



Physical Science

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STANDARDS		PAGE REFERENCES
S8.A The Nature of Science		
ASSESSMENT ANCHOR		
S8.A.1	Reasoning and Analysis	
S8.A.1 1	Explain, interpret and apply scientific, environmental, or technological knowledge presented in a variety of formats (e.g., visuals, scenarios, graphs).	
S8.A.1.1.1	Distinguish between a scientific theory and an opinion, explaining how a theory is supported with evidence, or how new data/information may change existing theories and practice.	Student Edition: 7, 10, 12 <i>Science Online</i> 12 Teacher Wraparound Edition: CA 11; CC 10; FF 10; IH 9; IL 12; RC 11
S8.A.1.1.2	Explain how certain questions can be answered through scientific inquiry and/or technological design.	Student Edition: 6-13 LAB 680 MiniLAB 259 Model and Invent LAB 148-149 Use the Internet LAB 278-279 Teacher Wraparound Edition: AIL 496; IL 12

STANDARDS	PAGE REFERENCES
<p>S8.A.1.1.3 Use evidence, such as observations or experimental results, to support inferences about a relationship.</p>	<p>Student Edition: 10 <i>Applying Science</i> 426 <i>Design Your Own LAB</i> 58-59, 214-215 <i>LAB</i> 171, 496-497 <i>Launch LAB</i> 5, 37 <i>Model and Invent LAB</i> 148-149 <i>Use the Internet LAB</i> 278-279 Teacher Wraparound Edition: LD 426</p>
<p>S8.A.1.1.4 Develop descriptions, explanations, predictions, and models using evidence.</p>	<p>Student Edition: 10-11 <i>Integrate Earth Science</i> 11 <i>LAB</i> 496-497 <i>MiniLAB</i> 169, 509 <i>Use the Internet LAB</i> 278-279 Teacher Wraparound Edition: A 11; DI 509</p>
<p>S8.A.1.2 Identify and explain the impacts of applying scientific, environmental, or technological knowledge to address solution to practical problems.</p>	
<p>S8.A.1.2.1 Describe the positive and negative, intended and unintended, effects of specific scientific results or technological developments (e.g., air/space travel, genetic engineering, nuclear fission/fusion, artificial intelligence, lasers, organ transplants).</p>	<p>Student Edition: 13, 398-399 <i>Integrate History</i> 48, 540 <i>National Geographic</i> 397 <i>Oops! Accidents in Science</i> 624, 654, 750 <i>Science and Society</i> 280 <i>Science Online</i> 744 Teacher Wraparound Edition: A 540; IH 48; SJ 398</p>
<p>S8.A.1.2.2 Identify environmental issues and explain their potential long-term health effects (e.g., pollution, pest controls, vaccinations).</p>	<p>Student Edition: 268, 364 <i>Design Your Own LAB</i> 345 <i>Integrate Health</i> 309 <i>Science and Society</i> 346, 719 <i>Science Online</i> 334 <i>Use the Internet LAB</i> 652-653 Teacher Wraparound Edition: CC 364; DI 268; FYI 268</p>

STANDARDS	PAGE REFERENCES
<p>S8.A.1.2.3 Describe fundamental scientific or technological concepts that could solve practical problems (e.g., Newton’s laws of motion, Mendelian genetics, mechanical advantage).</p>	<p>Student Edition: 54-56, 69-74, 83-88, 136, 331-332 <i>Applying Math</i> 69, 137 <i>Integrate Astronomy</i> 331 <i>Integrate Earth Science</i> 266 <i>MiniLAB</i> 54 <i>National Geographic</i> 85 Teacher Wraparound Edition: A 55; D 73; FF 85</p>
<p>S8.A.1.2.4 Explain society’s standard of living in terms of technological advancements and their impact on agriculture (e.g., transportation, processing, production, storage).</p>	<p>See Glencoe’s <i>Life Science</i> © 2008 Student Edition: 688-694, 749, 770-776</p>
<p>S8.A.1.3 Identify evidence that certain variables may have caused measurable changes in natural or human-made systems.</p>	
<p>S8.A.1.3.1 Use ratio to describe change (e.g., percents, parts per million, grams per cubic centimeter).</p>	<p>Student Edition: 39-42, 69-70, 130-131 <i>Applying Math</i> 40, 69 <i>Launch LAB</i> 37 <i>MiniLAB</i> 42 Teacher Wraparound Edition: A 40; Dln 127; FF 76; FYI 78; QD 41</p>
<p>S8.A.1.3.2 Use evidence, observations, or explanations to make inferences about change in systems over time (e.g., carrying capacity, succession, population dynamics, loss of mass in chemical reactions, indicator fossils in geologic time scale) and the variables affecting these changes.</p>	<p>Student Edition: 89, 130-131 <i>Applying Math</i> 130, 131 <i>Design Your Own LAB</i> 58-59 <i>LAB</i> 90-91 <i>Launch LAB</i> 67 <i>MiniLAB</i> 129 <i>National Geographic</i> 49 Teacher Wraparound Edition: AIL 58; FYI 86; QD 128</p>

STANDARDS	PAGE REFERENCES
<p>S8.A.1.3.3 Examine systems changing over time, identifying the possible variables causing this change, and drawing inferences about how these variables affect this change.</p>	<p>Student Edition: 68-74, 76-77 <i>Design Your Own LAB</i> 58-59 LAB 90-91 <i>Launch LAB</i> 67 <i>MiniLAB</i> 71 <i>National Geographic</i> 49, 85 Teacher Wraparound Edition: LD 70; IL 80</p>
<p>S8.A.1.3.4 Given a scenario, explain how a dynamically changing environment provides for the sustainability of living systems.</p>	<p>See Glencoe's <i>Life Science</i> © 2008 Student Edition: 684-693, 696-700, 710-718, 720-723, 725-729, 740-741, 743-751 LAB 730-731, 752 <i>National Geographic</i> 694, 724, 742</p>
<p>ASSESSMENT ANCHOR</p>	
<p>S8.A.2 Processes, Procedures and Tools of Scientific Investigations</p>	
<p>S8.A.2.1 Apply knowledge of scientific investigation or technological design in different contexts to make inferences to solve problems.</p>	
<p>S8.A.2.1.1 Use evidence, observations, or a variety of scales (e.g., time, mass, distance, volume, temperature) to describe relationships.</p>	<p>Student Edition: 17-18, 38-43 <i>Design Your Own LAB</i> 28-29 LAB 27, 90-91, 180-181 <i>Launch LAB</i> 37 <i>MiniLAB</i> 25 <i>National Geographic</i> 20 Teacher Wraparound Edition: A 40; DI 45; QD 41</p>
<p>S8.A.2.1.2 Use space/time relationships, define concepts operationally, raise testable questions, or formulate hypotheses.</p>	<p>Student Edition: 7-8 <i>Design Your Own LAB</i> 28-29, 116-117 LAB 90-91 <i>Launch LAB</i> 67 <i>MiniLAB</i> 71 <i>Model and Invent LAB</i> 148-149 Teacher Wraparound Edition: AIL 90; DI 72; IL 12, 44; QD 10</p>

STANDARDS	PAGE REFERENCES
<p>S8.A.2.1.3 Design a controlled experiment by specifying how the independent variables will be manipulated, how the dependent variable will be measured, and which variables will be held constant.</p>	<p>Student Edition: 9 <i>Design Your Own LAB</i> 58-59, 246-247, 344-345 <i>Launch LAB</i> 5 <i>MiniLAB</i> 129 <i>Model and Invent LAB</i> 558-559, 592-593 Teacher Wraparound Edition: A 9; AIL 58, 748; FF 8</p>
<p>S8.A.2.1.4 Interpret data/observations; develop relationships among variables based on data/observations to design models as solutions.</p>	<p>Student Edition: 9-11, 509-511 <i>Design Your Own LAB</i> 246-247, 344-345 <i>MiniLAB</i> 509 <i>Model and Invent LAB</i> 148-149, 558-559 <i>National Geographic</i> 510 Teacher Wraparound Edition: A 11; DI 509; MM 461</p>
<p>S8.A.2.1.5 Use evidence from investigations to clearly communicate and support conclusions.</p>	<p>Student Edition: 10 <i>Design Your Own LAB</i> 28-29, 246-247 <i>LAB</i> 57, 147, 245 <i>Launch LAB</i> 223, 289 <i>MiniLAB</i> 81, 517 <i>Model and Invent LAB</i> 148-149 <i>Use the Internet LAB</i> 278-279 Teacher Wraparound Edition: AIL 312; AM 498; IL 80; IM 499; LD 460; QD 492</p>
<p>S8.A.2.1.6 Identify a design flaw in a simple technological system and devise possible working solutions.</p>	<p>Student Edition: 268-269 (with elaboration) <i>Applying Science</i> 269 Teacher Wraparound Edition: A 268; AIL 58, 496; D 269</p>

STANDARDS	PAGE REFERENCES
<p>S8.A.2.2 Apply appropriate instruments for a specific purpose and describe the information the instrument can provide.</p>	
<p>S8.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, or temperature safely under a variety of conditions.</p>	<p>Student Edition: 17-21 <i>Design Your Own LAB</i> 28-29, 58-59 <i>LAB</i> 89, 180, 496-497 <i>Launch LAB</i> 37 <i>MiniLAB</i> 19 <i>National Geographic</i> 20 <i>Science Skill Handbook</i> 792-795 Teacher Wraparound Edition: A 17, 20; CD 17; CU 21; IM 15; QD 17, 41</p>
<p>S8.A.2.2.2 Apply appropriate measurement systems (e.g., time, mass, distance, volume, temperature) to record and interpret observations under varying conditions.</p>	<p>Student Edition: 17-21 <i>Applying Math</i> 24 <i>Design Your Own LAB</i> 28-29, 58-59 <i>LAB</i> 89, 90-91, 147 <i>Launch LAB</i> 5, 37 <i>MiniLAB</i> 19 <i>Model and Invent LAB</i> 148-149 <i>National Geographic</i> 49 Teacher Wraparound Edition: A 17, 18, 20; IM 15; QD 17</p>
<p>S8.A.2.2.3 Describe ways technology extends and enhances human abilities for specific purposes (e.g., microscope, telescope, micrometer, hydraulics, barometer).</p>	<p>Student Edition: 176-179, 264-269, 339-343, 367-373, 402-404, 432-437 <i>Integrate Health</i> 363 <i>LAB</i> 366 <i>Model and Invent LAB</i> 438-439 <i>National Geographic</i> 241, 369, 397 <i>Science and History</i> 248, 314 <i>Science and Society</i> 440 Teacher Wraparound Edition: FYI 341, 342; IH 363</p>

STANDARDS		PAGE REFERENCES
ASSESSMENT ANCHOR		
S8.A.3	Systems, Models and Patterns	
S8.A.3.1	Explain the parts of a simple system, their roles, and their relationships to the system as a whole.	
S8.A.3.1.1 Describe a system (e.g., watershed, circulatory system, heating system, agricultural system) as a group of related parts with specific roles that works together to achieve an observed result.	Student Edition: 172-174, 176-177, 207-211, 233-237, 260, 264-269 <i>Design Your Own LAB</i> 214-215 <i>Model and Invent LAB</i> 438-439 <i>National Geographic</i> 397 Teacher Wraparound Edition: A 208; CD 173; IL 174, 234; LD 208; QD 173	
S8.A.3.1.2 Explain the concept of order in a system (e.g., first to last—manufacturing steps; trophic levels; simple to complex—cell, tissue, organ, organ system).	Student Edition: 177, 200-201, 209, 260-261, 236-237, 267 <i>Design Your Own LAB</i> 214-215 <i>Integrate Environment</i> 111 <i>National Geographic</i> 397 Teacher Wraparound Edition: FF 176; IE 111; IL 234; MM 210; UA 236	
S8.A.3.1.3 Distinguish between system inputs, system processes, system outputs, and feedback (e.g., physical, ecological, biological, informational).	Student Edition: 134-136, 141 <i>LAB</i> 147 <i>Model and Invent LAB</i> 148-149 <i>National Geographic</i> 140 Teacher Wraparound Edition: QD 135; SJ 134; VL 135	
S8.A.3.1.4 Distinguish between open loop (e.g., energy flow, food web, open-switch) and closed loop (e.g., materials in the nitrogen and carbon cycles, closed-switch) systems.	Student Edition: 175, 201, 207-209 <i>Design Your Own LAB</i> 214-215 <i>Integrate Environment</i> 111 Teacher Wraparound Edition: A 209; IE 111; IM 217; LD 208; QD 209; SJ 111; VL 209	

STANDARDS	PAGE REFERENCES
<p>S8.A.3.1.5 Explain how components of a natural and human-made system play different roles in a working system.</p>	<p>Student Edition: 209, 235-237, 260-261, 267, 324-326, 427-431, 432-437 <i>Design Your Own LAB</i> 214-215 <i>Integrate Life Science</i> 324 <i>Model and Invent LAB</i> 438-439 <i>National Geographic</i> 397 Teacher Wraparound Edition: QD 428</p>
<p>S8.A.3.2 Apply knowledge of models to make predictions, draw inferences, or explain technological concepts.</p>	
<p>S8.A.3.2.1 Describe how scientists use models to explore relationships in natural systems (e.g., an ecosystem, river system, or the solar system).</p>	<p>Student Edition: 11, 509-511 <i>Integrate Earth Science</i> 11 <i>LAB</i> 557 <i>MiniLAB</i> 509 <i>Model and Invent LAB</i> 558-559 <i>National Geographic</i> 510 Teacher Wraparound Edition: D 11; DI 509; MM 70, 108, 178; SM 11</p>
<p>S8.A.3.2.2 Describe how engineers use models to develop new and improved technologies to solve problems.</p>	<p>Student Edition: 11, 509 <i>Integrate Earth Science</i> 11 <i>LAB</i> 557 <i>Model and Invent LAB</i> 148-149 <i>Science and Society</i> 150 Teacher Wraparound Edition: D 11; DI 509; MM 70, 108, 178; SM 11</p>
<p>S8.A.3.2.3 Given a model showing simple cause and effect relationships in a natural system, predict results that can be used to test the assumptions in the model (e.g., photosynthesis, water cycle, diffusion, infiltration).</p>	<p>Student Edition: 509 <i>Design Your Own LAB</i> 116-117 <i>LAB</i> 557 <i>Launch LAB</i> 449 <i>MiniLAB</i> 509 <i>National Geographic</i> 510 Teacher Wraparound Edition: DI 509; LD 478</p>

STANDARDS		PAGE REFERENCES
S8.A.3.3 Describe repeated processes or recurring elements in scientific and technological patterns.		
S8.A.3.3.1 Identify and describe patterns as repeated processes or recurring elements in human-made systems (e.g., triangles in bridges, hub and spoke system in communications and transportation systems, feedback controls in regulated systems).	Student Edition: 176-177, 586, 739-740, 767-768 <i>MiniLAB</i> 739 Teacher Wraparound Edition: R 179	
S8.A.3.3.2 Describe repeating structure patterns in nature (e.g., veins in a leaf, tree rings, crystals, water waves) or periodic patterns (e.g., daily, monthly, annually).	Student Edition: 290-291, 293-295, 477, 745, 739 <i>Integrate Social Studies</i> 299 <i>MiniLAB</i> 739 <i>National Geographic</i> 294 Teacher Wraparound Edition: A 294; FYI 294; IM 299; MM 586; QD 477	
S8.B Biological Sciences		
ASSESSMENT ANCHOR		
S8.B.1 Structure and Function of Organisms		
S8.B.1.1 Describe and compare structural and functional similarities and differences that characterize diverse living things.		
S8.B.1.1.1 Describe the structures of living things that help them function affectively in specific ways (e.g., adaptations and characteristics).	Student Edition: 325-326, 390-391, 427-431, 734 <i>Integrate Life Science</i> 228, 324, 391, 392, 427, 678, 700 <i>National Geographic</i> 140, 340, 430 Teacher Wraparound Edition: A 428; FYI 427; ILS 228, 700; IM 427; QD 428; VL 391	
S8.B.1.1.2 Compare similarities or differences in both internal structures (e.g., invertebrate/vertebrate, vascular/nonvascular, single-celled/multi-celled) and external structures (e.g., appendages, body segments, type of covering, size, shape) of organisms.	See Glencoe's <i>Life Science</i> © 2008 Student Edition: 38-45, 167-169, 187, 210-211, 245, 247-260, 344, 399, 430, 442-443	
S8.B.1.1.3 Apply knowledge of characteristic structures to identify or categorize organisms (i.e., plants, animals, fungi, bacteria, and protista).	Student Edition: <i>Integrate History</i> 9 Teacher Wraparound Edition: IH 9	

STANDARDS	PAGE REFERENCES
<p>S8.B.1.1.4 Identify the levels of organization from cell to organism and describe how specific structures (parts), which underlie larger systems, enable the system to function as a whole.</p>	<p>See Glencoe's <i>Life Science</i> © 2008</p> <p>Student Edition: 38-45, 240-245, 281-288, 302-309, 399-403, 428-432, 484-489, 490-495, 496-500, 523-529, 540-548, 550-555, 556-557, 568-572, 577-582, 594-602, 622-629</p> <p><i>LAB</i> 46, 583</p> <p><i>National Geographic</i> 79</p>
<p>ASSESSMENT ANCHOR S8.B.2 Continuity of Life</p>	
<p>S8.B.2.1 Explain the basic concepts of natural selection.</p>	
<p>S8.B.2.1.1 Explain how inherited structures or behaviors help organisms survive and reproduce in different environments.</p>	<p>See Glencoe's <i>Life Science</i> © 2008</p> <p>126-128, 154-159, 330-333</p> <p><i>Design Your Own Lab</i> 144-145, 174-175</p> <p><i>Lab</i> 133</p> <p><i>MiniLab</i> 128, 159</p> <p><i>National Geographic</i> 129</p>
<p>S8.B.2.1.2 Explain how different adaptations in individuals of the same species may affect survivability or reproduction success.</p>	<p>Student Edition: 168</p> <p><i>Integrate Life Science</i> 392, 678, 700</p> <p><i>Science Online</i> 41</p> <p>Teacher Wraparound Edition: D 700; ILS 392, 700; RC 168; TQA 168</p>
<p>S8.B.2.1.3 Explain that mutations can alter a gene and are the original source of new variations.</p>	<p>Teacher Wraparound Edition: A 556; DI 745</p> <p>Also see Glencoe's <i>Life Science</i> © 2008</p> <p>Student Edition: 114-115, 137-139</p> <p><i>Design Your Own Lab</i> 174-175</p> <p><i>Use the Internet Lab</i> 116-117</p>
<p>S8.B.2.1.4 Describe how selective breeding or biotechnology can change the genetic makeup of organisms.</p>	<p>See Glencoe's <i>Life Science</i> © 2008</p> <p>Student Edition: 126-128, 134-140, 141-143</p> <p><i>MiniLab</i> 128</p> <p><i>National Geographic</i> 129</p>

STANDARDS	PAGE REFERENCES
<p>S8.B.2.1.5 Explain that adaptations are developed over long periods of time and are passed from one generation to another.</p>	<p>See Glencoe's <i>Life Science</i> © 2008 Student Edition: 152-161, 167-173 <i>Design Your Own Lab</i> 174-175 <i>Lab</i> 162 <i>Launch Lab</i> 153 <i>MiniLab</i> 159 <i>National Geographic</i> 166</p>
<p>S8.B.2.2 Explain how a set of genetic instructions determines inherited traits of organisms.</p>	
<p>S8.B.2.2.1 Identify and explain differences between inherited and acquired traits.</p>	<p>See Glencoe's <i>Life Science</i> © 2008 Student Edition: 126-128, 136, 154-159 <i>MiniLab</i> 128, 159 <i>National Geographic</i> 129</p>
<p>S8.B.2.2.2 Recognize that the gene is the basic unit of inheritance, that there are dominant and recessive genes, that traits are inherited.</p>	<p>See Glencoe's <i>Life Science</i> © 2008 Student Edition: 110-115, 126-128, 130-132 <i>MiniLab</i> 111 <i>National Geographic</i> 129 <i>Use the Internet Lab</i> 116-117</p>
<p>ASSESSMENT ANCHOR S8.B.3 Ecological Behavior and Systems</p>	
<p>S8.B.3.1 Explain the relationships among and between organisms in different ecosystems and their abiotic and biotic components.</p>	
<p>S8.B.3.1.1 Explain the flow of energy through an ecosystem (e.g., food chains, food webs).</p>	<p>Student Edition: <i>Integrate Environment</i> 111 <i>Integrate Life Science</i> 392 Teacher Wraparound Edition: FYI 745; IE 111; SJ 111</p>
<p>S8.B.3.1.2 Identify major biomes and describe abiotic and biotic components (e.g., abiotic: different soil types, air, water, sunlight).</p>	<p>Student Edition: 166-167 <i>Integrate Earth Science</i> 162 <i>National Geographic</i> 166 Teacher Wraparound Edition: IES 162</p>
<p>S8.B.3.1.3 Explain relationships among organisms (e.g., producers/consumers, predator/prey, in an ecosystem).</p>	<p>Student Edition: <i>Integrate Life Science</i> 700</p>

STANDARDS	PAGE REFERENCES
<p>S8.B.3.2 Identify evidence of change to infer and explain the ways different variables may affect change in natural or human-made systems.</p>	
<p>S8.B.3.2.1 Use evidence to explain factors that affect changes in populations (e.g., deforestation, disease, land use, natural disaster, invasive species).</p>	<p>See Glencoe's <i>Life Science</i> © 2008 Student Edition: 158-159, 684-693, 740-745 <i>Design Your Own Lab</i> 174-175 <i>MiniLab</i> 689 <i>National Geographic</i> 694</p>
<p>S8.B.3.2.2 Use evidence to explain how diversity affects the ecological integrity of natural systems.</p>	<p>See Glencoe's <i>Life Science</i> © 2008 Student Edition: 158-159, 684-693, 696-700, 740-745 <i>Design Your Own Lab</i> 174-175 <i>MiniLab</i> 689 <i>National Geographic</i> 694</p>
<p>S8.B.3.2.3 Describe the response of organisms to environmental changes (e.g., changes in climate, hibernation, migration, coloration) and how those changes affect survival.</p>	<p>Student Edition: 168, 678 Teacher Wraparound Edition: RC 168; TQA 168</p>
<p>S8.B.3.3 Explain how renewable and nonrenewable resources provide for human needs or how these needs impact the environment.</p>	
<p>S8.B.3.3.1 Explain how human activities may affect local, regional, and global environments.</p>	<p>Student Edition: 267-269, 364, 648 <i>Applying Science</i> 269 <i>Integrate Environment</i> 362, 459, 650, 772 <i>Integrate History</i> 713 <i>Science and Society</i> 280, 718 <i>Use the Internet LAB</i> 652-653 Teacher Wraparound Edition: D 269, 273, 280; DI 268; IE 772; IH 713</p>
<p>S8.B.3.3.2 Explain how renewable and nonrenewable resources provide for human needs (i.e., energy, food, water, clothing, and shelter).</p>	<p>Student Edition: 256-263, 271-276 <i>Integrate Earth Science</i> 275 <i>Integrate Life Science</i> 775 <i>LAB</i> 177 <i>MiniLAB</i> 272 <i>Oops! Accidents in Science</i> 65 <i>Use the Internet LAB</i> 278-279 Teacher Wraparound Edition: CD 259; D 275; FF 257; FYI 260, 274</p>

STANDARDS	PAGE REFERENCES
<p>S8.B.3.3.3 Describe how waste management affects the environment (e.g., recycling, composting, landfills, incineration, sewage treatment).</p>	<p>Student Edition: 268-269, 271-276 <i>Integrate Environment</i> 772 Teacher Wraparound Edition: A 268; D 269; IE 772</p>
<p>S8.B.3.3.4 Explain the long-term effects of using integrated pest management (e.g., herbicides, natural predators, biogenetics) on the environment.</p>	<p>See Glencoe's <i>Life Science</i> © 2008 Student Edition: 288, 783 <i>Integrate Environment</i> 142</p>
<p>S8.C Physical Sciences</p>	
<p>ASSESSMENT ANCHOR</p>	
<p>S8.C.1 Structure, Properties, and Interaction of Matter and Energy</p>	
<p>S8.C.1.1 Explain concepts about the structure and properties (physical and chemical) of matter.</p>	
<p>S8.C.1.1.1 Explain the differences among elements, compounds, and mixtures.</p>	<p>Student Edition: 450-454, 460-461, 517-519, 602-603, 615-617, 619-620, 726-730, 734, 736-747 <i>Integrate Astronomy</i> 733 <i>LAB</i> 457 Teacher Wraparound Edition: A 618; D 454; IM 452; LD 460, 732; MM 605</p>
<p>S8.C.1.1.2 Use characteristic physical or chemical properties to distinguish one substance from another (e.g., density, thermal expansion/contraction, freezing/melting points, streak test).</p>	<p>Student Edition: 19, 458-459, 478-481, 516-519 <i>LAB</i> 496-497 <i>MiniLAB</i> 486, 759 Teacher Wraparound Edition: A 461; DI 459, 521, 571; FYI 585; QD 572</p>
<p>S8.C.1.1.3 Identify and describe reactants and products of simple chemical reactions.</p>	<p>Student Edition: 632, 635-636, 641-645 <i>Applying Math</i> 637, 644 <i>Integrate Environment</i> 637 <i>Launch LAB</i> 631 <i>MiniLAB</i> 636, 648 Teacher Wraparound Edition: A 637; CQA 642; FYI 642; QD 642</p>

STANDARDS		PAGE REFERENCES
ASSESSMENT ANCHOR		
S8.C.2	Forms, Sources, Conversion, and Transfer of Energy	
S8.C.2.1	Describe energy sources, transfer of energy, or conversion of energy.	
S8.C.2.1.1 Distinguish among forms of energy (e.g., electrical, mechanical, chemical, heat, light, sound, nuclear) and sources of energy (i.e., renewable and nonrenewable energy).	Student Edition: 107-108, 113, 159, 256-263, 271-277 <i>Integrate Health</i> 115 <i>LAB</i> 277 <i>National Geographic</i> 258 <i>Use the Internet LAB</i> 278-279 Teacher Wraparound Edition: SJ 101; VL 108	
S8.C.2.1.2 Explain how heat is transferred from one place to another through convection, conduction, or radiation.	Student Edition: 164-167, 173-175, 180-181 <i>LAB</i> 171, 180-181 <i>MiniLAB</i> 168 <i>National Geographic</i> 166 Teacher Wraparound Edition: CC 167; LD 165; QD 173	
S8.C.2.1.3 Describe how one form of energy (e.g., electrical, mechanical, chemical, heat, light, sound, nuclear) can be converted into a different form of energy.	Student Edition: 100-101, 107-115, 131, 256 <i>Applying Math</i> 115 <i>Integrate Environment</i> 111 <i>Integrate Health</i> 115 <i>LAB</i> 277 <i>Launch LAB</i> 255 <i>MiniLAB</i> 112 <i>Science and Health</i> 118 <i>Science Online</i> 113 Teacher Wraparound Edition: FF 112; IM 114; QD 135; R 115	

STANDARDS		PAGE REFERENCES
S8.C.2.2 Compare the environmental impact of different energy sources chosen to support human endeavors.		
S8.C.2.2.1 Describe the sun as a major source of energy that impacts on the environment.	Student Edition: 173-174, 271-272, 534 <i>Inquiry LAB</i> 174 <i>Integrate Environment</i> 11 <i>LAB</i> 277 <i>Launch LAB</i> 255 <i>MiniLAB</i> 272 <i>Science Online</i> 174 <i>Science Stats</i> 182 Teacher Wraparound Edition: IE 111; SJ 111	
S8.C.2.2.2 Compare the time spans of renewability for fossil fuels and alternative fuels.	Student Edition: 256-263, 271-276 <i>National Geographic</i> 258 Teacher Wraparound Edition: D 257, 262, 273, 275; FF 257; IM 273; RC 273; VL 275	
S8.C.2.2.3 Describe the waste (i.e., quantity, kind, and potential to cause environmental impacts) derived from the use of renewable and nonrenewable energy sources and their potential impact on the environment.	Student Edition: 271-276, 648 <i>Launch LAB</i> 695 <i>Science and Society</i> 280, 718 <i>Use the Internet LAB</i> 652-653 Teacher Wraparound Edition: D 273, 275, 280; VL 275	
ASSESSMENT ANCHOR		
S8.C.3 Principles of Motion and Force		
S8.C.3.1 Describe the effect of multiple forces on the movement, speed, or direction of an object.		
S8.C.3.1.1 Describe forces acting on objects (e.g., friction, gravity, balanced versus unbalanced, inertia, momentum).	Student Edition: 68, 70-73, 75-82, 86-88 <i>LAB</i> 89, 90-91 <i>Launch LAB</i> 67 <i>MiniLAB</i> 71, 81 <i>National Geographic</i> 85 Teacher Wraparound Edition: A 73; FF 73; IL 80; IM 70; LD 70; QD 77	

STANDARDS		PAGE REFERENCES	
S8.C.3.1.2	Distinguish between kinetic and potential energy.	Student Edition: 102-105, 108-111, 477 <i>Design Your Own LAB</i> 116-117 <i>LAB</i> 106 <i>National Geographic</i> 110 Teacher Wraparound Edition: CU 105; QD 104, 108; USW 102	
S8.C.3.1.3	Explain that the mechanical advantages produced by simple machines helps to do work (physics) by either overcoming a force or changing the direction of the applied force.	Student Edition: 136, 141-143 <i>LAB</i> 147 <i>Model and Invent LAB</i> 148-149 <i>National Geographic</i> 140 Teacher Wraparound Edition: A 133, 141; CC 143; DI 141; FF 136; FYI 136; LD 142; QD 135	
S8.D Earth and Space Sciences			
ASSESSMENT ANCHOR			
S8.D.1		Earth Features and Processes that Change Earth and Its Resources	
S8.D.1.1	Describe constructive and destructive natural processes that form different geologic structures and resources.		
S8.D.1.1.1	Explain the rock cycle as changes in the solid earth and rock types found in Pennsylvania (igneous – granite, basalt, obsidian, pumice; sedimentary – limestone, sandstone, shale, coal; and metamorphic – slate, quartzite, marble, gneiss).	See Glencoe's <i>Earth Science</i> © 2008 Student Edition: 90-93, 94-97, 99-102, 103-109, 115 #25 <i>MiniLAB</i> 91 <i>National Geographic</i> 92 <i>Lab</i> 98 <i>Science Online</i> 100	
S8.D.1.1.2	Compare and contrast (i.e., geological processes, length of time over which change occurs, and factors affecting the rate of change) different types of changes in Earth's surface (e.g., landslides, volcanic eruptions, earthquakes, mountain building, new land being formed, weathering, erosion, sedimentation, soil formation).	Movement of the Earth's crust is discussed on the following pages. Student Edition: 45-46 Teacher Wraparound Edition: A45	

STANDARDS	PAGE REFERENCES
<p>S8.D.1.1.3 Identify soil types (i.e., humus, topsoil, subsoil, loam, loess, and parent material) and their characteristics (i.e., particle size, porosity, and permeability) found in different biomes and in Pennsylvania, and explain how they formed.</p>	<p>See Glencoe's <i>Earth Science</i> © 2008 Student Edition: 188-194 <i>National Geographic</i> 189 <i>MiniLAB</i> 190 <i>Integrate Chemistry</i> 191 <i>Lab</i> 195</p>
<p>S8.D.1.1.4 Explain how fossils provide evidence about plants and animals that lived long ago throughout Pennsylvania's history (e.g., fossils provide evidence of different environments).</p>	<p>Student Edition: Fossils and radioactive dating are discussed on the following pages: 544-545 <i>Integrate Life Science</i> 514 Teacher Wraparound Edition: CC 544; D 544; ILS 514</p>
<p>S8.D.1.2 Describe the potential impact of human-made processes on changes to Earth's resources and how they affect everyday life.</p>	
<p>S8.D.1.2.1 Describe a product's transformation process from production to consumption (e.g., prospecting, propagating, growing, maintaining, adapting, treating, converting, distributing, disposing) and explain the process's potential impacts on Earth's resources.</p>	<p>Student Edition: 726-741 <i>National Geographic</i> 738 Teacher Wraparound Edition: FYI 737</p>
<p>S8.D.1.2.2 Describe potential impacts of human-made processes (e.g., manufacturing, agriculture, transportation, mining) on Earth's resources, both nonliving (i.e., air, water, or earth materials) and living (i.e., plants and animals).</p>	<p>Student Edition: 648 <i>Integrate Environment</i> 364 <i>Science and Society</i> 718</p>
<p>S8.D.1.3 Describe characteristic features of Earth's water systems or their impact on resources.</p>	
<p>S8.D.1.3.1 Describe the water cycle and the physical processes on which it depends (i.e., evaporation, condensation, precipitation, transpiration, runoff, infiltration, energy inputs, and phase changes).</p>	<p>Student Edition: An example of the water cycle is found in <i>Launch LAB</i> 449 <i>Integrate Earth Science</i> 176 Teacher Wraparound Edition: IES 176</p>

STANDARDS	PAGE REFERENCES
<p>S8.D.1.3.2 Compare and contrast characteristics of freshwater and saltwater systems on the basis of their physical characteristics (i.e., composition, density, and electrical conductivity) and their use as natural resources.</p>	<p>Student Edition: 273-274 Teacher Wraparound Edition: D 273, 274; FF 274; FYI 273, 274</p>
<p>S8.D.1.3.3 Distinguish among different water systems (e.g., wetland systems, ocean systems, river systems, watersheds) and describe their relationships to each other as well as to landforms.</p>	<p>See Glencoe's <i>Earth Science</i> © 2008 Student Edition: 238-248, 249-254, 255-258, 514-517, 518-523, 524-530, 542-547 <i>Science Online</i> 242, 543</p>
<p>S8.D.1.3.4 Identify the physical characteristics of a stream and how these characteristics determine the types of organisms found in an aquatic environment (e.g., biological diversity, water quality, flow rate, tributaries, surrounding watershed).</p>	<p>See Glencoe's <i>Earth Science</i> © 2008 Student Edition: 238-248, 265 #25 <i>National Geographic</i> 244-245 <i>Lab</i> 260-261</p>
<p>ASSESSMENT ANCHOR S8.D.2 Weather, Climate, and Atmospheric Processes</p>	
<p>S8.D.2.1 Explain how pressure, temperature, moisture, and wind are used to describe atmospheric conditions that affect regional weather or climate.</p>	
<p>S8.D.2.1.1 Explain the impact of water systems on the local weather or the climate of a region (e.g., lake effect snow, land/ocean breezes).</p>	<p>See Glencoe's <i>Earth Science</i> © 2008 Student Edition: 484-487, 493, 518-520, 539 #15 <i>MiniLAB</i> 493 <i>National Geographic</i> 494-495</p>
<p>S8.D.2.1.2 Identify how global patterns of atmospheric movement influence regional weather and climate.</p>	<p>Student Edition: <i>National Geographic</i> 166</p>
<p>S8.D.2.1.3 Identify how cloud types, wind directions, and barometric pressure changes are associated with weather patterns in different regions of the country.</p>	<p>See Glencoe's <i>Earth Science</i> © 2008 Student Edition: 454-461, 462-469 <i>Science Online</i> 463 <i>National Geographic</i> 467 <i>Lab</i> 473 <i>Model and Invent Lab</i> 474-475</p>

STANDARDS		PAGE REFERENCES
ASSESSMENT ANCHOR		
S8.D.3 Composition and Structure of the Universe		
S8.D.3.1 Explain the relationships between and among the objects of our solar system.		
S8.D.3.1.1 Describe patterns of Earth's movements (i.e., rotation and revolution) in relation to the moon and sun (i.e., phases, eclipses, and tides).	Student Edition: 274 <i>Integrate Astronomy 76</i> Teacher Wraparound Edition: D 274; FF 274; FYI 274	
S8.D.3.1.2 Describe the role of gravity as the force that governs the movement of the solar system and universe.	Student Edition: 76, 82 <i>Integrate Astronomy 76</i>	
S8.D.3.1.3 Compare and contrast characteristics of celestial bodies found in the solar system (e.g., planets, moons, asteroids, comets, meteors, meteoroids, meteorites, inner and outer planets).	Student Edition: 78 <i>Integrate Astronomy 76</i>	