



Science

LEVEL GREEN

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STANDARDS	PAGE REFERENCES
A1—Science as Inquiry and Process	
<p>SA Students develop an understanding of the processes and applications of scientific inquiry.</p> <p>SA1 Students develop an understanding of the processes of science used to investigate problems, design and conduct repeatable scientific investigations, and defend scientific arguments.</p> <p>SA2 Students develop an understanding that the processes of science require integrity, logical reasoning, skepticism, openness, communication, and peer review.</p> <p>SA3 Students develop an understanding that culture, local knowledge, history, and interaction with the environment contribute to the development of scientific knowledge, and that local applications provide opportunity for understanding scientific concepts and global issues.</p>	
The student develops an understanding of the processes of science by:	
<p>[7] SA1.1 asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring and communicating.*</p>	<p>Student Edition: 12-14, 16-18 <i>Lab</i> 488-489, 521 <i>Lab: Design Your Own</i> 108-109, 424-425, 550-551 <i>Launch Lab</i> 57, 559 <i>MiniLab</i> 14, 72</p> <p>Teacher Wraparound Edition: DIF 15; LD 14</p>

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<p>[7] SA1.2 collaborating to design and conduct simple repeatable investigations, in order to record, analyze (i.e., range, mean, median, mode), interpret data, and present findings. (L)</p>	<p>Student Edition: <i>Lab</i> 167, 168-169, 488-489 <i>Lab: Design Your Own</i> 108-109, 354-355, 424-425, 550-551 <i>Math Skill Handbook</i> 782 Teacher Wraparound Edition: DIF 15</p>
<p>The student demonstrates an understanding of the attitudes and approaches to scientific inquiry by:</p>	
<p>[7] SA2.1 identifying and <u>evaluating</u> the sources used to support scientific statements.</p>	<p>Student Edition: <i>Lab</i> 19 <i>Science Online</i> 17 <i>Science Skill Handbook</i> 748 <i>Time: Science and Society</i> 140, 204 Teacher Wraparound Edition: DI 18</p>
<p>The student demonstrates an understanding that interactions with the environment provide an opportunity for understanding scientific concepts by:</p>	
<p>[7] SA3.1 designing and conducting a simple investigation about the local environment. (L)</p>	<p>Student Edition: <i>Lab</i> 168-169 <i>Lab: Design Your Own</i> 108-109 <i>Lab: Model and Invent</i> 138-139, 202-203 Teacher Wraparound Edition: IL 574</p>

STANDARDS	PAGE REFERENCES
B1—Concepts of Physical Science	
<p>SB Students develop an understanding of the concepts, models, theories, universal principles, and facts that explain the physical world.</p> <p>SB1 Students develop an understanding of the characteristic properties of matter and the relationship of these properties to their structure and behavior.</p> <p>SB2 Students develop an understanding that energy appears in different forms, can be transformed from one form to another, can be transferred or moved from one place or system to another, may be unavailable for use, and is ultimately conserved.</p> <p>SB3 Students develop an understanding of the interactions between matter and energy, including physical, chemical, and nuclear changes, and the effects of these interactions on physical systems.</p> <p>SB4 Students develop an understanding of motions, forces, their characteristics and relationships, and natural forces and their effects.</p>	
The student demonstrates understanding of the structure and properties of matter by:	
<p>[7] SB1.1 using physical properties (i.e., density, boiling point, freezing point, conductivity) to differentiate among and/or separate materials (i.e., elements, compounds, and mixtures).</p>	<p>Student Edition: 594-597 <i>Lab</i> 48-49, 599 <i>MiniLab</i> 597</p> <p>Teacher Wraparound Edition: DIF 623; VL 597, 621</p>
The student demonstrates an understanding of how energy can be transformed, transferred, and conserved by:	
<p>[7] SB2.1 explaining that energy (i.e., heat, light, chemical, electrical, mechanical) <u>can change</u> form.</p>	<p>Student Edition: 261-263, 716-720, 721-723, 725-726 <i>Launch Lab</i> 715 <i>MiniLab</i> 723 <i>National Geographic</i> 724 <i>Science Online</i> 722 <i>Section Review</i> 265 (#2)</p> <p>Teacher Wraparound Edition: LD 722; SJ 718; TTPK 721</p>
The student demonstrates an understanding of how energy can be transformed, transferred, and conserved by:	
<p>[7] SB3.1 recognizing that most substances can exist as a solid, liquid, or gas depending <u>on the motion of its particles</u>.</p>	<p>Student Edition: 652-656, 657-659, 661-664 <i>Launch Lab</i> 651 <i>National Geographic</i> 660 <i>Section Review</i> 656 (#2)</p> <p>Teacher Wraparound Edition: AC 654; LD 655</p>

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The student demonstrates an understanding of motions, forces, their characteristics, relationships, and effects by:	
[7] SB4.1 illustrating that unbalanced forces will cause an object to accelerate.	Student Edition: 687-689, 690-693 <i>Lab: Design Your Own</i> 706-707 Teacher Wraparound Edition: AS 693; RT 693
[7] SB4.2 recognizing that electric currents and magnets can exert a force on each other.	The following page references can be incorporated to meet this standard. Student Edition: 563 Teacher Wraparound Edition: VL 563
[7] SB4.3 describing the characteristics of a wave (i.e., amplitude, wavelength, and frequency).	The following page references can be incorporated to meet this standard. Student Edition: 454 Teacher Wraparound Edition: DI 454; DIF 455; VL 454
C1—Concepts of Life Science	
<p>SC Students develop an understanding of the concepts, models, theories, facts, evidence, systems, and processes of life science.</p> <p>SC1 Students develop an understanding of how science explains changes in life forms over time, including genetics, heredity, the process of natural selection, and biological evolution.</p> <p>SC2 Students develop an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms.</p> <p>SC3 Students develop an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy.</p>	
The student demonstrates an understanding of how science explains changes in life forms over time, including genetics, heredity, the process of natural selection and biological evolution, by:	
[7] SC1.1 comparing and contrasting sexual and asexual reproduction.	Student Edition: 281-282, 284-285 Teacher Wraparound Edition: IL 282
[7] SC1.2 describing possible outcomes of mutations (i.e., no effect, damage, benefit).	Student Edition: 294-295, 317 <i>Lab: Use the Internet</i> 296-297 Teacher Wraparound Edition: IM 294; SJ 294; TFYI 317

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The student demonstrates an understanding of the structure, function, behavior, development, life cycles, and diversity of living organisms by:	
[7] SC2.1 describing the basic structure and function of plant and animal cells.	Student Edition: 214, 224-230 <i>Lab 231</i> <i>MiniLab 225</i> Teacher Wraparound Edition: AC 224; IL 226; MAM 228; UAA 227; VL 227
[7] SC2.2 identifying <u>the seven levels of classification</u> of organisms.	Student Edition: 218-219 <i>Reference Handbook 796-799</i> Teacher Wraparound Edition: DIF 219
[7] SC2.3 identifying and describing the functions of human organs (i.e., heart, lungs, brain).	Student Edition: 371, 401-404, 413-414, 420, 434-435, 453-454, 474-475 Teacher Wraparound Edition: MAM 413
The student demonstrates an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy by:	
[7] SC3.1 recognizing <u>and explaining</u> that organisms can cause physical and chemical changes (e.g., digestion, growth, respiration, photosynthesis) to matter and recognizing and explaining the importance of energy transfer in these changes.	Student Edition: 216, 226, 261-265, 544, 546-547 Teacher Wraparound Edition: AC 544; DIF 547; SJ 262; TTPK 261, 544
[7] SC3.2 classifying organisms within a food web as producers, consumers, or decomposers.	Student Edition: 262, 544, 546 <i>Section Review 265 (#1,#2), 549 (#2)</i> Teacher Wraparound Edition: AS 549; CFU 549; LD 546

STANDARDS	PAGE REFERENCES
D1—Concepts of Earth Science	
<p>SD Students develop an understanding of the concepts, processes, theories, models, evidence, and systems of earth and space sciences.</p> <p>SD1 Students develop an understanding of Earth’s geochemical cycles.</p> <p>SD2 Students develop an understanding of the origins, ongoing processes, and forces that shape the structure, composition, and physical history of the Earth.</p> <p>SD3 Students develop an understanding of the cyclical changes controlled by energy from the sun and by Earth’s position and motion in our solar system.</p> <p>SD4 Students develop an understanding of the theories regarding the evolution of the universe.</p>	
The student demonstrates an understanding of geochemical cycles by:	
<p>[7] SD1.1 <u>describing</u> the rock cycle and its relationship to igneous, metamorphic, and sedimentary rocks.</p>	<p>Student Edition: 59, 61, 63-64, 67-68, 71, 77 <i>MiniLab</i> 59 <i>National Geographic</i> 60 <i>Science Online</i> 64 Teacher Wraparound Edition: AC 60; CC 60; DIF 59</p>
<p>[7] SD1.2 explaining the water cycle’s connection to changes in the Earth’s surface.</p>	<p>Student Edition: 61, 72, 575 <i>Launch Lab</i> 559 Teacher Wraparound Edition: NG 3; TC 56</p>
The student demonstrates an understanding of the forces that shape Earth by:	
<p>[7] SD2.1 identifying strategies (e.g., reforestation, dikes, wind breaks, off road activity guidelines) for minimizing erosion.</p>	<p>Student Edition: 575 <i>Launch Lab</i> 559 <i>MiniLab</i> 562 Teacher Wraparound Edition: AS 559</p>
<p>[7] SD2.2 describing how the movement of the tectonic plates results in both slow changes (e.g., formation of mountains, ocean floors, and basins) and short-term events (e.g., volcanic eruptions, seismic waves, and earthquakes) on the surface.</p>	<p>The following page references can be incorporated to meet this standard. Student Edition: 33, 59, 62-64, 68, 162 <i>National Geographic</i> 60 Teacher Wraparound Edition: ATP 56; CC 162; TTPK 62</p>

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The student demonstrates an understanding of cycles influenced by energy from the sun and by Earth's position and motion in our solar system by:	
<p>[7] SD3.1 describing the weather using accepted meteorological terms (e.g., pressure systems, fronts, precipitation).</p>	<p>Student Edition: 118-125, 126-130, 132-133, 134-136 <i>Applying Math</i> 121 <i>Lab</i> 137 <i>Launch Lab</i> 117 <i>MiniLab</i> 120, 135 <i>National Geographic</i> 131 <i>Science Online</i> 127 Teacher Wraparound Edition: CC 128; DIF 127; IL 128; RT 136</p>
<p>[7] SD3.2 recognizing the relationship between phase changes (i.e., sublimation, condensation, evaporation) and energy transfer.</p>	<p>Student Edition: 657-659, 661-664 <i>Applying Science</i> 661 <i>Lab</i> 665 <i>MiniLab</i> 662 <i>National Geographic</i> 660 Teacher Wraparound Edition: DIF 661; QD 663; VL 663; VTE 660</p>
The student demonstrates an understanding of the theories regarding the origin and evolution of the universe by:	
<p>[7] SD4.1 <u>comparing</u> and contrasting characteristics of planets and stars (i.e., light reflecting, light emitting, orbiting, orbited, composition).</p>	<p>The following page references can be incorporated to meet this standard. Student Edition: 194-201 Teacher Wraparound Edition: CFU 201; IL 198</p>
<p>[7] SD4.2 using light-years to describe distances between objects in the universe.</p>	<p>The following page references can be incorporated to meet this standard. Student Edition: 194 <i>Section Review</i> 201 (#1)</p>

STANDARDS	PAGE REFERENCES
E1—Science and Technology	
<p>SE Students develop an understanding of the relationships among science, technology, and society.</p> <p>SE1 Students develop an understanding of how scientific knowledge and technology are used in making decisions about issues, innovations, and responses to problems and everyday events.</p> <p>SE2 Students develop an understanding that solving problems involves different ways of thinking, perspectives, and curiosity that lead to the exploration of multiple paths that are analyzed using scientific, technological, and social merits.</p> <p>SE3 Students develop an understanding of how scientific discoveries and technological innovations affect and are affected by our lives and cultures.</p>	
<p>The student demonstrates understanding of how to integrate scientific knowledge and technology to address problems by:</p>	
<p>[7] SE1.1 describing how public policy affects the student’s life (e.g., public waste disposal). (L)</p>	<p>The following page references can be incorporated to meet this standard.</p> <p>Student Edition: 321-323, 562-566, 568-576, 578-581, 730-737 <i>Integrate Social Studies</i> 563 <i>Lab: Using the Internet</i> 738-739</p> <p>Teacher Wraparound Edition: CDIV 322; SJ 564</p>
<p>The student demonstrates an understanding that solving problems involves different ways of thinking by:</p>	
<p>[7] SE2.1 identifying, designing, <u>testing</u>, and <u>revising solutions</u> to a <u>local</u> problem. (L)</p>	<p>The following page references can be incorporated to meet this standard.</p> <p>Student Edition: <i>Integrate Social Studies</i> 562 <i>Lab</i> 168-169 <i>Launch Lab</i> 559 <i>MiniLab</i> 562</p> <p>Teacher Wraparound Edition: AS 581; CFU 18; DIF 580; IL 574</p>
<p>[7] SE2.2 comparing the student’s work to the work of peers in order to identify multiple paths that can be used to investigate a question or problem.*(L)</p>	<p>Student Edition: <i>Lab: Design Your Own</i> 108-109, 354-355, 390-391, 424-425, 458-459, 550-551, 610-611, 674-675, 706-707 <i>Lab: Model and Invent</i> 138-139, 202-203, 582-583</p>

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<p>The student demonstrates an understanding of how scientific discoveries and technological innovations affect our lives and society by:</p>	
<p>[7] SE3.1 recognizing the effects of a past scientific discovery, invention, or scientific breakthrough (e.g., DDT, internal combustion engine).</p>	<p>Student Edition: 290-291, 307, 321-323, 379, 381, 570, 571 <i>Integrate History</i> 369 <i>Time: Science and History</i> 50, 392 Teacher Wraparound Edition: CC 379</p>
<p>F1—Cultural, Social, Personal Perspectives, and Science</p>	
<p>SF Students develop an understanding of the dynamic relationships among scientific, cultural, social, and personal perspectives.</p> <p>SF1 Students develop an understanding of the interrelationships among individuals, cultures, societies, science, and technology.</p> <p>SF2 Students develop an understanding that some individuals, cultures, and societies use other beliefs and methods in addition to scientific methods to describe and understand the world.</p> <p>SF3 Students develop an understanding of the importance of recording and validating cultural knowledge.</p>	
<p>The student demonstrates an understanding of the dynamic relationships among scientific, cultural, social, and personal perspectives by:</p>	
<p>[7] SF1.1-SF3.1 investigating the basis of local knowledge (e.g., describing and predicting weather) and sharing that information. (L) Cross referenced with SA3.1</p>	<p>Student Edition: 134-136 <i>Lab</i> 137, 168-169 <i>Lab: Model and Invent</i> 202-203 <i>Lab: Use the Internet</i> 738-739 <i>MiniLab</i> 135 Teacher Wraparound Edition: AS 136</p>

STANDARDS	PAGE REFERENCES
G1—History and Nature of Science	
<p>SG Students develop an understanding of the history and nature of science.</p> <p>SG1 Students develop an understanding that historical perspectives of scientific explanations demonstrate that scientific knowledge changes over time, building on prior knowledge.</p> <p>SG2 Students develop an understanding that the advancement of scientific knowledge embraces innovation and requires empirical evidence, repeatable investigations, logical arguments, and critical review in striving for the best possible explanations of the natural world.</p> <p>SG3 Students develop an understanding that scientific knowledge is ongoing and subject to change as new evidence becomes available through experimental and/or observational confirmation(s).</p> <p>SG4 Students develop an understanding that advancements in science depend on curiosity, creativity, imagination, and a broad knowledge base.</p>	
<p>The student demonstrates an understanding of the bases of the advancement of scientific knowledge by:</p>	
<p>[7] SG2.1 <u>explaining</u> differences in results of repeated experiments.</p>	<p>The following page references can be incorporated to meet this standard.</p> <p>Student Edition: <i>Lab: Design Your Own</i> 108-109, 354-355, 424-425, 550-551 <i>Lab: Model and Invent</i> 138-139, 202-203</p>
<p>The student demonstrates an understanding that scientific knowledge is ongoing and subject to change by:</p>	
<p>[7] SG3.1 revising a personal idea when presented with experimental/observational data inconsistent with that personal idea (e.g., the rates of falling bodies of different masses). (L)</p>	<p>The following page references can be incorporated to meet this standard.</p> <p>Student Edition: 12-14, 16-18 <i>Lab: Design Your Own</i> 108-109, 458-459, 674-675 <i>National Geographic</i> 15</p> <p>Teacher Wraparound Edition: IM 341, 388, 564, 571</p>