IDAHO
Science Standards Grades 6-8
Science Level Red © 2005

STANDARDS	PAGE REFERENCES
617. SCIENCE STANDARDS - GRADE 6, SECTIONS 618 THROUGH 628.	
618. UNIFYING CONCEPTS OF SCIENCE.	
01. Understand systems, order, and organization.	
a. Know that a system is an organized group of related objects that form a whole.	SE: 8-9, 448-455, 487, 618-625 *Launch Lab* 617 *Lab* 626 TWE: QD 8 SJ 8 ACT 619 VL 449
b. Describe the function of each human body system.	SE: 560-572, 574-575 *Lab* 573, 580-581 *Launch Lab* 559 TWE: DI 486 CU 572 LD 562 MM 571 R 572
02. Understand concepts and processes of evidence, models, and explanation.	
a. Know that observations and data are evidence on which to base scientific explanations and predictions.	SE: 12-16 *MiniLab* 100, 212, 593 *Launch Lab* 225 *Lab* 364-365 TWE: LD 14, 207, 538 A 363
b. Know the difference between observations and inferences.	SE: 13, 16 *MiniLab* 23, 347 *Section Review* 20 #1
c. Use models to explain or demonstrate a concept.	SE: 21-26 *Lab* 306-307, 396-397 *Applying Science* 453 *MiniLab* 543 TWE: MM 114, 478, 571, 656 ACT 24
d. Develop skills to create scientific explanations based on scientific knowledge, logic, and analysis.	SE: 12-18 *Lab* 32-33, 580-581 *MiniLab* 383, 412 *Applying Science* 510 TWE: A 23 SJ 175 AIL 636

STANDARDS	PAGE REFERENCES
03. Understand constancy, change, and measurement.	
a. Recognize that some concepts in science do not change with time.	SE: 84-86, 136-143, 168-169, 440-443 *Section Review* 446 #5 TWE: A 143, 151
b. Analyze changes that occur in and among systems.	SE: 625 *Communicating Your Data* 626 *Lab* 447 TWE: QD 8 SJ 621 A 617
c. Measure using standard and metric systems with an emphasis on the metric system.	SE: 42-49, 50-54 *Lab* 55, 184-185, 244-245 TWE: ACT 172 IL 566 CU 54 A 14
04. Understand the theory that evolution is a process that relates to the gradual changes in the universe and of equilibrium as a physical state.	
a. Understand the relationships of past, present, and future.	SE: 272-276, 408 *Science Online* 280 *Chapter Preview* 314 *Science and Society* 432 *Extra Try at Home Labs* 694 #10 TWE: DI 451 D 303 ACT 432
05. Understand concepts of form and function.	
a. Understand that the shape or form of an object or system is frequently related to its use or function.	SE: 150, 483-484, 542, 546 *MiniLab* 484 TWE: CU 487 TPK 483 A 544 SJ 484 QD 561
619. CONCEPTS OF SCIENTIFIC INQUIRY.	
01. Understand scientific inquiry and develop critical thinking skills.	
a. Develop questions that can be answered by conducting scientific experiments.	SE: 6-7 *Lab* 88-89, 364-365, 488-489 *Section Review* 11 #5 TWE: AIL 521 IL 513, 538, 600, 659
b. Conduct scientific investigations using controls and variables when appropriate.	SE: *Lab* 32-33, 88-89, 332-333, 488-489, 520-521 TWE: QD 18 DI 319, 328 IL 17 AIL 88

STANDARDS	PAGE REFERENCES
c. Select and use appropriate tools and techniques to gather and display data.	SE: 56-59 *Lab* 32-33, 60-61, 278-279 *MiniLab* 261 TWE: A 59 ACT 196, 445 IL 48, 622
d. Analyze data in order to develop descriptions, explanations, predictions, and models using evidence.	SE: *Lab* 32-33, 244-245, 278-279, 364-365 *Applying Science* 631 TWE: ACT 326, 387 LD 207 VL 291
e. Develop a hypothesis based on observations.	SE: *MiniLab* 14, 484 *Lab* 32-33 TWE: IL 85, 513 QD 508
f. Compare alternative explanations and predictions.	SE: *Integrate Chemistry* 290 *Communicating Your Data* 669 *Lab* 31 *MiniLab* 650 *Science and History* 120 TWE: A 480 ACT 608 MM 25
g. Communicate scientific procedures and explanations.	SE: *Lab* 88-89, 332-333, 520-521, 580-581 *Communicating Your Data* 245, 277 TWE: A 84, 598, 669 DI 142
620. CONCEPTS OF PHYSICAL SCIENCE.	
01. Understand the structure and function of matter and molecules and their interactions.	
a. Explore and describe the differences among elements, compounds, and mixtures.	SE: 106, 113-117 *MiniLab* 114 *Science Online* 116 TWE: TPK 113 D 115 DI 116 ACT 116
b. Explore and calculate properties of matter.	SE: 70-79, 80-84, 257-260 *Lab* 87 *Launch Lab* 69 TWE: R 79 LD 72 D 84 DI 76 ACT 77
c. Compare differences among solids, liquids, and gases using the concept of density; explore the effect of temperature on density.	SE: 72, 382-383 *Lab* 87 *MiniLab* 383 *Section Review* 79 #5 TWE: LD 72, 382 R 79

STANDARDS	PAGE REFERENCES
d. Understand the nature of physical change and how it relates to physical properties.	SE: 71-75 *Lab* 88-89 TWE: A 79 QD 71, 75
02. Understand chemical reactions.	
a. Observe and know that substances react with each other to form new substances with different properties.	SE: 80-84, 178 *Lab* 88-89, 118-119 *MiniLab* 84 TWE: SJ 83 ACT 83 D 84
03. Understand concepts of motion and forces.	
a. Observe the effects of different forces (gravity and friction) on the movement, speed, and direction of an object.	SE: 136-141 *Launch Lab* 5, 129 *Lab* 151 *Chapter Review* 157 #27 TWE: D 134 R 143 A 5 QD 137 VL 139
b. Investigate different forms of energy.	SE: 162-167, 173, 178-181, 204, 230 *Launch Lab* 161 TWE: A 161, 169 IL 166 QD 179
621. CELLULAR AND MOLECULAR CONCEPTS.	
01. Understand the cell is the basis of form and function for all living things and how living things carry out their life functions.	
a. Explore the different structural levels of which an organism is comprised: cells, tissues, organs, organ systems, and organisms.	SE: 485-487 *Section Review* 487 #3 TWE: QD 485 IL 486 R 487 A 487
b. Recognize the structural differences between plant and animal cells.	SE: 478-481 *Section Review* 481 #5 & #6 TWE: ACT 478
c. Explore the concept that traits are passed from parents to offspring.	SE: 599-605 *Lab* 606-607 *Chapter Preview* 588 TWE: D 603 CU 605 R 605 A 605

STANDARDS	PAGE REFERENCES
622. INTERDEPENDENCE OR ORGANISMS AND BIOLOGICAL CHANGE.	
No standards of Interdependence of Organisms and Biological Change apply at this grade level.	
623. MATTER, ENERGY, AND ORGANIZATION IN LIVING SYSTEMS.	
01. Understand the relationship between matter, energy, and organization to trace matter as it cycles and energy as it flows through living systems and between living systems and the environment.	
a. Know that the energy for life is primarily derived from the sun through photosynthesis.	SE: 180, 377, 481, 624 *Section Review* 182 #4 *Integrate Physics* 634 TWE: TPK 633
624. EARTH AND SPACE SYSTEMS.	
01. Understand scientific theories of origin and subsequent changes in the universe and earth systems.	
a. Investigate the interactions between the solid earth, oceans, atmosphere, and organisms.	SE: 293-297, 299-305, 316-321, 323-331, 359-361 *Launch Lab* 315 TWE: ACT 294 VL 302 CU 305 DI 361
b. Know the water cycle and its relationship to weather and climate.	SE: 347 *National Geographic* 346 TWE: ACT 346 DI 346 D 658 CU 347
c. Identify cumulus, cirrus, and stratus clouds and their relationship to weather changes.	SE: 351-352 *Extra Try at Home Labs* 695 #12 TWE: D 351, 357 DI 351
d. Know that fossils are evidence of past life forms.	SE: 271 *MiniLab* 270 TWE: A 270
02. Understand geochemical cycles and energy in the earth system.	
a. Know the rock cycle and identify the three classifications of rocks.	SE: 265-271, 272-276 *Lab* 277 *Chapter Review* 283 #26 TWE: SJ 267 ACT 268 MM 269 A 271 QD 274 R 276
b. Know the layers and composition of the earth.	SE: 289-291 *Integrate Chemistry* 290 *Section Review* 297 #4 *Launch Lab* 287 TWE: CC 289

STANDARDS	PAGE REFERENCES
625. TECHNOLOGY.	
01. Understand the relationship between science and technology and develop the abilities of technological design and application.	
a. Know that science and technology are human endeavors interrelated to each other, to society, and to the workplace.	SE: *Science and Society* 432, 490 *Integrate Physics* 230, 577 *Integrate Social Studies* 507 *Science and History* 582 TWE: D 442 DI 138 SJ 110, 204
b. Compare scientific inquiry and technological design in terms of activities, results, and influences on individuals and society; know that science enables technology and vice versa.	SE: 11 *Science Online* 449, 478 *Science and History* 90 *Section Review* 11 #4 TWE: ACT 398 CU 243, 481 AIL 216 SJ 411
c. Create a tool to perform a specific function.	SE: *Chapter Review* 157 #29 *Section Review* 276 #6 TWE: IL 353 DI 352 A 214
d. Use available and appropriate technology.	SE: *Lab* 152-153, 322, 363, 430-431, 606-607 TWE: CYD 31, 112, 245 ACT 531
e. Explore the elements of technological design, which include the following: - Identify a problem; - Propose a solution; - Implement a proposed solution; - Evaluate the solution and its consequences; - Communicate the problem, process, and solution.	SE: *Lab* 464-465, 550-551, 668-669 TWE: A 414 IL 353 DI 352
626. PERSONAL AND SOCIAL PERSPECTIVES.	
01. Understand common environmental quality issues, both natural and human induced.	
a. Identify issues for environmental studies.	SE: 646-647, 655-662 *Science Online* 536 *Science and History* 334 *Integrate Health* 344 *Chapter Review* 401 #23 TWE: CC 652 R 662 SJ 656
02. Understand the causes and effects of population change.	
a. Understand the effect of technological development and human population growth on the United States and/or the world.	SE: 429, 646, 655-662 *Science and History* 334 *Science and Society* 638 TWE: CC 330, 425 DI 393

STANDARDS	PAGE REFERENCES
03. Understand the importance of natural resources and the need to manage and conserve them.	
a. Understand the differences between renewable and nonrenewable resources.	SE: 651-652 TWE: CU 653, 662 A 653
b. Understand the conservation of natural resources.	SE: 653, 661, 663-667 *Science Online* 653 *Lab* 654 *Science and Society* 670 TWE: CC 661 QD 661 VL 661 DI 666
04. Understand different uses of technology in science and how they affect our standard of living.	
a. Identify examples of technologies used in these scientific fields: - Food production; - Environmental cleanup; - Advances in medicine; - Communications; - The space program; - Weather forecasting.	SE: 411-413, 415-422 *Integrate Physics* 230, 577 *Lab* 363 *Science Online* 361 *Science and Society* 490 *Science and History* 582 TWE: CC 661 ACT 360
627. HISTORY OF SCIENCE.	
01. Understand the significance of major scientific milestones.	
a. Understand major contributions of various scientists and researchers.	SE: 99-104 *Science and History* 34, 582 *National Geographic* 108 *Integrate History* 198 *Science Online* 140 TWE: CD 292, 479 DI 452 USW 205
628. INTERDISCIPLINARY CONCEPTS.	
01. Understand that interpersonal relationships are important in scientific endeavors.	
a. Work in teams to solve problems.	SE: *Lab* 60-61, 332-333, 430-431, 488-489, 520-521 TWE: MM 634, 656 ACT 266 A 215 IL 232
02. Understand technical communication.	
a. Read, understand, and follow technical instructions.	SE: *Lab* 118-119, 183, 184-185, 216-217, 236, 298, 322, 482
b. Write a lab report.	SE: *Launch Lab* 97 TWE: A 167

STANDARDS	PAGE REFERENCES
632. SCIENCE STANDARDS - MIDDLE GRADES (GRADES 7-8), SECTIONS 633 THROUGH 643. Based on the necessary math knowledge and skills, student maturation level, and the need for secondary level Physical Science exposure, it is recommended that Earth Science be scheduled at the middle school level. The standards reflect this recommendation.	
633. UNIFYING CONCEPTS OF SCIENCE.	
01. Understand systems, order, and organization.	
c. Define and order small systems of a whole for the purpose of investigation.	SE: *Launch Lab* 255 *Chapter Review* 157 #29 *MiniLab* 8 TWE: SJ 8 R 11, 625 A 625 QD 8
d. Know the different structural levels of which an organism is comprised: cells, tissues, organs, organ systems, and organisms.	SE: 485-487 *Section Review* 487 #3 TWE: QD 485 IL 486 R 487 A 487
e. Know that there is order and predictability in the universe.	SE: 84-86, 168-169, 440-443 *Lab* 447 *Science Online* 444 TWE: LD 101 SJ 458
f. Know that patterns and similarities allow us to organize information about our universe.	SE: 7, 107-111, 257-260 *Lab* 112 *MiniLab* 167 *Science Online* 274 *Launch Lab* 497 TWE: QD 531 ACT 108 R 264
02. Understand concepts and processes of evidence, models, and explanation.	
a. Use observations and data as evidence on which to base scientific explanations and predictions.	SE: *Lab* 112, 364-365, 488-489, 580-581 *MiniLab* 84 TWE: LD 14 A 119, 129, 363
b. Use observations to make defendable inferences.	SE: *Lab* 87, 183, 598 *MiniLab* 14, 23, 176 *Launch Lab* 341 TWE: R 271 A 135 LD 538
c. Develop and/or use models to explain or demonstrate a concept.	SE: 21-26 *Lab* 306-307, 396-397 *Applying Science* 453 *MiniLab* 543 TWE: MM 114, 478, 571, 656 ACT 24

STANDARDS	PAGE REFERENCES
d. Develop scientific explanations based on scientific knowledge, logic, and analysis.	SE: 12-18 *Lab* 32-33, 580-581 *MiniLab* 383, 412 *Applying Science* 510 TWE: A 23 SJ 175 AIL 636
03. Understand constancy, change, and measurement.	
a. Identify concepts in science that do not change with time.	SE: 84-86, 136-143, 168-169, 440-443 *Section Review* 446 #5 TWE: A 143, 151
b. Analyze changes that occur in and among systems.	SE: 625 *Communicating Your Data* 626 *Lab* 447 TWE: QD 8 SJ 621 A 617
c. Measure precisely in metric units using appropriate tools.	SE: 42-49, 50-54 *Lab* 55, 184-185, 244-245 TWE: IL 566, 659 CU 54 ACT 149
04. Understand the theory that evolution is a process that relates to the gradual changes in the universe and of equilibrium as a physical state.	
a. Understand the relationships of past, present, and future.	SE: 272-276, 408 *Science Online* 280 *Chapter Preview* 314 *Science and Society* 432 *Extra Try at Home Labs* 694 #10 TWE: DI 451 D 303 ACT 432
b. Understand that evolution refers to the biological, geological, or astronomical change over time.	SE: 272-276, 292, 299-305, 320-321, 375, 458-459 TWE: DI 324 TFYI 458 SJ 458 A 305
c. Understand that equilibrium is a physical state of balance in which changes and forces occur in opposite and offsetting directions.	SE: 137, 194, 625 *Lab* 151 TWE: QD 137 ACT 137
634. CONCEPTS OF SCIENTIFIC INQUIRY.	
01. Understand scientific inquiry and develop critical thinking skills.	
a. Develop complex questions that can be answered by conducting long-term studies.	SE: *Lab* 364-365, 519, 520-521, 540, 626, 636-637 TWE: DI 257 AIL 364, 580

STANDARDS	PAGE REFERENCES
b. Design and conduct scientific investigations using controls and variables when appropriate.	SE: *Lab* 32-33, 244-245, 332-333, 520-521, 636-637 TWE: A 489, 623, 637 IL 17 DI 319
c. Select and use appropriate tools and techniques to gather and display data.	SE: 56-59 *Lab* 32-33, 60-61, 278-279 *MiniLab* 261 TWE: A 59 ACT 196, 445 IL 48, 622
d. Analyze data in order to form conclusions.	SE: *Lab* 118-119, 152-153, 332-333, 606-607 *Applying Science* 392, 570 TWE: IL 141, 409 QD 110
e. Think critically and logically to accept or reject a hypothesis.	SE: 27-29 *Lab* 31, 88-89, 332-333, 488-489, 520-521, 580-581 *MiniLab* 14
f. Analyze alternative explanations and predictions.	SE: *Integrate Chemistry* 290 *Communicating Your Data* 669 *Lab* 31 *MiniLab* 650 *Science and History* 120 TWE: A 480 ACT 608 MM 25
g. Communicate and defend scientific procedures and explanations.	SE: *Lab* 88-89, 332-333, 520-521, 580-581 *Communicating Your Data* 245, 277 TWE: IL 263 A 84, 669 CYD 183
h. Recognize the differences among observations, hypotheses, mathematical laws, and theories.	SE: 7, 12-15 *Section Review* 11 #1 & #3 TWE: D 7 CU 11 LD 14
635. CONCEPTS OF PHYSICAL SCIENCE.	
01. Understand the structure and function of matter and molecules and their interactions.	
a. Understand that all matter is made up of atoms, which may be combined in various kinds, ways, and numbers.	SE: 99, 106, 113-114 TWE: D 115 TPK 113 MM 114
b. Use properties to identify matter.	SE: 77-79, 84 *Lab* 118-119, 278-279 TWE: ACT 77, 78, 649 LD 266 AIL 278 DI 78

STANDARDS	PAGE REFERENCES
c. Identify physical properties and know the nature of a physical change.	SE: 70-76 *Lab* 87 *Chapter Review* 93 #18, #20, #21, & #24 TWE: A 79 QD 71, 75 USW 72 LD 72 DI 76 TPK 80
02. Understand chemical reactions.	
a. Demonstrate that chemical reactions may release or consume energy.	SE: 178-181 TWE: QD 179 ACT 181 R 182
03. Understand concepts of motion and forces.	
a. Know how an object's position, direction of motion, and speed can be measured.	SE: 130-135 *Lab* 60-61, 151, 152-153 TWE: SJ 132 ACT 133 QD 134 R 135 A 135
b. Compare and contrast the relationships among different forms of energy.	SE: 162-169, 179-181, 214 *Integrate Physics* 634 *Lab* 183 *Launch Lab* 161 TWE: A 161, 169 ACT 181
04. Understand that the total energy in the universe is constant.	
a. Explain how energy can be transformed from one form to another but is neither destroyed nor created.	SE: 168-169 TWE: CU 169 QD 168 R 169
b. Understand that energy is transferred from one place to another.	SE: 174-177, 226-230, 349 *Lab* 236 *Chapter Review* 188 #12 & #14 TWE: SJ 163 QD 175 R 177 A 177 D 227
636. CELLULAR AND MOLECULAR CONCEPTS.	
01. Understand the cell is the basis of form and function for all living things and how living things carry out their life functions.	
a. Know the relationships among specialized cells, tissues, organs, organ systems, and organisms.	SE: 485-487 *Section Review* 487 #3 TWE: QD 485 IL 486 R 487 A 487

STANDARDS	PAGE REFERENCES
b. Know the parts of plant and animal cells and the functions of the various cell structures.	SE: 478-481 *MiniLab* 480 *Lab* 482 TWE: ACT 478 MM 478
c. Know that most cell functions involve chemical reactions.	SE: 480-481 TWE: LD 480
d. Know that genes and chromosomes carry the information for traits.	SE: 591, 599-604 TWE: D 600 CU 605
e. Know that traits are inherited, including dominant and recessive traits.	SE: 599-605 *Chapter Preview* 588 *Lab* 606-607 TWE: CU 605 R 605 D 603 A 605
f. Know that genetic information is replicated and passed on to new cells.	SE: 590-597 *Lab* 598 TWE: QD 592 CU 597 MM 591 LD 594 A 597
g. Know that transmission of chromosomal information to offspring occurs through asexual or sexual reproduction.	SE: 593-597 *Chapter Review* 611 #25 & #27 TWE: R 597 D 594 ACT 596 VL 503 CU 605
637. INTERDEPENDENCE OF ORGANISMS AND BIOLOGICAL CHANGE.	
01. Understand the theory of biological evolution.	
a. Know that species change over time when random variations in individuals enhance their survival and reproductive success in a particular environment.	Genetic variation in individuals is discussed on SE: 603-604 Also see Glencoe *Science Level Blue* © 2005 SE: 275-276
b. Know that species may become extinct when the environment changes and their adaptive characteristics are insufficient to allow their survival.	SE: *Oops! Accidents in Science* 552 *Science and Society* 638
c. Know that biological classifications are based on similarities, which reflect their evolutionary relationships.	SE: 77-79, 500, 530-531 *Launch Lab* 497 *Reference Handbook* 726-729 TWE: A 500 QD 531 CU 534 R 539

STANDARDS	PAGE REFERENCES
638. MATTER, ENERGY, AND ORGANIZATION IN LIVING SYSTEMS.	
01. Understand the relationship between matter, energy, and organization to trace matter as it cycles and energy as it flows through living systems and between living systems and the environment.	
a. Know that the energy stored in food is primarily derived from the sun through photosynthesis.	SE: 180, 377, 481, 624 *Section Review* 182 #4 *Integrate Physics* 634 TWE: TPK 633
b. Know that the distribution and abundance of organisms and populations in ecosystems are limited by the availability of matter and energy.	SE: 620-625, 629 *Lab* 636-637 *Section Review* 632 #2 & #3 TWE: CU 632 DI 624 SJ 629
c. Know that atoms and molecules cycle among the living and nonliving components of the biosphere.	SE: 347, 394-395, 635 *National Geographic* 346 *Section Review* 395 #3 TWE: VL 394 DI 634 CU 395 ACT 346 D 658
d. Trace energy flows through ecosystems in one direction, from photosynthetic organisms to herbivores to carnivores and decomposers.	SE: 391-393, 633-634 *Section Review* 635 #2 & #5 *Chapter Review* 641 #27 TWE: R 635 MM 391, 634 VL 634
02. Understand the individual behavior of organisms and their interactions in populations and communities as influenced by physiological and environmental factors.	
a. Know that organisms have behavioral responses to internal and external stimuli.	SE: 516, 535, 571 *MiniLab* 508, 517 *Lab* 573 *Integrate Life Science* 349 TWE: D 537 CC 205
b. Know that living organisms have the capacity to produce populations of infinite size but that environments and resources are finite.	SE: 629 *Lab* 636-637 *Section Review* 632 #2 & #3 TWE: SJ 629 CU 632 AIL 636
639. EARTH AND SPACE SYSTEMS.	
01. Understand scientific theories of origin and subsequent changes in the universe and earth systems.	
a. Know that there are interactions among the solid earth, oceans, atmosphere, and organisms, which result in a change of the earth's system. (Some interactions are observable such as earthquakes and volcanic eruptions, but many take place over hundreds of millions of years.)	SE: 293-297, 299-305, 316-321, 323-331, 359-361 *Launch Lab* 315 TWE: ACT 294 VL 302 CU 305 DI 361

STANDARDS	PAGE REFERENCES
b. Compare earth with other planets with emphasis on conditions necessary for life.	SE: 450-454 *Lab* 464-465 *Section Review* 455 #5 TWE: ACT 450 QD 451
c. Understand the motions that explain such occurrences as the day, the seasons, the year, phases of the moon, eclipses, and tides.	SE: 440-446 *MiniLab* 441 *Lab* 447 *Chapter Review* 469 #20 & #22 TWE: ACT 443, 445 TPK 440 CU 446 R 446
d. Know that the development of life caused dramatic changes in the composition of the earth's atmosphere.	See Glencoe *Science Level Blue* © 2005 SE: 281
e. Know that the universe is constantly expanding.	SE: 463 *Integrate Physics* 462 TWE: TFYI 461
f. Know that stars and galaxies have a life cycle.	SE: 458-461 *Section Review* 463 #3 TWE: SJ 458 DI 460 ACT 460
g. Know methods used to estimate geologic time (observing rock sequences, using fossils to correlate the sequences at various locations).	See Glencoe *Science Level Blue* © 2005 SE: 247-261
02. Understand geochemical cycles and energy in the earth system.	
a. Know that earth systems have internal and external sources of energy.	SE: 344, 354, 378, 624 *Integrate Physics* 267 *Chapter Preview* 644 TWE: LD 354
b. Know that the earth's internal heat causes the plates of the earth's surface to move.	SE: 296-297 *Lab* 298 TWE: TFYI 296
c. Know that the heating of the earth's surface and atmosphere by the sun drives convection within the atmosphere and oceans, producing winds and ocean currents affecting global climate.	SE: 348-349, 354, 381-382 *Section Review* 384 #4 TWE: CD 353
640. TECHNOLOGY.	
01. Understand the relationship between science and technology and develop the abilities of technological design and application.	
a. Know that science and technology are human endeavors interrelated to each other, to society, and to the workplace.	SE: *Science and Society* 432, 490 *Integrate Physics* 230, 577 *Integrate Social Studies* 507 *Science and History* 582 TWE: D 442 DI 138 SJ 110, 204

STANDARDS	PAGE REFERENCES
b. Compare and contrast scientific inquiry and technological design in terms of activities, results, and influences on individuals and society; know that science enables technology and vice versa.	SE: 11 *Science Online* 449, 478 *Science and History* 90 *Section Review* 11 #4 TWE: ACT 398 CU 243, 481 AIL 216 SJ 411
c. Create a tool to perform a specific function.	SE: *Chapter Review* 157 #29 *Section Review* 276 #6 TWE: IL 353 DI 352 A 214
d. Use available and appropriate technology.	SE: *Lab* 152-153, 322, 363, 430-431, 606-607 TWE: CYD 31, 112, 245 ACT 531
e. Know the elements of technological design, which include the following: ● Identify a problem; ● Propose a solution; ● Implement a proposed solution; ● Evaluate the solution and its consequences; ● Communicate the problem, process, and solution.	SE: *Lab* 464-465, 550-551, 668-669 TWE: A 414 IL 353 DI 352
641. PERSONAL AND SOCIAL PERSPECTIVES.	
01. Understand common environmental quality issues, both natural and human induced.	
a. Identify environmental issues and conduct studies.	SE: *Lab* 654, 668-669 *Science and History* 344 *Science Online* 536 TWE: IL 659 SJ 656 ACT 657 CD 658
02. Understand the causes and effects of population change.	
a. Understand the effect of technological development and the growth of human population on the living and nonliving components of the environment.	SE: 429, 646, 655-662 *Science and History* 334 *Science and Society* 638 TWE: CC 330, 425 DI 393
03. Understand the importance of natural resources and the need to manage and conserve them.	
a. Explore alternative sources of energy.	SE: 662 *Chapter Preview* 644
b. Understand the role and effect of management of natural resources.	SE: 655-662 *Lab* 668-669 TWE: CC 332 ACT 657 AIL 668

STANDARDS	PAGE REFERENCES
642. HISTORY OF SCIENCE.	
01. Understand the significance of major scientific milestones.	
a. Understand the impact of historical scientific events.	SE: 415-422 *Science and History* 90, 218, 582 *Integrate History* 198 TWE: CC 15, 138, 173 CD 479 DI 104
643. INTERDISCIPLINARY CONCEPTS.	
01. Understand that interpersonal relationships are important in scientific endeavors.	
a. Work in teams to solve problems.	SE: *Lab* 60-61, 332-333, 430-431, 488-489, 520-521 TWE: MM 634, 656 ACT 266 A 215 IL 232
02. Understand technical communication.	
a. Read, understand, and follow technical instructions.	SE: *Lab* 118-119, 183, 184-185, 216-217, 236, 298, 322, 482
b. Write and articulate technical information.	SE: *Communicating Your Data* 236, 551 *Science Online* 241, 591 *Launch Lab* 255 TWE: A 55, 84, 598, 669 DI 375
c. Write a long-term investigation.	SE: *Lab* 364-365, 519, 520-521, 540, 626, 636-637 TWE: DI 257 AIL 364, 580

Codes Used for TWE Pages

A	Assessment
ACT	Activity
AIL	Alternative Inquiry Lab
CC	Curriculum Connection
CD	Cultural Diversity
CU	Check for Understanding
CYD	Communicating Your Data
D	Discussion
DI	Differentiated Instruction
IL	Inquiry Lab
LD	Lab Demonstration
MM	Make a Model
QD	Quick Demo
R	Reteach
SJ	Science Journal
TFYI	Teacher FYI
TPK	Tie to Prior Knowledge
USW	Use Science Words
VL	Visual Learning