GLENCOE CORRELATION
SCIENCE: AN INTRODUCTION TO
THE LIFE, EARTH, AND PHYSICAL SCIENCES
MISSOURI
Science Framework, Grades 5-8

OBJECTIVES		PAGE REFERENCES
I. Scientific Inquiry A. Processes of Scientific Inquiry		
What All Students Should Be Able To Do *By the end of grade 8, all students should be able to*		
1.a.	apply mathematical procedures to investigations and data sets in order to determine patterns, relationships, and predictions (1.6)	SE: 547-549 *Design Your Own Experiment* 160-161, 330-331, 356-357, 418-419 *Activity 7-1* 183, *Activity 10-1* 271 *Problem Solving* 163
1.b.	find the mean and median of sets of data, calculate percent and ratios, and determine the units in which the values should be expressed (1.8; 4.1)	Calculating the mean of sets of data and determining the units in which values should be expressed are found in: SE: *Activity 10-1* 271, *Activity 12-1* 326 *Problem Solving* 76 *Using Math* 240 TWE: TFYI 240
2.a.	read analog and digital meters that measure length, volume, mass, time, and temperature; use microscopes, cameras, and tape recorders for capturing information; and use computers to locate, select, identify, collect, store, manipulate, and receive information (1.4; 1.8)	SE: 14-16, 53 #4, 560, 562-566 *Science Online* 15 *Activity 9-2* 257, *Activity 10-1* 271, *Activity 12-1* 326 *Design Your Own Experiment* 302-303, 330-331, 472-473
3.a.	using appropriate technologies, inspect, disassemble, and reassemble simple mechanical devices; assess what the various parts are for and what the effect would be of removing or changing individual parts; predict the most likely sources of malfunctions; and select and apply appropriate strategies to correct or prevent such malfunctions (1.6; 3.1; 3.2; 3.3)	Certain devices and their components are discussed in: SE: 310-311 *Problem Solving* 305 *Using Technology* 308
4.a.	locate, read, listen to, and view various forms of information to interpret and evaluate; organize information in text, tables, and graphs; and use a variety of methods, forms, and technologies to describe the meaning and implications of the information (1.4; 1.5; 1.6; 1.7; 1.8; 2.1; 2.7)	SE: 542-551 *Activity 1-1* 11 *Internet Project* 206-207, 372-373, 522-523 *Science & Society* 82-83, 284-285 *Skill Builder* 83, 285 TWE: S 206, 522

OBJECTIVES		PAGE REFERENCES
I.	**Scientific Inquiry B. Investigations**	
1.a.	design and conduct investigations that include an adequate number of repeated trials, unbiased sampling, accurate measurement and record-keeping, and a comparison to a control (1.3; 3.1; 3.2; 3.3; 3.4)	SE: *Design Your Own Experiment* 24-25, 78-79, 94-95, 160-161, 246-247, 280-281, 356-357, 418-419, 472-473
2.a.	analyze and evaluate arguments based on very small sets of data, experiments with few repeated trials, biased samples, or samples for which there was no control sample (1.5; 1.7; 3.4; 3.7)	Analyzing and evaluating data are found in: SE: *Activity 1-1* 11 *MiniLAB* 75, 273 *Design Your Own Experiment* 94-95, 450-451 *Skill Builder* 83, 167, 285
II.	**Scientific Relevance A. The Nature of Technology**	
1.a.	analyze, evaluate, and communicate both benefits and possible risks to health, society, and the environment associated with investigations and technological advances reported in the media (1.1; 1.2; 1.7; 1.9; 2.1; 2.2; 2.3; 3.1; 3.5; 3.6; 3.8; 4.1; 4.3; 4.4; 4.6)	SE: *Science & Society* 82-83, 100-101, 134-135, 166-167, 200-201, 230-231, 250-251, 284-285, 424-425, 488-489 *Skill Builder* 83, 101, 135, 167, 489
2.a.	identify and analyze ways in which advances in science and technology have affected each other and society (1.1; 1.2; 1.6; 1.7; 1.9; 3.8)	SE: *Science & Society* 82-83, 100-101, 134-135, 166-167, 200-201, 230-231, 250-251, 284-285, 338-339, 366-367, 424-425, 488-489
II.	**Scientific Relevance B. Historical Perspective**	
1.a.	identify the background qualifications and training that are needed in order to have careers related to science and technology (4.8)	SE: *People in Science* 84, 165, 490 *Career Connection* 84, 165 TWE: CC 84, 165, 490
2.a.	describe some of the funding sources that can be used to finance education and training in science and technology (1.2; 1.4; 1.7)	A discussion of school funding sources can be met during teacher/classroom discussion.
II.	**Scientific Relevance C. Science as a Human Endeavor**	
1.a.	evaluate possible risks to classmates, research subjects, or the community associated with their own independent investigations (1.2; 1.4; 1.7; 1.10; 4.3; 4.4; 4.7)	SE: 22, 527-528 TWE: A 22 C 23 SP 24, 40, 78, 94, 104, 150
2.a.	analyze and evaluate the economic, political, social, ethical, and aesthetic constraints that might affect progress with specific scientific technological endeavors (3.1; 3.4; 3.5; 3.6; 3.8; 4.1)	SE: *Science & Society* 82-83, 100-101, 134-135, 166-167, 200-201, 230-231, 250-251, 284-285, 338-339, 394-395, 424-425, 488-489 *Using Technology* 98, 413, 454
III.	**Matter and Energy A. Properties, Characteristics and Structures of Matter**	
1.a.	use laboratory investigations to demonstrate the formation of new materials and demonstrate the conservation of matter (1.3; 1.6; 2.4)	SE: 213-214 *Activity 9-2* 257 TWE: CB 213, 254 D 214

OBJECTIVES		PAGE REFERENCES
2.a.	identify those properties that are characteristic of a substance and those that depend on the amount of substance present (1.2; 1.6; 1.8; 2.3; 3.2; 3.3)	SE: 237-248 *Problem Solving* 216 *Explore Activity* 237 *Using Math* 240 *Using Technology* 244 *MiniLAB* 239 *Design Your Own Experiment* 246-247
3.a.	investigate changes of state of water and use the particulate model to describe these changes (1.1; 1.2; 1.3; 1.6; 1.7; 3.2; 3.3)	The changing states of water are discussed in: SE: 241, 253 TWE: VL 253
4.a.	investigate property changes as a result of changes in the physical state of a substance (1.1; 1.2; 1.3; 1.6; 1.7; 3.2; 3.3)	SE: 252-254, 256 TWE: SB 252 VL 253 CB 253 DI 254 RP 254
4.b.	investigate how the rate of change of state is affected by the addition or removal of heat (1.1; 1.2; 1.3; 1.6; 1.7; 3.2; 3.3)	Change of state of a substance is discussed in: SE: 252-254, 256 TWE: SB 252 VL 253 CB 253 DI 254 RP 254
5.a.	separate natural or synthetic substances into their component compounds (1.3; 1.4; 3.5; 4.6; 4.7)	SE: 225-229 *Activity 8-2* 226 *MiniLAB* 228 *Using Technology* 225 TWE: VL 227
5.b.	investigate and report why certain components of mixtures are reported to the public and how they are used to monitor health problems and/or environmental pollutants (1.2; 1.3; 1.8; 2.1; 3.2; 3.3; 4.1)	SE: *Science & Society* 230-231, 250-251 TWE: CB 251
6.a.	identify chemical changes in common objects as a result of interactions with heat, light, air (1.1, 1.6, 3.1, 3.5)	SE: 255-258 *MiniLAB* 255 *Activity 9-2* 257 TWE: D 254
7.a.	identify the components of a solution, demonstrating the use of ratios and percents in preparing different concentrations of the solution, and compare the properties of different concentrations of the solution (1.2; 1.6; 1.8; 3.1; 3.5)	SE: *Activity* 246-247 *Using Technology* 244 TWE: CB 245
III.	**Matter and Energy B. Characteristics, Forms and Sources of Energy**	
1.a.	measure and quantitatively compare the heat changes involved in an energy transformation (1.2; 1.3; 1.6; 1.8; 2.4; 3.5)	Energy transformation is discussed in: SE: 320-322 *Design Your Own Experiment* 330-331
2.a.	identify the wavelengths and energies in the visible part of the electromagnetic spectrum (1.3; 1.6; 3.5)	This objective can be met during teacher/class discussion.

OBJECTIVES		PAGE REFERENCES
2.b.	identify and discuss the use/misuse of the non-visible part of the electromagnetic spectrum (1.7; 1.10; 2.4; 3.8; 4.7)	SE: *Using Technology* 335, 454
3.a.	understand the advantages and disadvantages of series and parallel circuits (1.2; 1.3; 1.4; 1.6; 1.10; 3.7)	Electric circuits are discussed in: SE: 351-355 *MiniLAB* 352 *Design Your Own Experiment* 356-357 TWE: VL 352 CB 353
3.b.	compare various sources of energy for the generation of electric power (1.10; 2.4; 3.8; 4.7)	SE: *Science & Society* 338-339, 366-367 TWE: CB 366 TC 367
4.a.	predict specific conditions that will cause static electricity (1.2; 1.6; 2.4; 3.5)	SE: 346-350 *MiniLAB* 348 *Problem Solving* 349 TWE: STQ 349 VL 348
4.b.	understand applications and hazards of static electricity (1.10; 2.4; 3.8; 4.7)	SE: 350 *Problem Solving* 349 TWE: B 349
5.a.	identify sources of chemical energy used in commercial and industrial activity and in life processes (1.7; 1.10; 2.4; 3.8; 4.7)	SE: 320-322 TWE: TFYI 321 CB 322
III.	**Matter and Energy C. Interactions of Matter and Energy**	
1.a.	design, conduct, and communicate about an investigation that shows the relationship between energy and changes in matter (1.3; 1.6; 2.1; 2.7; 3.8)	Changes in matter are discussed in: SE: 252-258 *MiniLAB* 255 *Activity 9-2* 257 TWE: DI 254
2.a.	discuss the roles of radiation, convection, and conduction in weather changes (1.2; 1.6; 2.3; 2.4; 3.5; 4.6)	SE: 336-337 TWE: CB 336 TCO 336
3.a.	explain how an energy source interacts with and causes changes in different materials (1.3; 2.1; 2.4; 3.5; 4.1)	SE: 320-322, 328-337 *MiniLAB* 329, 333 *Design Your Own Experiment* 330-331 *Using Technology* 335 TWE: CB 334
4.a.	explain the characteristics of a substance that makes it a good conductor or insulator (1.3; 2.1; 2.4; 3.5; 4.1)	SE: *Skill Builder* 337 TWE: C 329 CB 335
5.a.	identify waves as mechanical or electromagnetic and identify common wave properties (1.2; 1.6; 1.7; 3.5)	SE: 438-441, 484-485 *Problem Solving* 441 TWE: CB 482 TFYI 483
5.b.	discuss how waves interact with barriers and each other (1.6; 2.3; 3.5)	TWE: CB 485

OBJECTIVES		PAGE REFERENCES
IV.	**Force, Motion and Mechanical Energy A. Relative Motion**	
1.a.	use appropriate technologies to measure and compute the direction and magnitude of the forces causing the motions of common activities (1.1; 1.3; 1.4; 3.5)	The relationship between forces and motion is discussed in: SE: 275-283 *Design Your Own Experiment* 280-281 TWE: E 277 D 278 TCO 278
2.a.	organize data concerning the direction and position of a moving object with respect to time in graphical form (1.1; 1.2; 1.4; 1.8; 3.1; 3.5)	SE: 270 *Activity* 271
3.a.	explain how an object's acceleration is affected by outside forces and its mass (3.1; 3.3; 4.1)	SE: 277-278 TWE: E 277 D 278 TCO 278
IV.	**Force, Motion and Mechanical Energy B. Types and Properties of Forces and Motion**	
1.a.	use technologies to determine the direction of acceleration and the net force for an object moving in a circle (1.3; 1.4; 1.6; 1.10; 4.1)	TWE: RP 276
2.a.	recognize and define the forces necessary for an object to move or be in equilibrium (1.4; 1.7; 2.1; 3.5; 3.7; 4.1)	SE: 276-277, 279-282 *Design Your Own Experiment* 280-281
3.a.	compare and describe the gravitational force between two objects (1.4; 1.7; 2.1; 3.1; 4.1)	Gravitational force is discussed in: SE: 264-266 *Problem Solving* 266 TWE: IQ 265
IV.	**Force, Motion and Mechanical Energy C. Interactions of Forces and Motions**	
1.a.	interpret and explain the relationship among kinetic energy, potential energy, and mechanical advantage (1.6; 1.8; 2.1; 2.3; 2.5; 4.1)	The relationship between kinetic energy and potential energy is described in: SE: 322-327 *Activity 12-1* 326 *Problem Solving* 325 TWE: D 323 RP 324
1.b.	analyze the changes in kinetic and potential energy in common activities (1.5; 4.1; 4.10)	SE: 322-327 *Activity 12-1* 326 *Problem Solving* 325 TWE: D 323 RP 324
2.a.	determine the amount of work done when an object is moved or when a task is performed (1.5; 4.1; 4.10)	SE: 291-295 *Explore Activity* 291 *MiniLAB* 294 TWE: SB 292 R 294

OBJECTIVES		PAGE REFERENCES
3.a.	explain and demonstrate how common tools are simple machines and discuss the forces and motions involved (1.1; 1.6; 1.10; 3.1; 3.6; 4.1)	SE: 296-306 *MiniLAB* 297 *Design Your Own Experiment* 302-303 *Problem Solving* 305 TWE: D 299 A 300 DI 301 TFYI 304 R 305
V.	**Universe A. Characteristics of the Universe**	
1.a.	use visual and mathematical aids to determine the approximate locations of stars in the constellations (1.4; 2.2)	Stars and constellations are found in: SE: 396-400 *MiniLAB* 397 *Using Technology* 398 TWE: R 399
1.b.	create a model in which the same scale is used to depict the distances between objects and calculate the time required to travel a direct path to them from Earth (1.6; 2.1)	Distances in space and creating a model of the solar system are found in: SE: 384-385, 403 #1 *Problem Solving* 386 *Using Math* 392
1.c.	interpret and evaluate information related to distances from our solar system to other points in our galaxy and the universe (1.2; 1.7; 2.7; 3.5; 4.1)	Distances in the solar system and the galaxies are discussed in: SE: 384-385, 399 *Problem Solving* 386
2.a.	use a variety of resources to compare and contrast the physical properties of planets (1.8; 2.3; 3.5)	SE: 386-392 *Design Your Own Experiment* 390-391 TWE: CU 389 VL 388
3.a.	use a variety of visual aids to locate the position of the solar system in the Milky Way Galaxy (1.5; 1.6; 2.2; 2.3; 4.1)	SE: 399-400 TWE: CB 399
V.	**Universe B. Motions of the Universe**	
1.a.	conduct an investigation that demonstrates planetary orbits and apply the processes and knowledge learned to patterns within the solar system (1.3; 1.6; 3.5)	The earth's orbit is discussed in: SE: 379 TWE: SB 378
2.a.	use a variety of methods, forms, and technologies to describe Earth (1.4; 2.7; 3.5; 4.1)	SE: 378-379, 389
3.a.	evaluate how revolution, rotation, and tilt of the Earth influences the amount of sunlight that reaches the surface (1.7; 1.8)	SE: 378-379 TWE: RP 379 A 380
4.a.	explain such phenomena as lunar and solar eclipses and moon phases (1.6; 2.4; 2.5)	SE: 380-383 *Activity 14-1* 381 *MiniLAB* 382 TWE: B 280 VL 382
5.a.	explain how planetary orbits are affected by gravitational forces of other planets and the sun (1.5; 1.7; 3.3; 4.6)	SE: 486-487 TWE: TCO 386 TPK 385

OBJECTIVES		PAGE REFERENCES
V.	**Universe C. Tools of Space Exploration**	
1.a.	discuss how information received from space probes has either confirmed or modified scientific theories concerning conditions on other planets (1.7; 2.4; 3.1; 3.5; 4.1)	The use of space probes and new information about space are discussed in: SE: *Using Technology* 398 *Science Online* 398 TWE: E 388
2.a.	use an illustration of the electromagnetic spectrum to describe the relationship between wavelength, energy, and frequency (1.4; 2.7; 3.5; 4.1)	Some of the characteristics of electromagnetic waves may be inferred by analogy to mechanical waves: TWE: 483
3.a.	identify common products that have been developed as a result of research associated with space exploration	TWE: CB 394
VI.	**Earth Systems A. Physical Systems**	
1.a.	use appropriate technology and other resources to select and organize information about atmospheric properties (1.4)	SE: 496-502 *MiniLAB* 498 *Activity 18-1* 501 *Problem Solving* 500 TWE: R 500
2.a.	discover and evaluate patterns and relationships in the properties of the atmosphere and their structure; develop strategies to predict weather changes (1.7; 3.2)	SE: 496-502, 503-511 *MiniLAB* 498, 504 *Activity 18-1* 501 *Design Your Own Experiment* 508-509 *Problem Solving* 500 *Science & Society* 512-513 *Internet Project* 522-523 TWE: D 499 A 510 S 522
3.a.	conduct research using chemical testing and evaluate the information to classify a variety of rocks and minerals (1.2; 1.6; 3.5)	SE: *MiniLAB* 411 TWE: CB 412, 421 Testing physical properties of minerals is discussed in: SE: 408-412 *MiniLAB* 411 *Problem Solving* 412 TWE: SJ 410 CB 412
4.a.	use appropriate technology and other resources to locate, select, and organize information to determine relative age of mineral, rock, and soil samples or associated events that may have occurred (1.4; 1.6; 1.10)	SE: 129-130, 136-138, 452-455
5.a.	construct models and geological profiles to demonstrate the age relationship of sedimentary rock layers (1.8)	Sedimentary rocks are described in: SE: 420-423 *MiniLAB* 422 TWE: CB 420 CU 421

OBJECTIVES		PAGE REFERENCES
6.a.	organize data, information, and ideas about human activity and natural events that affect the quality of water supplies for analysis and presentation (1.8)	SE: 190-191 *Explore Activity* 467 TWE: TFYI 191
7.a.	reason inductively about Missouri's mineral deposits and their relationship to the economy and deductively about environmental concerns – past, present, and future (3.5)	Uses of rocks and minerals and the impact on the environment are discussed in: SE: *Using Technology* 413 *Science & Society* 424-425
8.a.	collaborate with others in developing and clarifying perspectives by applying knowledge, measurement, and concepts of the hydrosphere, lithosphere, and atmosphere (2.4; 4.6)	Information on the lithosphere, hydrosphere, and atmosphere is found in: SE: 449, 452-455, 456-461, 471-474, 481-487, 496-502 *MiniLAB* 458, 484, 498 *Using Technology* 454, 485 *Design Your Own Experiment* 472-473, *Activity 18-1* 501 *Problem Solving* 500 TWE: R 460
9.a.	using appropriate technology, identify, analyze, and evaluate causes of pollution and its effect on an area; use this information to create a model demonstrating the complexity of pollution (1.4; 1.6; 1.8; 2.4; 3.5; 4.1)	Causes and effects of pollution in an area are discussed in: SE: 187, 190-194, 194 #4, 488-489, 497 TWE: R 193 CB 489 VL 497 C 497
VI.	**Earth Systems B. Processes of Systems**	
1.a.	exchange information, questions, and ideas with others to discuss the effects of energy transfer on the water cycle (2.3)	The water cycle is found in: SE: 468-469
2.a.	organize data, information and ideas into useful forms for analysis and summary to predict climatic patterns associated with large bodies of water (1.8)	Information on climatic patterns associated with large bodies of water is found in: SE: 483, 514-515 TWE: CD 515
3.a.	conduct an investigation to develop and evaluate information and ideas concerning the theory of plate tectonics; use landform models and maps to analyze the distribution of global features and geological phenomena such as volcanoes and earthquakes (1.3; 1.8)	SE: 437-445, 448-455, 456-461 *Explore Activity* 437 *Activity 16-1* 444 *Problem Solving* 441 *Science & Society* 446-447 *MiniLAB* 442, 458 *Design Your Own Experiment* 450-451 *Using Technology* 454 TWE: CU 460 E 439
4.a.	conduct research to develop and evaluate information and ideas of the human impact on water resources (1.2)	Human impact on water resources is found in: SE: 190-191 *Science & Society* 488-489 TWE: CB 489

OBJECTIVES		PAGE REFERENCES
4.b.	design and conduct field or laboratory investigations to study types of soil; recognize how the different types of soil lead to differences in drainage, percolation for septic systems, and groundwater quality (1.3; 1.6; 3.1)	SE: *MiniLAB* 154 *Design Your Own Experiment* 472-473 TWE: CB 473
5.a.	design and conduct investigations to study the effects of solar radiation, tilt of the Earth's axis, and the water cycle on patterns of weather and the climate on Earth (1.3)	The effects of solar radiation, tilt of the Earth's axis, and the water cycle on patterns of weather and the climate on Earth are found in: SE: 503-505, 514-515 *MiniLAB* 504
VII.	**Living Systems A. Structure/Function/Characteristics**	
1.a.	develop and use a classification key that can be used to place common organisms into proper kingdoms (1.1; 2.4; 3.3; 3.7)	SE: 45-53 *Activity 2-2* 48 *MiniLAB* 46 *Problem Solving* 47 TWE: CB 52 CU 52 R 52
2.a.	use appropriate technology and other resources to get a visual understanding of the cell as the basic unit of life. Design and conduct investigations to explain why organisms need specialized cells (1.2; 1.3; 1.4; 2.7)	SE: 61-73, 74-81 *MiniLAB* 69, 75 *Explore Activity* 61 *Activity 3-1* 71 *Design Your Own Experiment* 78-79 *Problem Solving* 76 *Using Technology* 64 TWE: CB 76
3.a.	use a variety of technologies and resources to conduct inquiries into a living system and describe the interaction of components and organisms within any living system (1.3; 1.7)	SE: 148-156, 157-164 *Activity 6-1* 150 *Design Your Own Experiment* 160-161 *Problem Solving* 163 *MiniLAB* 154, 158 *Using Technology* 159 TWE: DI 162
4.a.	use appropriate technology to get a visual understanding of organelles; conduct investigations and research on the structure and function of various cell organelles (1.2; 1.4; 2.7)	SE: 62-73 *Using Technology* 64 *MiniLAB* 69 *Activity 3-1* 71 TWE: TFYI 67 A 67
VII.	**Living Systems B. Life Processes**	
1.a.	design and conduct investigations and organize data, information, and ideas about how energy is needed for living cells to carry out all the processes of life (1.2; 1.3; 1.6; 3.1; 4.6)	Energy needed for cells to carry out processes is discussed in: SE: 70, 73
2.a.	conduct simple experiments with green plants to determine the requirements and products of photosynthesis (1.3; 1.8)	Photosynthesis is discussed in: SE: 72-73 TWE: VL 72

OBJECTIVES		PAGE REFERENCES
3.a.	organize information into a model that demonstrates the interaction of systems of cells, tissues, organs, and organ networks in a complex multicellular organism through chemical and physical processes (1.2; 1.5; 2.1; 2.3; 2.4)	Cell organization is discussed in: SE: 80-81 TWE: IS 80 R 80 VL 80
VII.	**Living Systems C. Diversity**	
1.a.	review and revise the definition of a species in order to improve understanding and clarity and apply the definition to sample situations (1.6; 2.2; 2.3; 4.1)	Species is described in: SE: 45 *Explore Activity* 47 TWE: CB 47 The origin of new species is discussed in: SE: 128-129 TWE: VL 129
2.a.	design and conduct investigations and research on how an organism is uniquely adapted to a particular function for enhancing its ability to survive (1.2; 1.3; 1.4; 2.7; 4.6)	SE: 120-122, 124-125 *MiniLAB* 122 *Design Your Own Experiment* 126-127 TWE: CB 120
VII.	**Living Systems D. Reproduction/Heredity**	
1.a.	present a visual representation of variation in offspring due to sexual reproduction or how asexual reproduction results in genetic clones of the parent (1.3; 1.8; 3.5; 4.6)	Asexual and sexual reproduction are found in: SE: 92-99 *MiniLAB* 92 *Design Your Own Experiment* 94-95 *Using Technology* 98 *Science & Society* 100-101 TWE: CB 93 CU 98
2.a.	use models to demonstrate how genetic material is transmitted and how gene traits are expressed in offspring (1.3; 2.2)	SE: 106-111 *MiniLAB* 110 TWE: E 108 R 109
3.a.	organize data, information, and ideas into a visual representation of the patterns and relationships involved in the chromosome contributions of gametes in sexual reproduction (1.6; 1.7; 1.10; 2.1; 3.2; 4.6)	SE: 96-97, 99 #5 TWE: USW 97
4.a.	organize data, information, and ideas to explain the stages through which a fertilized egg or seed changes into its adult form (1.2; 1.4; 1.8; 2.3)	Changes that occur in a seed after fertilization are described in: SE: 98-99
VII.	**Living Systems E. Adaptation/Evolution**	
1.a.	research the evolutionary adaptations of a number of present-day organisms and explain how these adaptations contributed to the survival of the organism (1.2)	SE: 120-122, 124-125 *MiniLAB* 122 TWE: CU 121
2.a.	evaluate information, ideas, arguments, and products to determine patterns, relationships, perspectives, and credibility relating to changes in populations due to environmental conditions (1.5; 1.7; 1.8; 2.1; 2.4; 2.6)	SE: 157-164 *MiniLAB* 158 *Using Technology* 159 *Design Your Own Experiment* 160-161 *Problem Solving* 163 TWE: DI 162

OBJECTIVES		PAGE REFERENCES
3.a.	present ideas, opinions, and arguments in an organized and convincing way stating the differences and similarities between successful populations and their environments (2.4)	Populations and their environments are discussed in: SE: 157-164 *MiniLAB* 158 *Using Technology* 159 *Design Your Own Experiment* 160-161 *Problem Solving* 163 TWE: DI 162
4.a.	organize information and data to demonstrate the appearance, diversification and extinction of many lifeforms (1.5; 2.2)	SE: 118-122, 124-133, 136-142 *MiniLAB* 122, 130 *Activity 5-2* 139 *Using Technology* 137 *Design Your Own Experiment* 126-127 *Problem Solving* 137 *Science Online* 141 TWE: DI 141 USW 141
VIII.	**Ecology A. Interactions**	
1.a.	relate trophic levels and food webs to the flow of energy in an ecosystem (1.4; 1.6; 2.7; 3.5; 4.6)	SE: 168-169, 170 #1-#4 *Using Computers* 170 TWE: CB 169 VL 169 SB 168
1.b.	trace energy repossessions within specific food webs (1.4; 1.6; 2.7; 3.5; 4.6)	Energy flow through a food web is described in: SE: 168-169, 170 #1-#4 *Using Computers* 170 TWE: CB 169 VL 169 SB 168
2.a.	relate energy flow and matter recycling to each step of a food web (1.4; 1.6; 1.8; 2.1; 3.5; 4.6)	SE: 169-170 TWE: AS 170
2.b.	explain the flow of matter and energy through an ecosystem and living systems (1.4; 1.6; 1.8; 2.1; 3.5; 4.6)	SE: 168-169, 170 #1-#4 *Using Computers* 170 TWE: CB 169 VL 169 SB 168 AS 170
3.a.	speculate on the environmental changes that would have global impact and discuss the mechanisms by which the changes become global (1.1; 1.2; 1.3; 2.1; 3.5; 4.6)	Environmental changes and their impact are discussed in: SE: 156, 185-194 *Design Your Own Experiment* 188-189 TWE: CD 190 CB 192 R 193 AS 156
4.a.	apply the knowledge learned to describe examples of interacting organisms and classify them as beneficial, competitive, or detrimental to each other for survival (1.7)	SE: 162-163 TWE: CB 162 SJ 162

OBJECTIVES		PAGE REFERENCES
VIII.	**Ecology B. Changes**	
1.a.	explain how the variation of organisms within a certain population increases the likelihood of survival of the species (1.2; 1.3; 1.10; 2.1; 3.8; 4.1)	SE: 124-125 *Design Your Own Experiment* 126-127 TWE: A 125
2.a.	identify environmental changes that affect the diversity and balance of an ecosystem and suggest alternative approaches that are less intrusive (1.2; 1.4; 1.9; 2.1; 3.2; 3.3; 3.5; 4.1)	SE: 142, 156, 185-194, 195-199 *Design Your Own Experiment* 188-189 *MiniLAB* 196 *Problem Solving* 197 *Science & Society* 200-201 TWE: VL 196 C 186

Codes Used for TWE Pages

A	Activity
AS	Assessment
B	Brainstorming
C	Community Connection
CB	Content Background
CC	Career Connection
CD	Cultural Diversity
CU	Check for Understanding
D	Demonstration
DI	Discussion
E	Enrichment
IQ	Inquiry Question
IS	Inclusion Strategies
R	Reteach
RP	Revealing Preconceptions
S	Summary
SB	Section Background
SJ	Science Journal
SP	Safety Precautions
STQ	Student Text Question
TC	Teaching the Content
TCO	Theme Connection
TFYI	Teacher FYI
TPK	Tying to Previous Knowledge
USW	Using Science Words
VL	Visual Learning