



Science

LEVEL GREEN

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STANDARDS	PAGE REFERENCES
<p>Content Standard 1—Students design, conduct, evaluate, and communicate processes and results of scientific investigations, and demonstrate thinking skills associated with this procedural knowledge.</p>	
<p>1. identify a question, determine relevant variables, formulate a testable hypothesis, plan and predict the outcome of an investigation, safely conduct scientific investigation, and compare and analyze data.</p>	<p>Student Edition: 12-14, 16-18 <i>Lab: Design Your Own</i> 108-109, 354-355, 550-551 <i>Science Online</i> 16 Teacher Wraparound Edition: DIF 15; IL 16</p>
<p>2. select and accurately use appropriate tools including technology to make measurements (in metric units), gather, process and analyze data from scientific investigations.</p>	<p>Student Edition: <i>Lab</i> 167, 168-169, 193, 438, 488-489, 642-643 <i>Lab: Design Your Own</i> 108-109, 236-237, 354-355 <i>Lab: Model and Invent</i> 138-139, 582-583 <i>Science Skill Handbook</i> 752-755</p>
<p>3. critically review, communicate and defend results of investigations.</p>	<p>Student Edition: 18 <i>Lab</i> 167, 266-267, 488-489 <i>Lab: Design Your Own</i> 108-109, 324-325, 550-551 <i>Science Skill Handbook</i> 756 Teacher Wraparound Edition: AIL 488</p>

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<p>4. create models to illustrate scientific concepts and use the model to predict change. (e.g., computer simulation, stream table, graphic representation)</p>	<p>Student Edition: <i>Lab</i> 20-21 <i>Lab: Design Your Own</i> 108-109, 674-675, 706-707 <i>Lab: Model and Invent</i> 202-203, 582-583 <i>Launch Lab</i> 467 <i>MiniLab</i> 225, 281, 291, 368 Teacher Wraparound Edition: IL 340; MAM 293; QD 293</p>
<p>5. identify strengths and weakness in an investigation design.</p>	<p>Student Edition: <i>Lab: Design Your Own</i> 108-109, 354-355, 424-425, 458-459, 550-551 Teacher Wraparound Edition: DIF 15</p>
<p>Content Standard 2—Students demonstrate knowledge of properties, forms, changes and interactions of physical and chemical systems, and demonstrate thinking skills associated with this knowledge.</p>	
<p>1. classify, describe, and manipulate physical models of matter in terms of: elements, and compounds, pure substances and mixtures, atoms, and molecules.</p>	<p>Student Edition: 246-251, 620-625 Teacher Wraparound Edition: DIF 247, 249; MAM 621; QD 249, 622</p>
<p>2. examine, describe, compare and classify objects and substances based on common physical properties and simple chemical properties.</p>	<p>Student Edition: 36-40, 594-598 <i>Applying Science</i> 38 <i>Lab</i> 599 <i>MiniLab</i> 596, 597 Teacher Wraparound Edition: AS 598; DIF 595; LD 38; TTPK 36</p>
<p>3. describe energy and compare and contrast the characteristics of light, heat, motion, magnetism, electricity, sound and mechanical waves.</p>	<p>Student Edition: 454, 657-659, 716-720, 721-723, 725-727 <i>Integrate Physics</i> 658 <i>Lab</i> 728 <i>Launch Lab</i> 715 Teacher Wraparound Edition: AC 718; DI 719; IL 717; IM 658</p>

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<p>4. model and explain the states of matter are dependent upon the quantity of energy present in the system and describe what will change and what will remain unchanged at the particulate level when matter experiences an external force or energy change.</p>	<p>Student Edition: 601, 651-656, 657-659, 661-664 <i>Applying Science</i> 661 <i>Lab</i> 665 <i>Launch Lab</i> 651 <i>MiniLab</i> 662 <i>National Geographic</i> 660 Teacher Wraparound Edition: AC 660; DIF 661; IM 659; QD 663</p>
<p>5. identify, build, describe, measure, and analyze mechanical systems (e.g., simple and complex machines) and describe the forces acting within those systems.</p>	<p>Student Edition: 440, 690-693, 694-698, 700, 702-705 <i>Applying Math</i> 695 <i>Lab</i> 701 <i>Lab: Design Your Own</i> 706 <i>Launch Lab</i> 683 <i>National Geographic</i> 441, 699 <i>Science Online</i> 692 <i>Time: Science and Society</i> 708 Teacher Wraparound Edition: AC 441; DI 708</p>
<p>6. analyze data in simple scientific contexts. (e.g., density)</p>	<p>Student Edition: <i>Applying Math</i> 671 <i>Applying Science</i> 631 <i>Lab</i> 642-643, 701 <i>Lab: Design Your Own</i> 706-707 <i>Launch Lab</i> 619 <i>MiniLab</i> 596 Teacher Wraparound Edition: IL 628</p>
<p>Content Standard 3—Students demonstrate knowledge of characteristics, structures and function of living things, the process and diversity of life, and how living organisms interact with each other and their environment, and demonstrate thinking skills associated with this knowledge.</p>	
<p>1. compare the structure and function of prokaryotic cells (bacteria) and eukaryotic cells (plant, animal, etc.).</p>	<p>Student Edition: 224-230 <i>Lab</i> 231 Teacher Wraparound Edition: AC 224; AS 230, 231; DI 224; QD 224; VL 227</p>

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2. explain how organisms and systems of organisms obtain and use energy resources to maintain stable conditions (e.g., photosynthesis, respiration).	Student Edition: 216, 226, 261-265 <i>Lab</i> 266-267 Teacher Wraparound Edition: TTPK 261; UAA 216; VL 265
3. communicate the differences in the reproductive processes of a variety of plants and animals using the principles of genetic modeling (e.g., Punnet squares).	Student Edition: 281-282, 284-287, 306-308, 310-312 <i>Applying Math</i> 311 <i>MiniLab</i> 308 <i>National Geographic</i> 309 Teacher Wraparound Edition: IL 282, 307
4. investigate and explain the interdependent nature of both the individuals and species in the environment and explain how they are affected by human interaction.	Student Edition: 534-537, 539-543, 544-547 <i>Applying Science</i> 546 <i>Lab</i> 538 <i>Launch Lab</i> 531 <i>MiniLab</i> 542 Teacher Wraparound Edition: AC 534; ATP 530; DIF 542
5. create and use a basic classification scheme to identify plants and animals, preferably using indigenous plants and animals.	Student Edition: 213, 219-220, 505 <i>Lab</i> 521 <i>Launch Lab</i> 213 <i>National Geographic</i> 504 Teacher Wraparound Edition: AC 220; DIF 219
6. utilize correlational (e.g., population growth) and probabilistic (e.g., genetic sampling) thinking skills in simple contexts.	Student Edition: 310, 539-540 <i>Applying Math</i> 311 <i>Lab</i> 313 <i>Lab: Design Your Own</i> 550-551 <i>Science Online</i> 540 Teacher Wraparound Edition: IL 307; QD 319; TFYI 535

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<p>Content Standard 4—Students demonstrate knowledge of the composition, structures, processes and interactions of Earth’s systems and other objects in space, and demonstrate thinking skills associated with this knowledge.</p>	
<p>1. model and explain the internal structure of the earth and describe the formation and composition of earth’s external features in terms of the rock cycle and plate tectonics.</p>	<p>Student Edition: 59, 61, 62, 77, 162 <i>MiniLab</i> 59 <i>National Geographic</i> 60 <i>Section Review</i> 61 (#6) Teacher Wraparound Edition: CC 162</p>
<p>2. differentiate between both rock types and mineral types and classify both by how they are formed and the utilization by humans. (e.g., arrowheads, cooking tools)</p>	<p>Student Edition: 30-31, 33-34, 36-40, 41-47, 58-59, 61, 62-65, 67-70, 71-77 <i>Applying Science</i> 38 <i>Lab</i> 66, 78-79 <i>Launch Lab</i> 29, 57 <i>National Geographic</i> 60 Teacher Wraparound Edition: LD 38</p>
<p>3. explain scientific theories about how fossils are used as evidence of changes over time.</p>	<p>Student Edition: 343-345, 347, 351 <i>Integrate Earth Science</i> 347 <i>Science Online</i> 345 Teacher Wraparound Edition: MAM 345; TFYI 344</p>
<p>4. describe the water cycle, the composition and structure of the atmosphere and the impact of oceans on large scale weather patterns.</p>	<p>Student Edition: 90-97, 99-102, 103-104, 106-107, 157, 548 <i>MiniLab</i> 157, 548 <i>National Geographic</i> 158-159 <i>Science Online</i> 92 Teacher Wraparound Edition: CFU 97; SJ 101</p>
<p>5. describe and model the motion and tilt of earth in relation to the sun, and explain the concepts of day, night, seasons, year, and climatic changes.</p>	<p>Student Edition: 156, 162, 180-183 <i>Lab: Model and Invent</i> 202-203 <i>Science Online</i> 181 Teacher Wraparound Edition: DI 181; LD 180; RT 183; TFYI 179; TTPK 178</p>

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6. describe the earth, moon, planets and other objects in space in terms of size, structure, and movement in relation to the sun.	Student Edition: 178-183, 184-190, 194-200 <i>MiniLab</i> 186 <i>Science Online</i> 198 Teacher Wraparound Edition: AC 197; DIF 195; IL 198; MAM 195
7. identify scientific theories about the origin and evolution of the earth and solar system.	Student Edition: 190, 192, 201 <i>National Geographic</i> 191 <i>Section Review</i> 201 (#4) Teacher Wraparound Edition: AC 191
Content Standard 5—Students understand how scientific knowledge and technological developments impact today's societies and cultures.	
1. describe the specific fields of science and technology as they relate to occupations within those fields.	Student Edition: 343 <i>Integrate Career</i> 74, 161, 196, 263, 277, 317, 480, 534 Teacher Wraparound Edition: IC 317, 534
2. apply scientific knowledge and process skills to understand issues and everyday events.	Student Edition: 157, 160-166, 317-320, 321-323 <i>Applying Science</i> 732 <i>Integrate Environment</i> 322 <i>Lab: Use the Internet</i> 738-739 <i>National Geographic</i> 158-159 <i>Time: Science and Society</i> 204, 426 Teacher Wraparound Edition: CDIV 322; DI 204; LD 164
3. simulate collaborative problem solving and give examples of how scientific knowledge and technology are shared with other scientists and the public.	Student Edition: 6-11, 18 <i>Lab</i> 20-21 <i>Lab: Design Your Own</i> 108-109, 550-551 <i>Science Skill Handbook</i> 756 <i>Time: Science and Society</i> 426 Teacher Wraparound Edition: DI 18; DIV 18

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<p>4. use scientific knowledge to investigate problems and their proposed solutions and evaluate those solutions while considering environmental impacts.</p>	<p>Student Edition: 568-576, 578-581 <i>Applying Science</i> 580, 661, 732 <i>Lab: Model and Invent</i> 582-583 <i>Lab: Use the Internet</i> 738-739 <i>Time: Science and Society</i> 140, 204, 426 Teacher Wraparound Edition: AS 581; DE 140; ITI 204</p>
<p>Content Standard 6—Students understand historical developments in science and technology.</p>	
<p>1. trace developments that demonstrate scientific knowledge is subject to change as new evidence becomes available.</p>	<p>Student Edition: 190, 192, 221, 290-291, 307, 335-337, 381-382 <i>National Geographic</i> 191 <i>Time: Science and History</i> 392 Teacher Wraparound Edition: IM 335; SJ 336</p>
<p>2. identify major milestones in science that have impacted science, technology, and society.</p>	<p>Student Edition: 190, 221, 290-291, 307, 335-337, 381-382 <i>National Geographic</i> 222-223 <i>Time: Science and History</i> 392 Teacher Wraparound Edition: DIF 191; RE 392; SJ 222</p>
<p>3. describe and explain science as a human endeavor.</p>	<p>Student Edition: 6-11, 12-14, 16-18 <i>National Geographic</i> 15 <i>Oops! Accidents in Science</i> 298, 524 <i>Time: Science and History</i> 50, 238, 392 <i>Time: Science and Society</i> 426 Teacher Wraparound Edition: CB 426; RE 392</p>