data tables
		36	data tables				
		37	data tables				
		39	collect observational data				

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				318 data tables	41 collecting observational data
				402 scientific knowledge in the form of models	41 collect quantitative data
				402 average	44 collect observational data
				452 scientific knowledge can be in the form of models	44 collect qualitative data
					48 collect observational data
					54 analyze trends from data
					54 creating and using data tables
					54 collect quantitative data
					56 creating and using data tables
					57 using data tables
					60 collect quantitative data
					60 using data tables
					63 using data tables
					64 using data tables
					65 using data tables
					66 using data tables
					67 using data tables
					69 using data tables
					71 data tables
					75 data tables
					82 averaging
					82 quantitative data

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
					84 data tables
					85 data tables
					87 patterns in data
					88 creating data tables
					88 collect observational data
					89 collect observational data
					91 collect observational data
					91 using data tables
					95 quantitative data
					97 quantitative data
					97 data tables
					99 basic statistical analysis average
					100 collect observational data
					100 using data tables
					101 using data tables
					107 quantitative data
					107 data tables
					110 data tables
					110 quantitative data
					113 analyze trends from data
					113 analyze lever equilibrium data
					117 making observational data
					117 using data tables

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
					119 using data tables 120 collect quantitative data 120 using data tables 120 collect observational data 132 data tables 136 data tables 153 data tables 155 data tables

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two 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.	17	interpretation of patterns from graphs and tables	6	make prediction based on inferences from data
				17	interpretation of patterns from graphs and tables	9	make predictions based on inferences from data
				21	interpretation of patterns in data	19	predict
				21	interpretation of patterns in data	19	explanation based on data
				22	make predictions based on observed data		
				24	interpretation of patterns in data	27	make predictions based on observed data
				24	interpretation of patterns in data	45	making predictions based on inferences from observed data
				40	patterns from	58	make predictions based on inferences from data
				40	patterns from	61	make predictions based on inferences from observed data
				157	making predictions based on inferences from data	70	make predictions from data
				190	construct explanations supported by evidence	70	make explanations based on evidence
				190	interpretation of patterns from data	75	use arguments of % to describe data
				190	interpretation of patterns from data	76	construct explanations backed by data
				260	interpretation of data from charts	77	construct explanation based on evidence
				260	interpretation of data from charts		

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
					79 explanation supported by evidence
					80 make argument based on evidence
					84 explanations based on evidence
					85 construct explanations based on evidence
					87 patterns in data
					87 patterns in data
					92 make predictions based on inferences from observed data
					105 explanations from experiments
					115 make predictions based on data
					121 make predictions based on observations

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two 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.	11	revising explanations	3	testing hypothesis against data
				11	testing explanations against observations	3	revising explanations based on observational evidence
				17	interpretation of patterns from graphs and tables	3	analysis of error in measurement
				20	analysis of trends from data	6	testing hypothesis against data
				21	analyze trends from data	8	testing hypothesis against data
				21	interpretation of patterns in data	21	testing hypothesis
				24	interpretation of patterns in data	24	testing hypothesis against data
				26	analyze trends in data	25	review hypothesis based on results of observation
				40	patterns from	30	analysis of errors in experiments
				190	interpretation of patterns from data	44	testing hypothesis with data
				260	interpretation of data from charts	47	testing hypothesis with data
				376	testing explanation against observation	54	analyze trends from data
						60	testing hypothesis against data
						80	make argument based on evidence
						82	error in measurements
						87	patterns in data

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					107 analysis of errors 113 analyze trends from data 113 analyze lever equilibrium data

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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.	8	proposing an explanation	18	revise explanations
				12	proposing explanations	19	explanation based on data
				30	interpreting observations and proposing explanations	27	interpret observations
				96	proposing explanations	30	interpreting observations and proposing explanations
				149	posing explanations	34	interpret observations
				190	construct explanations supported by evidence	39	interpreting observations
				300	interpret observations	42	interpreting observations
				434	interpret observation	44	interpreting observations and posing explanations
				434	design scientific experiments	47	posing explanations
						49	interpret observations and pose explanations
						52	proposing explanations from data
						63	interpreting observations and proposing explanations
						65	interpreting data and posing explanations
						70	make explanations based on evidence
		76	construct explanations backed by data				
		76	interpret observations				
		77	construct explanation based on evidence				

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					79 explanation supported by evidence
					84 explanations based on evidence
					85 construct explanations based on evidence
					90 interpreting observations and proposing explanations
					94 proposing explanations
					97 interpret observations
					105 explanations from experiments
					111 interpret observations and propose explanations
					116 interpreting observations and proposing explanations
					122 posing explanations

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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.	11	revising explanations	3	revising explanations based on observational evidence
				15	concept of scientific theory explained		
				138	cell theory	25	review hypothesis based on results of observation
				181	theory of how eukaryotic cells developed from prokaryotic cells		
				258	evidence for theory of evolution		
				261	basis for theory		
				267	Darwin's theory		
				288	Wegener's theory		
				289	plate tectonic theory		
				317	Potter's theory		

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5.1.08.C.3 5 - 8	Science Practices	Reflect on Scientific Knowledge	Generate new and productive questions to evaluate and refine core explanations.	11 testing explanations against observations 12 testable hypothesis 12 process of scientific inquiry 161 scientific method—including making hypothesis 376 testing explanation against observation	3 testing hypothesis against data 4 conduct scientific inquiry through laboratory experimentations—asking questions and making hypothesis 5 formulate testable hypothesis 6 testing hypothesis against data 8 testing hypothesis against data 8 formulate testable hypothesis 11 formulate testable hypothesis 21 scientific inquiry 21 testing hypothesis 24 testing hypothesis against data 25 review hypothesis based on results of observation 44 formulate testable hypothesis 44 testing hypothesis with data 45 conduct scientific inquiry through laboratory experimentation

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					47 formulate a testable hypothesis
					47 testing hypothesis with data
					51 posing testable hypothesis
					60 testing hypothesis against data
					60 make testable hypothesis
					91 formulate testable hypothesis
					106 formulate hypothesis
					110 create hypothesis
					121 making hypothesis

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two 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.	16 making oral presentation of projects 130 communicating 130 oral report 154 communicating scientific information in written form and explaining and discussing hard to grasp concepts 154 making an oral presentation of a project 166 explaining phenomena and related ?? are made understandable through discussion 170 present results of experiments or projects 235 explaining to others 275 explaining helps to understand 402 explaining	6 make an oral presentation of scientific results or projects 15 written communication essential to science 15 writing up scientific results 25 making an oral presentation of scientific results 36 make oral presentation of results 37 communication is important to science 77 communicating 80 communicating results 80 make argument based on evidence 120 communicating orally is essential to science 131 communicating results is essential to science 132 writing up results 154 making graphs

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page		Volume Two Investigation Manual Page	
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 virtually, in the context of scientific investigations and model-building.	130	communicating	15	written communication essential to science
				154	communicating scientific information in written form and explaining and discussing hard to grasp concepts	37	communication is important to science
				166	explaining phenomena and related ?? are made understandable through discussion	77	communicating
				170	present results of experiments or projects	80	communicating results
				235	explaining to others	80	make argument based on evidence
				275	explaining helps to understand	120	communicating orally is essential to science
				402	explaining	131	communicating results is essential to science

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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 6 length 7 beakers and graduated cylinders 8 using thermometers 25 graduated cylinders 54 maps 179 micrometers 200 microscopes 434 making measurements	1 measurements and use of proper tools 1 metric units (millimeters and centimeters) 10 balances 23 beakers 35 maps 35 lab safety 39 microscope use 40 microscopes 40 lab safety 48 microscope 50 lab safety 51 microscope 53 microscopes 59 lab safety 82 measurement 82 rulers 92 microscope 93 microscope 94 microscope 96 microscope 97 measuring 99 microscopes 99 metric rulers

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					102 lab safety
					104 lab safety
					109 lab safety
					114 force scales
					124 lab safety
					125 lab safety
					126 lab safety
					126 goggles
					127 goggles and aprons
					127 lab safety
					128 goggles
					128 lab safety
					129 lab safety
					131 thermometers
					133 metric and English rulers
					133 measuring
					134 measuring
					134 metric rulers
					135 metric rulers
					135 measuring
					136 metric rulers
					136 measuring
					137 temperature measuring devices

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					138 beakers 138 thermometers 139 measuring 139 rulers 140 measuring 141 measuring 142 measuring 143 graduated cylinders 144 balances 145 balances 146 balances
5.1.08.D.4 5 - 8	Science Practices	Participate Productively in Science	Handle and treat organisms humanely, responsibly, and ethically.		
5.2.06.A.1 5-6	Physical Science	Properties of Matter	Determine the volume of common objects using water displacement methods.	7 measure volume of regular solid 10 volume measurements	139 measure volume of regular objects 140 volume of regular objects 141 measure volume of regular solids 142 measure volume of regular objects 143 measure volume of irregular objects

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5.3.06.A.1 5-6	Life Science	Organization and Development	Model the interdependence of the human body's major systems in regulating its internal environment.	36 homeostasis 36 homeostatis—how living things maintain balance 37 homeostasis 42 homeostasis 136 concept of homeostasis—how cells maintain internal environment 394 homeostasis 396 homeostatis—maintaining internal environment 397 homeostatis 399 homeostasis	26 how energy moves through an ecosystem

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5.3.06.A.2 5-6	Life Science	Organization and Development	Model and explain ways in which organelles work together to meet the cell's needs.	139 cell structures and functions of structures 140 concept of nucleus 142 structure and function of cell parts 142 concept of nucleus 142 mitochondria and chloroplasts 143 mitochondria and what they do 143 structure and function of cell organelles 143 classification of cells based on organelles 144 cell structures and what they do 144 concept of nucleus 145 mitochondria and their function 145 cell structures and what they do 146 cell structures and their functions 147 classification of plant cell based on organelles present 147 concept of chloroplasts 148 concept of chloroplast and what it does	39 cell structure and function 41 structure of a cell 42 classify cells by their organelles 42 structure of a cell 49 classification of cells based on organelles 50 classify cells based on structures

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				148	
					classification of cells based on structures
				153	concept of nucleus
				153	structure and function of a cell
				154	classifying cells based on organelles
				156	structure of the cell membrane
				159	structure of a cell—membrane
				164	concept of chloroplast
				165	concept of mitochondria
				167	concept of chloroplasts
				171	structures and function of cell parts
				172	concept of the mitochondria
				175	structure of protozoan cells and their functions
				176	classification of protozoans based on organelles
				178	structure of a cell and function of organelles
				181	concept of mitochondria
				185	structures of cells and their functions—membrane

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				198 nucleus 198 mitochondria 200 concept of nucleus 248 nucleus 248 mitochondria 249 mitochondria 314 nucleus 322 nucleus 353 structure of cells 412 mitochondria	
5.3.06.B.1 5-6	Life Science	Matter and Energy Transformations	Describe the sources of the reactants of photosynthesis and trace the pathway to the products.	215 general plant structure and reproduction 323 general plant life processes 325 general life processes of plants 326 general life processes of plants 331 general plant life processes 334 general plant life processes 336 general plant life processes 342 general plant life processes	7 general plant life process 9 general plant life processes 94 plant processes

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5.3.06.B.2 5-6	Life Science	Matter and Energy Transformations	Illustrate the flow of energy (food) through a community.	85	how energy flows through an ecosystem	
				87	how energy flows in an ecosystem	
				88	explain how energy flows in an ecosystem	
				90	how matter and energy flow in an ecosystem	
				91	explain how energy gets transferred in an ecosystem	
				299	how energy flows in an ecosystem	
				361	explain how matter and energy flow in ecosystems	
5.3.06.C.1 5-6	Life Science	Interdependence	Explain the impact of meeting human needs and wants on local and global environments.	77	effects of human activity on an ecosystem	13 wise decisions about environmental impact of actions
				97	effect of human activity on ecosystems	28 research the environmental impact of products of chemical reactions
				98	explain effects of human activities on ecosystems	
				121	effects of human activities on specific ecosystems	
				128	effects of human activity on specific ecosystem	

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5.3.06.C.2 5-6	Life Science	Interdependence	Predict the impact that altering biotic and abiotic factors has on an ecosystem.	73	temp, precip, sunlight, soil, oxygen	12	abiotic and biotic factors with brine shrimp
				73	main factors that regulate populations in an ecosystem	28	testing pollutants
				74	abiotic factors	30	abiotic factors and brine shrimp
				74	factors that regulate populations in an ecosystem	34	abiotic and biotic factors in your schoolyard
				76	general factors that affect populations in the ocean	86	factors that could lead to extinction
				77	describe general factors regulating population in an ecosystem		
				77	effects of human activity on an ecosystem		
				84	living and non-living parts of ecosystem work together		
				89	how matter and energy flow in an ecosystem		
				94	describe general factors that control population size		
				95	general factors that regulate populations		
				96	identify changes that can lead to extinction of a species		
				97	effect of human activity on ecosystems		

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				97	
					pollutants
				98	
					explain effects of human activities on ecosystems
				99	
					water quality
				121	
					effects of human activities on specific ecosystems
				128	
					effects of human activity on specific ecosystem
				270	
					general factors regulating populations in an area
				295	
					how ecosystems respond to change
				298	
					how ecosystem responds to changes
				298	
					causes for extinction
				317	
					how ecosystem responds to changes
				317	
					factors that regulate populations

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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.	73 temp, precip, sunlight, soil, oxygen 73 main factors that regulate populations in an ecosystem 74 abiotic factors 74 factors that regulate populations in an ecosystem 76 general factors that affect populations in the ocean 77 describe general factors regulating population in an ecosystem 84 living and non-living parts of ecosystem work together 89 how matter and energy flow in an ecosystem 94 describe general factors that control population size 95 general factors that regulate populations 97 pollutants 99 water quality 102 relationships in ecosystems 270 general factors regulating populations in an area	12 abiotic and biotic factors with brine shrimp 28 testing pollutants 30 abiotic factors and brine shrimp 34 abiotic and biotic factors in your schoolyard

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				317 factors that regulate populations	

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5.3.06.D.1 5-6	Life Science	Heredity and Reproduction	Predict the long-term effect of interference with normal patterns of reproduction.	198 asexual reproduction 199 asexual reproduction of cells 200 asexual reproduction 201 asexual reproduction 202 sexual reproduction 203 sexual reproduction—meiosis 204 sexual reproduction—meiosis 206 sexual reproduction 207 sexual and asexual reproduction 208 sexual reproduction 211 asexual vs. sexual reproduction 212 sexual vs. asexual reproduction 244 sexual reproduction 308 mammalian reproductive strategies 311 sexual vs. asexual reproduction 314 sexual and asexual reproduction 315 sexual and asexual reproduction 325 sexual reproduction	101 sexual vs. asexual reproduction

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				326 sexual reproduction	
				327 sexual reproduction	
				337 sexual reproduction	
				338 sexual reproduction	
				339 sexual reproduction	
				340 sexual reproduction	
				343 sexual reproduction	
				344 types of reproduction	
				357 sexual reproduction vs. asexual reproduction	
				359 sexual and asexual reproduction	
				360 sexual and asexual reproduction	
				361 sexual and asexual reproduction	
				363 sexual and asexual reproduction	
				369 sexual and asexual reproduction	
				371 sexual and asexual reproduction	
				372 sexual vs. asexual reproduction	
				373 sexual reproduction	

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
5.3.06.D.2 5-6	Life Science	Heredity and Reproduction	Explain how knowledge of inherited variations within and between generations is applied to farming and animal breeding.	217 make predictions about possible outcomes of genetic combinations 219 make predictions of outcomes of genetic crosses 220 predicting outcomes of genetic crosses 223 making predictions about genetic combinations—punnett squares 224 making predictions about genetic combinations 225 making predictions about genetic crosses 226 making predictions about possible outcomes of genetic crosses 229 make predictions of possible outcomes of genetic crosses 232 making predictions for genetic crosses 234 predicting possible outcomes from genetic crosses 235 making predictions of possible outcomes of genetic crosses	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				236 making predictions of possible outcomes of genetic crosses	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page		
5.3.06.D.3 5-6	Life Science	Heredity and Reproduction	Distinguish between inherited and acquired traits/characteristics.	209	traits that are inherited vs. those that are from the interaction with the environment	71	evolution genetics and environmental factors
				209	environmental influence on genes	73	evolution of traits and environmental factors
				228	distinguish between inherited traits and those influenced by environment		
				242	distinguish between inherited and environmentally influenced traits		
				258	evolution based on genetics		
				262	inherited traits and ones that are acquired		
				269	evolution and genetic variation		
				270	evolution and environmental factors		
				271	genetic variation and environmental factors		
				272	genetic variation		
				273	genetic variation		
				274	genetic variation		
				275	genetic variation		
				311	genetic variation		
				314	genetic variation		

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				315 genetic variation 337 genetic variation and evolution	

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
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.	96 identify changes that can lead to extinction of a species 181 geological time scale 260 geologic time scale 267 catastrophic events that shape Earth 270 catastrophic events in geologic history 273 catastrophic events change Earth's surface 274 extinctions 275 extinctions 289 general history of Earth 293 catastrophic Earth-shaping events 294 Earth/life history 294 geologic time scale 295 extinctions 295 natural events lead to extinction 297 history of Earth and rise of life and catastrophic events 297 geologic time scale 298 catastrophic events in Earth's history 298 causes for extinction	86 factors that could lead to extinction

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page		
				299	extinction of species		
5.3.08.A.1 7-8	Life Science	Organization and Development	Compare the benefits and limitations of existing as a single-celled organism and as a multicellular organism.	33	difference between single and multicellular organisms	38	plant tissues and organs
				44	multi vs. single celled		
				137	difference between multi and single cellular organism		
				139	differences between multi and single celled organisms		
				173	differences between a single-celled organisms and multi-celled organisms		
				174	difference between multi- celled organisms and single-celled organisms		
				189	single celled organism		
				259	all organisms are made of cells		
				353	multi-celled organisms made up of cells		
				358	complex organisms are made of cells		
				368	multi-cellular organisms are made up of cells		

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page		Volume Two Investigation Manual Page	
5.3.08.A.2 7-8	Life Science	Organization and Development	Relate the structures of cells, tissues, organs, and systems to their functions in supporting life.	28	basic life processes	45	life processes of a cell
				29	life processes	48	life processes of cells—food
				32	life processes		
				41	life processes	49	life processes of cells
				138	cell processes—reproduction	53	mitosis and cell cycle
				138	how cells reproduce	56	mitosis and cell division
				139	understand specialized plant and animal cells		
				141	specialized cells		
				159	life processes of cells—active and passive transport		
				161	life processes of cells		
				165	life processes—respiration		
				166	life processes respiration and photosynthesis		
				167	life processes of cells		
				169	understand functions of specialized animal cells		
				171	cell life processes		
				172	life functions of cells—diffusion and osmosis		
				174	life processes of cells—food		
				175	understand functions of specialized cells		

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				175	
				176	
				180	
				181	
				183	
				192	
				196	
				196	
				198	
				199	
				199	
				200	
				201	
				206	
				239	
				354	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				368 understand specialized functions of animal cells	
				386 life processes of cells	

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page		Volume Two Investigation Manual Page	
5.3.08.B.1 7-8	Life Science	Matter and Energy Transformations	Relate the energy and nutritional needs of organisms in a variety of life stages and situations, including stages of development and periods of maintenance.	28	basic life processes	7	general plant life process
				29	life processes	9	general plant life processes
				32	life processes	20	photosynthesis
				41	life processes	45	life processes of a cell
				46	concept of photosynthesis—how plants use energy	46	concept of photosynthesis
				62	biomolecules	48	life processes of cells—food
				68	general understanding of chemical composition of living cells	49	life processes of cells
				69	general understanding of chemical composition of cells	94	plant processes
				71	general understanding of chemical composition of cells	94	photosynthesis
				85	concept of photosynthesis and how plants get energy		
				89	concept of photosynthesis and how plants use energy		
				138	cell processes—reproduction		
				148	concept of photosynthesis		
				159	life processes of cells—active and passive transport		
				161	life processes of cells		

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				162	
				concept of photosynthesis—how plants use energy	
				165	
				life processes—respiration	
				166	
				life processes respiration and photosynthesis	
				167	
				life processes of cells	
				167	
				concept of photosynthesis—how plants use energy	
				171	
				concept of photosynthesis	
				171	
				cell life processes	
				172	
				concept of photosynthesis	
				172	
				life functions of cells—diffusion and osmosis	
				174	
				life processes of cells—food	
				175	
				life processes of cells	
				176	
				life processes of cells	
				180	
				concept of photosynthesis—how bacteria use energy	
				180	
				life processes of cells	
				181	
				life processes of cells—respiration	
				183	
				processes of cells—respiration	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				192	
				196	
				198	
				199	
				215	
				238	
				240	
				322	
				323	
				325	
				326	
				331	
				333	
				334	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				334 general plant life processes	
				336 general plant life processes	
				342 general plant life processes	
				386 life processes of cells	

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page		
5.3.08.B.2 7-8	Life Science	Matter and Energy Transformations	Analyze the components of a consumer's diet and trace them back to plants and plant products.	30	general animal life processes	19	animal life processes
				36	general life processes	37	concept of producer and consumer
				85	how energy flows through an ecosystem		
				86	concept of producers and consumers and decomposers in ecosystems		
				87	how energy flows in an ecosystem		
				88	explain how energy flows in an ecosystem		
				89	concept of producer and consumer and decomposer		
				90	how matter and energy flow in an ecosystem		
				91	explain how energy gets transferred in an ecosystem		
				93	concepts of producer and consumer and decomposer		
				98	concept of producers and consumers and decomposers		
				102	producers and consumers		
				104	general life processes		

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				277	
					use the concepts of consumers in ecosystem
				278	
					concept of consumer
				299	
					how energy flows in an ecosystem
				299	
					producers and consumers
				354	
					general animal life processes
				355	
					general life processes—eating and digestion
				359	
					general animal processes
				360	
					general animal life processes
				361	
					explain how matter and energy flow in ecosystems
				369	
					general animal life processes
				370	
					general animal life processes
				371	
					general animal life processes
				372	
					general animal life processes
				373	
					general animal life functions
				375	
					general animal life processes

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
5.3.08.C.1 7-8	Life Science	Interdependence	Model the effect of positive and negative changes in population size on a symbiotic pairing.	72 identifying parts of an ecosystem and interactions of plants and animals 73 temp, precip, sunlight, soil, oxygen 73 main factors that regulate populations in an ecosystem 74 factors that regulate populations in an ecosystem 74 abiotic factors 76 general factors that affect populations in the ocean 77 describe general factors regulating population in an ecosystem 84 components of ecosystems 84 living and non-living parts of ecosystem work together 86 common ecological relationships 89 how matter and energy flow in an ecosystem 89 components of an ecosystem 90 ecological relationships—food chain	12 abiotic and biotic factors with brine shrimp 28 testing pollutants 30 abiotic factors and brine shrimp 34 abiotic and biotic factors in your schoolyard 37 food webs

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				91	
					food web and food chain
				92	
					food webs
				93	
					food webs and food chains
				94	
					describe general factors that control population size
				94	
					common ecological relationships—symbiosis and predator-prey
				95	
					general factors that regulate populations
				97	
					pollutants
				99	
					water quality
				102	
					food webs
				102	
					interactions of plants and animals
				103	
					food web
				107	
					components of an ecosystem
				109	
					components of an ecosystem
				176	
					describe common ecological relationships among species—symbiosis
				182	
					common ecological relationships—symbiosis
				183	
					common ecological relationships

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				231 describe common ecological relationships	
				270 general factors regulating populations in an area	
				299 food chain	
				313 common ecological relationships—symbiosis	
				316 symbiosis	
				317 ecological relationships	
				317 factors that regulate populations	
				344 ecological relationships	
				346 common ecological relationships	

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page		
5.3.08.D.1 7-8	Life Science	Heredity and Reproduction	Defend the principle that, through reproduction, genetic traits are passed from one generation to the next, using evidence collected from observations of inherited traits.	150	genes and how they interact with immune system	59	genes and inherited traits
				188	genes and genetic make-up	61	dominant vs. recessive traits
				208	concept of genes and heredity	62	genes and inherited traits
				214	general idea of traits	63	dominance vs. recessive
				216	inherited traits	66	genes and inherited traits
				218	concept of genes that are dominant and recessive	72	inherited traits
				219	dominant vs. recessive and how genes affect outward appearance	73	inherited traits
				220	dominant vs. recessive genes	74	inherited traits
				221	genes and inherited traits	76	inherited traits
				222	genes and how they are passed on		
				225	dominant vs. recessive traits		
				227	general patterns of inheritance		
				228	patterns of genetic inheritance		
				229	genes and inherited traits—modes of inheritance		
				230	genes and inherited traits		

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				233	
				traits and genes	
				234	
				traits and genes	
				235	
				genes and inherited traits	
				239	
				genes and heredity	
				240	
				concept of genes and how they relate to DNA and heredity	
				243	
				genes and their link to heredity	
				250	
				human heredity	
				251	
				genes and inherited traits	
				268	
				inherited traits	
				269	
				genetic inheritance	
				271	
				genes and inherited traits	
				272	
				genes and inherited traits	
				273	
				genes and inherited traits	
				275	
				genes and inherited traits	
				311	
				genes and traits/dominant and recessive	
				438	
				genes and inherited traits	
				439	
				genes and inherited traits	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page		
5.3.08.D.2 7-8	Life Science	Heredity and Reproduction	Explain the source of variation among siblings.	70	DNA make up and nucleic acids	54	DNA forms
				71	DNA make up and nucleic acids	66	DNA structure
				139	concept of DNA	67	DNA
				140	concept of DNA	68	DNA structure
				144	DNA	69	DNA
				168	DNA		
				185	concept of DNA		
				196	DNA		
				197	concept of DNA		
				201	DNA		
				202	DNA		
				204	DNA and chromosomes		
				211	DNA		
				217	make predictions about possible outcomes of genetic combinations		
				219	make predictions of outcomes of genetic crosses		
				220	predicting outcomes of genetic crosses		
				221	DNA		
				223	making predictions about genetic combinations—punnett squares		

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				224	
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				241	
				242	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				244	
					DNA structure and function
				246	
					DNA recombination
				247	
					DNA
				248	
					DNA
				249	
					DNA
				250	
					DNA
				252	
					DNA
				259	
					DNA
				262	
					DNA
				265	
					DNA
				270	
					catastrophic events and how they relate to species

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
5.3.08.D.3 7-8	Life Science	Heredity and Reproduction	Describe the environmental conditions or factors that may lead to a change in a cell's genetic information or to an organism's development, and how these changes are passed on.	140 fossils and how they relate to evolution of species 231 natural selection 243 how new traits may become established in a population 257 concept of natural selection 266 natural selection 267 natural selection 268 natural selection 269 natural selection 270 natural selection 271 explain how new traits might get established in a population 271 natural selection 272 natural selection 273 natural selection 275 natural selection 291 natural selection 311 natural selection 363 fossils 365 fossils	74 natural selection 81 evolution

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
5.3.08.E.1 7-8	Life Science	Evolution and Diversity	Organize and present evidence to show how the extinction of a species is related to an inability to adapt to changing environmental conditions using quantitative and qualitative data.	96 identify changes that can lead to extinction of a species 140 fossils and how they relate to evolution of species 231 natural selection 257 concept of natural selection 266 natural selection 267 natural selection 268 natural selection 269 natural selection 270 natural selection 271 natural selection 272 natural selection 273 natural selection 274 extinctions 275 natural selection 275 extinctions 291 natural selection 295 natural events lead to extinction 295 extinctions 298 causes for extinction 299 extinction of species	74 natural selection 81 evolution 86 factors that could lead to extinction

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				311 natural selection	
				363 fossils	
				365 fossils	

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
5.3.08.E.2 7-8	Life Science	Evolution and Diversity	Compare the anatomical structures of a living species with fossil records to derive a line of descent.	47 theory of evolution 181 evolution based on fossils 183 evolution of cells 258 theory of evolution and evidence for it 259 branching diagrams of classification and 259 evolution based on cell evidence and fossils 260 theory of evolution 260 branching diagram of evolution 261 evolution evidence based on anatomy—analogueous structures 261 evidence for theory of evolution 262 evidence for evolution 262 branching diagrams of evolution 263 evidence for evolution—fossils 264 evolutionary history and branching 264 evidence for evolution 265 branching evolutionary diagrams 265 evidence for evolution	74 evolution

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				266	evidence for evolution
				267	branching diagrams
				268	branching diagrams
				293	theory of evolution
				307	branching diagrams of classifications
				307	theory of evolution
				308	branching diagram of shared characteristics
				310	branching diagrams of classification
				318	branching diagrams of evolution
				318	evolution
				323	branching diagrams for classification
				324	theory of evolution
				324	branching diagrams of evolution
				329	evolution
				353	theory of evolution
				356	evolution
				362	theory of evolution
				364	branching diagrams of classification and
				371	theory of evolution

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				373 evolution 375 branching diagrams of classification 376 evolution 377 evolution 378 branching diagrams of evolution	
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.	128 human actions affect resources 335 explain the relationship between the Sun and Earth and patterns of day and night	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two 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.	128 relationship between climate and human activity 259 origin of fossils 259 how fossil record has been used to study history of Earth 263 how fossils are made 264 fossils 264 how fossils can be used to date Earth 265 fossils 267 slow geologic process 267 fossils 270 fossils 282 how fossils are formed 283 explain how rocks and fossils help to tell the age of Earth 284 how rocks are used to tell age 285 how fossil record is used to understand Earth's history 286 fossil record used for understanding Earth's history 286 how rocks and fossils help date Earth	77 how rocks are used to tell age 78 how rocks help date Earth 79 how rocks help tell age of Earth 84 how fossils tell about Earth's history 84 geologic history 85 using fossils to learn about Earth's history 86 fossil record

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				287	
				287	
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				297	
				297	
				299	

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two 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.	267 evolution of land features from erosion	78 forces that shape Earth—erosion
5.4.06.B.4 5-6	Earth Systems Science	History of Earth	Describe methods people use to reduce soil erosion.	77 effects of human activity on an ecosystem 97 effect of human activity on ecosystems 98 explain effects of human activities on ecosystems 121 effects of human activities on specific ecosystems 128 effects of human activity on specific ecosystem	
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.	87 how materials are recycled geologically 283 explain how rocks are broken down and turned into soil	

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two 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.	87 263 283 283	how materials are recycled geologically how rocks are formed and types of rocks explain how rocks are broken down and turned into soil explain how rocks are formed and the major types of rock

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two 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.	263 how rocks are formed and types of rocks 264 how fossils can be used to date Earth 283 explain how rocks and fossils help to tell the age of Earth 283 explain how rocks are formed and the major types of rock 284 how rocks are used to tell age 286 how rocks and fossils help date Earth 287 how rocks and fossils are used to date Earth 297 how rocks and fossils are used to determine the age and geological history of Earth 299 fossil record	77 how rocks are used to tell age 78 forces that shape Earth—erosion 78 how rocks help date Earth 79 how rocks help tell age of Earth 84 geologic history
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.	289 theory of plate tectonics 290 theory of plate tectonics 291 theory of plate tectonics 292 plate tectonics 297 extinctions	

**Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two 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.	267 evolution of land features from erosion 283 explain how rocks are broken down and turned into soil	78 forces that shape Earth—erosion
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.	108 know effects on climate 108 know that weather and climate involve the transfer of energy 109 effect of latitude on climate 110 effects on climate of water and latitude 110 climate involves transfer of energy 117 know effects on climate 118 effects on climate 123 effects of latitude and elevation on climate 125 effect of elevation and latitude on climate	

Correlation to 2009 New Jersey Core Curriculum Content Standards for Science
CPO Science Life Science (Middle School)

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two 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.	72 identifying parts of an ecosystem and interactions of plants and animals 73 temp, precip, sunlight, soil, oxygen 73 main factors that regulate populations in an ecosystem 74 factors that regulate populations in an ecosystem 74 abiotic factors 76 general factors that affect populations in the ocean 77 describe general factors regulating population in an ecosystem 84 components of ecosystems 84 living and non-living parts of ecosystem work together 85 how energy flows through an ecosystem 87 how energy flows in an ecosystem 88 explain how energy flows in an ecosystem 89 components of an ecosystem	12 abiotic and biotic factors with brine shrimp 28 testing pollutants 30 abiotic factors and brine shrimp 34 abiotic and biotic factors in your schoolyard

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				89	
					how matter and energy flow in an ecosystem
				90	
					how matter and energy flow in an ecosystem
				91	
					explain how energy gets transferred in an ecosystem
				94	
					describe general factors that control population size
				95	
					general factors that regulate populations
				97	
					pollutants
				99	
					water quality
				102	
					interactions of plants and animals
				107	
					components of an ecosystem
				109	
					components of an ecosystem
				176	
					describe common ecological relationships among species—symbiosis
				270	
					general factors regulating populations in an area
				299	
					how energy flows in an ecosystem
				317	
					factors that regulate populations

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				361 explain how matter and energy flow in ecosystems	
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.	77 effects of human activity on an ecosystem 97 effect of human activity on ecosystems 98 explain effects of human activities on ecosystems 121 effects of human activities on specific ecosystems 128 effects of human activity on specific ecosystem	
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.	128 human actions affect resources 335 explain the relationship between the Sun and Earth and patterns of day and night	

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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.	128 relationship between climate and human activity 259 how fossil record has been used to study history of Earth 264 how fossils can be used to date Earth 267 catastrophic events that shape Earth 270 catastrophic events in geologic history 273 catastrophic events change Earth's surface 283 explain how rocks and fossils help to tell the age of Earth 283 explain how rocks are broken down and turned into soil 284 how rocks are used to tell age 285 how fossil record is used to understand Earth's history 286 how rocks and fossils help date Earth 286 fossil record used for understanding Earth's history 287 how rocks and fossils are used to date Earth	77 how rocks are used to tell age 78 how rocks help date Earth 79 how rocks help tell age of Earth 84 geologic history 84 how fossils tell about Earth's history 85 using fossils to learn about Earth's history 86 fossil record

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				287	
				288	
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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				297 how rocks and fossils are used to determine the age and geological history of Earth	
				298 catastrophic events in Earth's history	
				299 fossil record	

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CPO Science Life Science (Middle School)**

Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two 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.	128 relationship between climate and human activity 259 how fossil record has been used to study history of Earth 267 slow geologic process 267 catastrophic events that shape Earth 267 evolution of land features from erosion 270 catastrophic events in geologic history 273 catastrophic events change Earth's surface 285 how fossil record is used to understand Earth's history 286 fossil record used for understanding Earth's history 287 how fossils help give clues about Earth's history 288 how fossils are used to understand Earth's history 289 general history of Earth 289 slow geologic processes 290 how fossils are used to understand Earths' history	78 forces that shape Earth—erosion 84 how fossils tell about Earth's history 85 using fossils to learn about Earth's history 86 fossil record

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Standard #: Grade level	Standard	Strand	Cumulative Progress Indicator	Volume One Student Text Page	Volume Two Investigation Manual Page
				291 how fossils are used to understand Earth's history 291 slow geologic processes 292 how fossils help understand Earth's history 293 how fossils help understand history of Earth 293 catastrophic Earth-shaping events 294 how fossils help to understand the history of life on Earth 294 Earth/life history 297 history of Earth and rise of life and catastrophic events 297 fossil record is used to understand history of Earth 298 catastrophic events in Earth's history	
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.	97 effects of pollution on ground and soil 283 explain how rocks are broken down and turned into soil	

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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.	88 describe water cycle and different types of water on Earth 88 water cycle	
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.	88 describe water cycle and different types of water on Earth 88 water cycle 88 describe water cycle and different types of water on Earth 88 water cycle 108 know that weather and climate involve the transfer of energy 110 climate involves transfer of energy	

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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.	87 human impact on natural cycles 88 how humans affect resources 88 human impact on carbon cycle 97 effects of pollution on ground and soil 97 describe origins and effects of air pollution 97 origins and effects of water pollution 99 water pollution 100 relationship between humans and hydrosphere 100 water pollution 121 climate and human activity 129 relationships between climate and human activity	
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.	267 evolution of land features from erosion	78 forces that shape Earth—erosion