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STANDARDS	PAGE REFERENCES
S11.A The Nature of Science	
S11.A.1 Reasoning and Analysis	
<p>S11.A.1.1 Analyze and explain the nature of science in the search for understanding the natural world and its connection to technological systems.</p> <p>Reference: 3.1.10.A, 3.2.10.A, 3.1.10.E</p>	
<p>S11.A.1.1.1</p> <p>Compare and contrast scientific theories, scientific laws, and beliefs (e.g., the law of gravity, how light travels, formation of moons, stages of ecological succession).</p>	<p>Student Edition:</p> <p>13, 76, 80-84, 120, 155, 475</p> <p>Design Your Own Lab 478-479</p> <p><i>How Science Works</i> 36</p> <p>Teacher Wraparound Edition:</p> <p>IL 10; SJ 12</p>

STANDARDS	PAGE REFERENCES
<p>S11.A.1.1.2 Analyze and explain how to verify the accuracy of scientific facts, principles, theories, and laws.</p>	<p>Student Edition: 7-12 <i>Design Your Own Lab</i> 94-95, 192-193 <i>How Science Works</i> 36 <i>Lab</i> 33 <i>Science And History</i> 96 <i>Science Skill Handbook</i> 776-781 <i>Skill Handbook</i> 771 Teacher Wraparound Edition: DI 22; FF 9, 11; IL 10</p>
<p>S11.A.1.1.3 Evaluate the appropriateness of research questions (e.g., testable vs. not-testable).</p>	<p>Student Edition: 8 <i>How Science Works</i> 36, 360, 542 <i>Lab</i> 33, 93, 113 <i>Science And History</i> 96, 608 <i>Science Skill Handbook</i> 773 Teacher Wraparound Edition: A 9; DI 8; QD 11</p>
<p>S11.A.1.1.4 Explain how specific scientific knowledge or technological design concepts solve practical problems (e.g., momentum, Newton's laws of universal gravitation, tectonics, conservation of mass and energy, cell theory, theory of evolution, atomic theory, theory of relativity, Pasteur's germ theory, relativity, heliocentric theory, ideal gas laws).</p>	<p>Student Edition: 26-29 <i>How Science Works</i> 298, 422, 510, 732 <i>In The Field</i> 698, 762 <i>Science And History</i> 96, 194, 636 <i>Science and Technology</i> 226, 574 Teacher Wraparound Edition: A 29; QD 27</p>
<p>S11.A.1.1.5 Analyze or compare the use of both direct and indirect observation as means to study the world and the universe (e.g., behavior of atoms, functions of cells, birth of stars).</p>	<p>Student Edition: 16- 20, 203-205 <i>Apply Science</i> 411 <i>How Science Works</i> 36, 454, 608 <i>Launch Lab</i> 486 <i>Lab</i> 33 <i>MiniLab</i> 18, 28 Teacher Wraparound Edition: A 29, 203; PR 32; QD 17</p>

STANDARDS	PAGE REFERENCES
<p>S11.A.1.2 Identify and analyze the scientific or technological challenges of societal issues; propose possible solutions and discuss implications. Reference: 3.2.10.A, 4.3.10.B</p>	
<p>S11.A.1.2.1 Apply and explain scientific concepts to societal issues using case studies (e.g., sea level change, spread of HIV, deforestation, environmental health, energy).</p>	<p>Student Edition: 234-240, 244-247 <i>In The Field</i> 698 <i>Launch Lab</i> 232 <i>Science And History</i> 96, 636 <i>Science and Technology</i> 226 Teacher Wraparound Edition: A 246; DI 235; IH 236; IL 239; RET 240; TC 232</p>
<p>S11.A.1.2.2 Use case studies (e.g., Wright brothers' flying machine, Tacoma Narrows Bridge, Henry Petroski's Design Paradigms) to propose possible solutions and analyze economic and environmental implications of solutions for real-world problems.</p>	<p>Student Edition: 248-253, 260-261, 354-357, 415-419 <i>How Science Works</i> 422, 732 <i>In The Field</i> 392, 698 <i>Lab</i> 254 <i>MiniLab</i> 249 <i>Science and Technology</i> 574 <i>Use the Internet Lab</i> 262-263, 420-421 Teacher Wraparound Edition: DI 254; PR 261; SJ 355; TPK 248; VL 249</p>
<p>S11.A.1.3 Describe and interpret patterns of change in natural and human-made systems. Reference: 3.1.10.C, 3.1.10.E, 4.8.10.A</p>	
<p>S11.A.1.3.1 Use appropriate quantitative data to describe or interpret change in systems (e.g., biological indices, electrical circuit data, automobile diagnostic systems data).</p>	<p>Student Edition: 118, 182, 345-348 <i>Design Your Own Lab</i> 328-329 <i>How Science Works</i> 454, 732 <i>In The Field</i> 392 <i>Lab</i> 160-161, 184, 605 <i>Science And History</i> 96, 162 Teacher Wraparound Edition: FYI 182; MM 346; QD 118</p>
<p>S11.A.1.3.2 Describe or interpret dynamic changes to stable systems (e.g., chemical reactions, human body, food webs, tectonics, homeostasis).</p>	<p>Student Edition: 138-140, 178-179, 276-278, 317-318, 412-414, 493, 590-593, 601-604 <i>Design Your Own Lab</i> 328-329 <i>Lab</i> 151, 440 Teacher Wraparound Edition: A 412; DI 602; IDM 179; MI 138, 178; SJ 603</p>

STANDARDS	PAGE REFERENCES
<p>S11.A.1.3.3 Describe how changes in physical and biological indicators (e.g., soil, plants, or animals) of water systems reflect changes in these systems (e.g., changes in bloodworm populations reflect changes in pollution levels in streams).</p>	<p>Student Edition: 258-259, 438, 695 <i>Design Your Own Lab</i> 696-697 <i>In The Field</i> 698 <i>Lab</i> 440, 452-453 <i>MiniLab</i> 529 Teacher Wraparound Edition: A 258; IDM 244; QD 694</p>
<p>S11.A.1.3.4 Compare the rate of use of natural resources and their impact on sustainability.</p>	<p>Student Edition: 235-240, 255-260 Teacher Wraparound Edition: DI 235, 255; FYI 238, 242</p>
<p>S11.A.2 Processes, Procedures and Tools of Scientific Investigations</p>	
<p>S11.A.2.1 Apply knowledge of scientific investigation or technological design to develop or critique aspects of the experimental or design process. Reference: 3.2.10.B, 3.2.10.B</p>	
<p>S11.A.2.1.1 Critique the elements of an experimental design (e.g., raising questions, formulating hypotheses, developing procedures, identifying variables, manipulating variables, interpreting data, and drawing conclusions) applicable to a specific experimental design.</p>	<p>Student Edition: 8-11 <i>Design Your Own Lab</i> 94-95, 192-193, 328-329, 478-479, 572-573 <i>How Science Works</i> 36 <i>Science Skill Handbook</i> 773-781 Teacher Wraparound Edition: DI 11; FF 9; IM 10; USW 8</p>
<p>S11.A.2.1.2 Critique the elements of the design process (e.g., identify the problem, understand criteria, create solutions, select solution, test/evaluate and communicate results) applicable to a specific technological design.</p>	<p>Student Edition: 12-13, 26-28 <i>Science And History</i> 96, 194, 636 <i>Science Skill Handbook</i> 773, 781 Teacher Wraparound Edition: A 30; DI 11, 12, 31; IL 10; MI 26</p>
<p>S11.A.2.1.3 Use data to make inferences and predictions, or to draw conclusions, demonstrating understanding of experimental limits.</p>	<p>Student Edition: 10-11 <i>Design Your Own Lab</i> 128-129, 328-329, 478-479 <i>Lab</i> 61, 62-63, 113, 285, 662 <i>Science Skill Handbook</i> 780-781 <i>Use the Internet Lab</i> 262-263, 760-761 Teacher Wraparound Edition: DI 11; FF 9; USW 8, 9</p>

STANDARDS	PAGE REFERENCES
<p>S11.A.2.1.4 Critique the results and conclusions of scientific inquiry for consistency and logic.</p>	<p>Student Edition: 10-11 <i>How Science Works</i> 36, 542 <i>Lab</i> 93, 184, 344 <i>Science And History</i> 96, 194 <i>Science Skill Handbook</i> 780-781 Teacher Wraparound Edition: DI 11</p>
<p>S11.A.2.1.5 Communicate results of investigations using multiple representations.</p>	<p>Student Edition: 12, 21-25 <i>Math Skill Handbook</i> 796-797 <i>Science Skill Handbook</i> 781 Teacher Wraparound Edition: A 22, 24; DI 11; QD 23; VL 21</p>
<p>S11.A.2.2 Evaluate appropriate technologies for a specific purpose, or describe the information the instrument can provide. Reference: 3.7.10.B, 3.8.10.B</p>	
<p>S11.A.2.2.1 Evaluate appropriate methods, instruments, and scale for precise quantitative and qualitative observations (e.g., to compare properties of materials, water quality).</p>	<p>Student Edition: 14-20, 258-259 <i>Lab</i> 508-509, 518-519, 531 <i>MiniLab</i> 18, 529 <i>Science Skill Handbook</i> 777 Teacher Wraparound Edition: DE 527; IDM 15; MM 16; QD 17</p>
<p>S11.A.2.2.2 Explain how technology (e.g., GPS, spectroscope, scanning electron microscope, pH meter, probe, interface, imaging technology, telescope) is used to extend human abilities and precision.</p>	<p>Student Edition: 12, 415-419 <i>Design Your Own Lab</i> 328-329 <i>How Science Works</i> 422 <i>In The Field</i> 392 <i>Science And History</i> 330 <i>Use the Internet Lab</i> 420-421 Teacher Wraparound Edition: DI 415; FYI 326</p>

STANDARDS	PAGE REFERENCES
S11.A.3 Systems, Models and Patterns	
<p>S11.A.3.1 Analyze the parts of a simple system, their roles, and their relationships to the system as a whole.</p> <p>Reference: 3.1.10.A, 3.1.10.E, 4.3.10.C</p>	
<p>S11.A.3.1.1 Apply systems analysis, showing relationships (e.g., flowcharts, concept maps), input and output, and measurements to explain a system and its parts.</p>	<p>Student Edition: 8-11, 152-155, 185-188, 238-239, 244, 252, 472, 718-719 <i>Science Skill Handbook</i> 773-775</p> <p>Teacher Wraparound Edition: A 244; DI 719; QD 11; SJ 155</p>
<p>S11.A.3.1.2 Analyze and predict the effect of making a change in one part of a system on the system as a whole.</p>	<p>Student Edition: 9-12, 152-153, 238-239, 244, 252, 472, 603-604, 719 <i>Design Your Own Lab</i> 192-193 <i>Science And History</i> 162</p> <p>Teacher Wraparound Edition: DE 186; DI 12; FF 9; QD 719; RE 604; VL 252</p>
<p>S11.A.3.1.3 Use appropriate quantitative data to describe or interpret a system (e.g., biological indices, electrical circuit data, automobile diagnostic systems data).</p>	<p>Student Edition: 12, 156-159, 187-191, 238-239, 244, 252, 472, 718-719 <i>Science Skill Handbook</i> 773-775</p> <p>Teacher Wraparound Edition: DI 12; IL 154</p>
<p>S11.A.3.1.4 Apply the universal systems model of inputs, processes, outputs, and feedback to a working system (e.g., heating systems, motor, food production) and identify the resources necessary for operation of the system.</p>	<p>Student Edition: 7-12, 152-155, 156-157, 185-188, 219, 238-239, 244, 252, 472, 718-719 <i>Science And History</i> 162 <i>Science Skill Handbook</i> 773-775</p> <p>Teacher Wraparound Edition: A 244; CD 8; DI 12; FF 9; QD 11; RE 159; RS 472; SJ 155; TPK 152; VL 719</p>
<p>S11.A.3.2 Compare observations of the real world to observations of a constructed model.</p> <p>Reference: 3.1.10.B, 3.2.10.B, 4.1.10.B, 4.6.10.A</p>	
<p>S11.A.3.2.1 Compare the accuracy of predictions represented in a model to actual observations and behavior.</p>	<p>Student Edition: 7, 491-493 <i>MiniLab</i> 503 <i>Model and Invent Lab</i> 34-35, 540-541</p> <p>Teacher Wraparound Edition: DI 491</p>

STANDARDS	PAGE REFERENCES
<p>S11.A.3.2.2 Describe advantages and disadvantages of using models to simulate processes and outcomes.</p>	<p>Student Edition: 7, 12 <i>Model and Invent Lab</i> 34-35, 540-541, 634-635 <i>Science Skill Handbook</i> 776 Teacher Wraparound Edition: A 12; VL 7</p>
<p>S11.A.3.2.3 Describe how relationships represented in models are used to explain scientific or technological concepts (e.g., dimensions of the solar system, life spans, size of atomic particles, topographic maps).</p>	<p>Student Edition: 491-493 <i>MiniLab</i> 503 <i>Model and Invent Lab</i> 540-541, 634-635 <i>Science Skill Handbook</i> 776 Teacher Wraparound Edition: DIF 491</p>
<p>S11.A.3.3 Compare and analyze repeated processes or recurring elements in patterns. Reference: 3.1.10.C, 3.2.10.B</p>	
<p>S11.A.3.3.1 Describe or interpret recurring patterns that form the basis of biological classification, chemical periodicity, geological order, or astronomical order.</p>	<p>Student Edition: 185-186, 498-504, 518-524, 526-530, 590-593, 706-709 <i>Design Your Own Lab</i> 192-193 <i>Lab</i> 477, 507, 508-509, 531 <i>MiniLab</i> 499 Teacher Wraparound Edition: MI 498, 590; RET 506</p>
<p>S11.A.3.3.2 Compare stationary physical patterns (e.g., crystals, layers of rocks, skeletal systems, tree rings, atomic structure) to the object's properties.</p>	<p>Student Edition: 185-186, 498-504, 518-524, 526-530, 706-709 <i>Design Your Own Lab</i> 192-193 <i>Lab</i> 477, 507, 508-509, 531 <i>MiniLab</i> 499 Teacher Wraparound Edition: MI 526; TPK 498</p>
<p>S11.A.3.3.3 Analyze physical patterns of motion to make predictions or draw conclusions (e.g., solar system, tectonic plates, weather systems, atomic motion, waves).</p>	<p>Student Edition: 250-251, 276-278, 280-284, 290-295, 315-316, 324-326, 590-593 <i>Lab</i> 285, 296-297 <i>MiniLab</i> 294 Teacher Wraparound Edition: QD 315; USW 276</p>

STANDARDS	PAGE REFERENCES
S11.C Physical Sciences	
S11.C.1 Structure, Properties, and Interaction of Matter and Energy	
S11.C.1.1 Explain the relationship between the structure and properties of matter. <i>Reference: 3.4.10.A</i>	
S11.C.1.1.1 Explain that matter is made of particles called atoms and that atoms are composed of even smaller particles (e.g., protons, neutrons, electrons).	Student Edition: 432-433, 450, 462, 489-493; 494-497, 616-619 Teacher Wraparound Edition: A 492; IM 466; MI 432, 494; QD 495; TPK 488, 616
S11.C.1.1.2 Explain the relationship between the physical properties of a substance and its molecular or atomic structure.	Student Edition: 469-472, 707-711, 718-719 <i>Design Your Own Lab</i> 572-573 <i>In The Field</i> 762 <i>Science and Technology</i> 480, 574 Teacher Wraparound Edition: IE 470; VL 719
S11.C.1.1.3 Explain the formation of compounds (ionic and covalent) and their resulting properties using bonding theories.	Student Edition: 552-556, 558-563 Teacher Wraparound Edition: A 560, 561; CU 556, 564; FYI 553; MI 558
S11.C.1.1.4 Explain how the relationships of chemical properties of elements are represented in the repeating patterns within the periodic table.	Student Edition: 498-501, 502-505, 518-524, 526-530, 532-536 <i>MiniLab</i> 499 Teacher Wraparound Edition: FF 505; FYI 500; RE 506; TPK 498
S11.C.1.1.5 Predict the behavior of gases through the application of laws (e.g., Boyle's law, Charles' law, or ideal gas law).	Student Edition: 447-451 <i>MiniLab</i> 450 Teacher Wraparound Edition: MI 447; PR 450
S11.C.1.1.6 Describe factors that influence the frequency of collisions during chemical reactions that might affect the reaction rates (e.g., surface area, concentration, temperature).	Student Edition: 599-601 <i>Lab</i> 606-607 Teacher Wraparound Edition: DI 600; FYI 599; MI 598

STANDARDS	PAGE REFERENCES
S11.C.2 Forms, Sources, Conversion, and Transfer of Energy	
S11.C.2.1 Analyze energy sources and transfer of energy, or conversion of energy. <i>Reference: 3.4.10.B</i>	
S11.C.2.1.1 Compare or analyze waves in the electromagnetic spectrum (e.g., ultraviolet, infrared, visible light, X-rays, microwaves) as well as their properties, energy levels, and motion.	Student Edition: 316, 338-343, 345-351, 352-357 <i>How Science Works</i> 360 <i>Lab</i> 344 <i>Launch Lab</i> 336 <i>MiniLab</i> 342, 347 <i>Use the Internet Lab</i> 358-359 Teacher Wraparound Edition: BI 337; CU 343; FF 346; IH 350; IDM 353; SJ 341; VL 340
S11.C.2.1.2 Describe energy changes in chemical reactions.	Student Edition: 117, 125, 156-157, 234-235, 238-239, 594-597, 726 Teacher Wraparound Edition: BI 233; DE 596; FYI 726; ILS 125; MI 234, 594; RE 597
S11.C.2.1.3 Apply the knowledge of conservation of energy to explain common systems (e.g., refrigeration, rocket propulsion, heat pump).	Student Edition: 92, 120-127, 158-159, 597 <i>Design Your Own Lab</i> 128-129 <i>Science And History</i> 162 Teacher Wraparound Edition: CU 159; ILS 125; MI 120; MM 158
S11.C.2.1.4 Use Ohm’s Law to explain relative resistances, currents, and voltage.	Student Edition: 182, 185-188 <i>Design Your Own Lab</i> 192-193 Teacher Wraparound Edition: FYI 187; RET 182; SJ 189
S11.C.2.2 Demonstrate that different ways of obtaining, transforming, and distributing energy have different environmental consequences. <i>Reference: 3.4.10.B, 4.8.10.C, 4.2.10.A</i>	
S11.C.2.2.1 Explain the environmental impacts of energy use by various economic sectors (e.g., mining, logging, transportation) on environmental systems.	Student Edition: 234-239, 244-247, 255-261 Teacher Wraparound Edition: A 246; IL 239; ISS 244, 245; MI 241; PR 247; RET 240

STANDARDS	PAGE REFERENCES
<p>S11.C.2.2.2 Explain the practical use of alternative sources of energy (i.e., wind, solar, and biomass) to address environmental problems (e.g., air quality, erosion, resource depletion).</p>	<p>Student Edition: 248-253, 255-261 <i>In The Field</i> 698 <i>Lab</i> 254 <i>MiniLab</i> 249 <i>Science And History</i> 264 Teacher Wraparound Edition: FYI 251; IDM 250</p>
<p>S11.C.2.2.3 Give examples of renewable energy resources (e.g., wind, solar, biomass) and nonrenewable resources (e.g., coal, oil, natural gas) and explain the environmental and economic advantages and disadvantages of their use.</p>	<p>Student Edition: 234-240, 248-253, 255-261 <i>Lab</i> 254 <i>MiniLab</i> 249 Teacher Wraparound Edition: IDM 250; PR 247; RET 240</p>
<p>S11.C.3 Principles of Motion and Force</p>	
<p>S11.C.3.1 Use the principles of motion and force to solve real-world challenges. Reference: 3.4.10.C, 3.6.10.C</p>	
<p>S11.C.3.1.1 Explain common phenomena (e.g., a rock in a landslide, an astronaut during a space walk, a car hitting a patch of ice on the road) using an understanding of conservation of momentum.</p>	<p>Student Edition: 54-55; 91-92 <i>Lab</i> 62-63 Teacher Wraparound Edition: QD 54, 91</p>
<p>S11.C.3.1.2 Design or evaluate simple technological or natural systems that incorporate the principles of force and motion (e.g., simple machines, compound machines).</p>	<p>Student Edition: 106-107, 109-112 <i>Design Your Own Lab</i> 94-95 <i>Lab</i> 113 <i>Science And History</i> 96 <i>Science and Technology</i> 130 Teacher Wraparound Edition: FYI 107; IDM 110; RET 112</p>
<p>S11.C.3.1.3 Describe the motion of an object using variables (i.e., acceleration, velocity, displacement).</p>	<p>Student Edition: 44-50, 51-53, 56-60 <i>Lab</i> 61 <i>MiniLab</i> 48, 57 Teacher Wraparound Edition: DE 49; FYI 52; IA 47; IH 56; TPK 51; VL 50</p>

STANDARDS	PAGE REFERENCES
<p>S11.C.3.1.4 Explain how electricity induces magnetism and how magnetism induces electricity as two aspects of a single electromagnetic force.</p>	<p>Student Edition: 209-215, 216-219 <i>Design Your Own Lab</i> 224-225 <i>Lab</i> 223 <i>MiniLab</i> 211 <i>Science and Technology</i> 226 Teacher Wraparound Edition: IL 214; MI 209; QD 218</p>
<p>S11.C.3.1.5 Calculate the mechanical advantage for moving an object by using a simple machine.</p>	<p>Student Edition: 111 <i>Lab</i> 113 Teacher Wraparound Edition: FYI 109, 111; RET 112</p>
<p>S11.C.3.1.6 Identify elements of simple machines in compound machines.</p>	<p>Student Edition: 109 Teacher Wraparound Edition: DI 111</p>
<p>S11.D Earth and Space Sciences</p>	
<p>S11.D.1 Earth Features and Processes that Change Earth and Its Resources</p>	
<p>S11.D.1.1 Explain and analyze the forces in the lithosphere that continually shape Earth. Reference: 3.5.10.A, 4.4.10.B, 4.1.10.B</p>	
<p>S11.D.1.1.1 Classify and describe major types of rocks (i.e., igneous – granite, basalt, obsidian, pumice; sedimentary – limestone, sandstone, shale, coal; and metamorphic – slate, quartzite, marble, gneiss) and minerals (e.g., quartz, calcite, dolomite, clay, feldspar, mica, halite, pyrite) by their origin and formation.</p>	<p>Student Edition: 812-814, 817-821, 824-829, 830-835 <i>Lab</i> 816, 836-837 <i>MiniLab</i> 828 Teacher Wraparound Edition: CU 829; DE 827; DI 830; FYI 832; IC 825; IDM 813; QD 819, 821, 826; VL 831</p>
<p>S11.D.1.1.2 Explain the processes that take place at plate boundaries and how these processes continue to shape Earth (e.g., volcanic activity, earthquakes, mountain building, mid-ocean ridges, deep-sea trenches, new land being formed).</p>	<p>Student Edition: 776-779, 780-787, 792-794 <i>In The Field</i> 800 <i>Lab</i> 797, 798-799 Teacher Wraparound Edition: FYI 777; IDM 774; IL 785; MI 772</p>

STANDARDS	PAGE REFERENCES
<p>S11.D.1.1.3 Analyze features created by the interaction of processes that change Earth’s surface (e.g., wind and moving water help break down rock into soil; plate movement, earthquakes, and volcanic activity help cause mountains and valleys to form; flowing water and deposition of material help form deltas).</p>	<p>Student Edition: 846-852, 854-862 <i>Lab</i> 853, 874-875 <i>MiniLab</i> 857 Teacher Wraparound Edition: A 855; DE 859; FYI 847; MI 846; QD 850; TPK 854</p>
<p>S11.D.1.2 Analyze how human-made systems impact the management and distribution of natural resources. Reference: 4.2.10.C, 3.5.10.B, 3.6.10.A</p>	
<p>S11.D.1.2.1 Evaluate factors affecting availability, location, extraction, and use of natural resources.</p>	<p>Student Edition: 815, 852, 867-868 <i>Science and Technology</i> 838, 876 Teacher Wraparound Edition: FYI 825; IES 809</p>
<p>S11.D.1.2.2 Explain the impact of obtaining and using natural resources for the production of energy and materials (e.g., resource renewal, amount of pollution, deforestation).</p>	<p>Student Edition: 237-240, 246-247, 248-253, 255-261, 815, 852, 867-868 <i>Science and Technology</i> 838, 876 Teacher Wraparound Edition: DI 257; FYI 242, 825; IES 809</p>
<p>S11.D.1.3 Explain the significance and contribution of water as a resource to living things and the shaping of the land. Reference 3.5.10.D, 4.1.10.B, 4.3.10.B</p>	
<p>S11.D.1.3.1 Explain the multiple functions of different water systems in relation to landforms (e.g., buffer zones, nurseries, food production areas, habitat, water quality control, biological indicators).</p>	<p>Student Edition: 824-829, 833-835, 854-857, 860-861, 867-868 <i>MiniLab</i> 828 <i>Science and Technology</i> 876 Teacher Wraparound Edition: FYI 834; IC 868; QD 826</p>
<p>S11.D.1.3.2 Explain relationships among physical characteristics, vegetation, topography, and flow as it relates to water systems.</p>	<p>Student Edition: 834-835, 854-857, 858-859, 863-868 <i>MiniLab</i> 857 <i>Lab</i> 874 875 <i>Science and Technology</i> 876 Teacher Wraparound Edition: A 865; DI 858; MI 863; QD 856</p>

STANDARDS	PAGE REFERENCES
<p>S11.D.1.3.3 Explain factors (e.g., nutrient loading, turbidity, rate of flow, rate of deposition, biological diversity) that affect water quality and flow through a water system.</p>	<p>Student Edition: 660-661, 854-857, 863-868 <i>Lab</i> 874-875 <i>MiniLab</i> 857 <i>Science and Technology</i> 876 Teacher Wraparound Edition: A 855, 865; DE 866; IC 868</p>
<p>S11.D.2 Weather, Climate, and Atmospheric Processes</p>	
<p>S11.D.2.1 Analyze how the transfer of energy and substances between Earth's atmosphere and its surface influences regional or global weather or climate. Reference: 3.5.10.C</p>	
<p>S11.D.2.1.1 Describe how changes in concentration of minor components (e.g., O₂, CO₂, ozone, dust, pollution) in Earth's atmosphere are linked to climate change.</p>	<p>Student Edition: 349-350, 887-888, 896-900, 902-904 <i>Design Your Own Lab</i> 906-907 <i>Lab</i> 33 Teacher Wraparound Edition: DI 8; FYI 904; IE 350; MI 901</p>
<p>S11.D.2.1.2 Compare the transmission, reflection, absorption, and radiation of solar energy to and by Earth's surface under different environmental conditions (e.g., major volcanic eruptions, greenhouse effect, reduction of ozone layer; increased global cloud cover)</p>	<p>Student Edition: 147, 248-249, 349-350, 886, 904, 957 <i>Lab</i> 889 Teacher Wraparound Edition: DI 147, 249; FYI 885, 889; IE 350; QD 887</p>
<p>S11.D.2.1.3 Explain weather patterns and seasonal changes using the concepts of heat and density.</p>	<p>Student Edition: 890-894, 901, 905, 925 <i>Lab</i> 928 <i>MiniLab</i> 891, 926 Teacher Wraparound Edition: IDM 925; QD 902</p>
<p>S11.D.2.1.4 Analyze weather maps and weather data (e.g., air masses, fronts, temperature, air pressure, wind speed, wind direction, precipitation) to predict regional or global weather events.</p>	<p>Student Edition: 886-888, 890-894, 896-900, 905 <i>In The Field</i> 908 <i>Lab</i> 889 <i>MiniLab</i> 886 Teacher Wraparound Edition: CU 894; UTP 883</p>

STANDARDS	PAGE REFERENCES
S11.D.3 Composition and Structure of the Universe	
S11.D.3.1 Explain the composition, structure and origin of the universe. <i>Reference: 3.4.10.D</i>	
S11.D.3.1.1 Describe planetary motion and the physical laws that explain planetary motion.	Student Edition: 950-954 <i>MiniLab</i> 951 Teacher Wraparound Edition: IP 952
S11.D.3.1.2 Describe the structure, formation, and life cycle of stars.	Student Edition: 989-991, 992, 993, 995 <i>Lab</i> 996 <i>Science And History</i> 1008 Teacher Wraparound Edition: FYI 991; MI 989
S11.D.3.1.3 Explain the current scientific theories of the origin of the solar system and universe (e.g., big bang theory, solar nebular theory, stellar evolution).	Student Edition: 1002-1005 <i>Model and Invent Lab</i> 1006-1007 Teacher Wraparound Edition: A 1004; MI 1002; PR 1005

Teacher Wraparound Edition Codes

A	Activity
CU	Check for Understanding
DE	Demonstration
DI	Discussion
FF	Fun Fact
FYI	Teacher FYI
IA	Integrate Astronomy
IC	Integrate Chemistry
IE	Integrate Environment
IES	Integrate Earth Science
IH	Integrate History
IL	Inquiry Lab
IM	Integrate Math
IDM	Identify Misconceptions
MI	Main Idea
PR	Post Reading
QD	Quick Demo
RET	Reteach
SJ	Science Journal
TC	Think Critically
TPK	Tie to Previous Knowledge
VL	Visual Learning