



Physical Science

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STANDARDS	PAGE REFERENCES
<p>Grade 6</p> <p>It is essential that these standards be addressed in contexts that promote scientific inquiry, use of evidence, critical thinking, making connections, and communication.</p>	
<p>6.1 <u>Structure and Function:</u> Living and non-living systems are organized groups of related parts that function together and have characteristics and properties.</p>	
<p>6.1P.1 Describe physical and chemical properties of matter and how they can be measured.</p>	<p>Student Edition: 458-461, 477 <i>Mini Lab</i> 460 <i>Section 2 Review</i> 465 Teacher Wraparound Edition: A 461; As 460, 465; DI 459; QD 459; Re 465; SCB 448E; SSH 794-795</p>
<p>6.1P.2 Compare and contrast the characteristic properties of forms of energy.</p>	<p>Student Edition: 101, 107-108, 159-160, 167, 210, 357, 646 <i>Figure 9</i> 167 <i>Science Online</i> 160 Teacher Wraparound Edition: Di 167; IM 167; SJ 101, 166, 357; TPK 646</p>

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<p>6.2 Interaction and Change: The related parts within a system interact and change.</p>	
<p>6.2P.1 Describe and compare types and properties of waves and explain how they interact with matter.</p>	<p>Student Edition: 290-293, 296-301 <i>Integrate Earth Science</i> 295 <i>Integrate Social Studies</i> 299 <i>Lab</i> 302, 312-313 <i>Launch Lab</i> 289 <i>National Geographic</i> 294 Teacher Wraparound Edition: A 294, 297; As 289, 295, 302; NG 294; QD 298; SCB 288E</p>
<p>6.2P.2 Describe the relationships between: electricity and magnetism, static and current electricity, and series and parallel electrical circuits.</p>	<p>Student Edition: 192, 200-201, 207-208, 231-233 <i>Design Your Own Lab</i> 214-215 <i>Figure 10</i> 233 <i>Lab</i> 245 Teacher Wraparound Edition: As 214, 245; BI 190; DI 232; IM 201; LD 208; TFYI 232; TPK 192; VL 233</p>
<p style="text-align: center;">Grade 7</p> <p style="text-align: center;">It is essential that these standards be addressed in contexts that promote scientific inquiry, use of evidence, critical thinking, making connections, and communication.</p>	
<p>7.1 Structure and Function: Living and non-living systems are composed of components which affect the characteristics and properties of the system.</p>	
<p>7.1P.1 Explain that all matter is made of atoms, elements are composed of a single kind of atom, and compounds are composed of two or more elements.</p>	<p>Student Edition: 507-508, 602-603, 606 <i>Figure 6</i> 606 <i>Lab</i> 607 <i>Mini Lab</i> 509 Teacher Wraparound Edition: As 509, 606; Di 603</p>

STANDARDS	PAGE REFERENCES
<p>7.2 Interaction and Change: The components and processes within a system interact.</p>	
<p>7.2P.1 Identify and describe types of motion and forces and relate forces qualitatively to the laws of motion and gravitation.</p>	<p>Student Edition: 52-56, 70-73, 75-77, 81-82 <i>Communicating Your Data</i> 59 <i>Design Your Own Lab</i> 58-59 <i>Figure 16</i> 53 <i>Lab 57</i> <i>Launch Lab</i> 67 <i>Mini Lab</i> 54 <i>National Geographic</i> 85</p> <p>Teacher Wraparound Edition: A 55; As 54, 57, 59; DI 54, 71, 77; Di 55; MM 54; NG 85; QD 53; Re 56; TPK 75; VL 53</p>
<p style="text-align: center;">Grade 8</p> <p style="text-align: center;">It is essential that these standards be addressed in contexts that promote scientific inquiry, use of evidence, critical thinking, making connections, and communication.</p>	
<p>8.1 Structure and Function: Systems and their components function at various levels of complexity.</p>	
<p>8.1P.1 Describe the atomic model and explain how the types and arrangements of atoms determine the physical and chemical properties of elements and compounds.</p>	<p>Student Edition: 511-515, 520-523, 538-539, 578, 582, 584 <i>Lab</i> 583 <i>Launch Lab</i> 568</p> <p>Teacher Wraparound Edition: A 461, 522; AP 568; As 515, 569; BI 568; DI 514; Di 580; IL 523; LD 579; Re 524; VL 538</p>
<p>8.1P.2 Explain how the Periodic Table is an organization of elements based on their physical and chemical properties.</p>	<p>Student Edition: 521-523, 570-576, 578-580, 582, 584-585, 587-589 <i>Mini Lab</i> 574 <i>Periodic Table of the Elements</i> 518-519</p> <p>Teacher Wraparound Edition: A 575; As 574, 583; Di 576; TFYI 518, 572; TPK 578</p>
<p>8.1P.3 Explain how the motion and spacing of particles determines states of matter.</p>	<p>Student Edition: 476-479, 482-483 <i>Figure 2-5</i> 477-478 <i>Integrate Astronomy</i> 480 <i>Science Online</i> 479 <i>Section 1 Review</i> 483</p> <p>Teacher Wraparound Edition: BI 474; CU 483; Re 483; TPK 476</p>

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8.2 Interaction and Change: Systems interact with other systems.	
8.2P.1 Compare and contrast physical and chemical changes and describe how the law of conservation of mass applies to these changes.	Student Edition: 460-465, 632-634 <i>Law of Conservation of Mass</i> 463 <i>Mini Lab</i> 460 <i>Science Online</i> 464 <i>Section 2 Review</i> 465 Teacher Wraparound Edition: As 460; CU 465; IM 448F, 464; QD 464, 633; Re 465; VL 461
8.2P.2 Explain how energy is transferred, transformed, and conserved.	Student Edition: 87-88, 107-109, 111-112, 135, 256 <i>Launch Lab</i> 99 <i>Mini Lab</i> 112 <i>National Geographic</i> 110 Teacher Wraparound Edition: As 112, 115; DI 108; LD 110; MM 108; NG 110; QD 108; SCB 98F; USW 111; VL 108
8.3 Scientific Inquiry: Scientific inquiry is the investigation of the natural world based on observation and science principles that includes proposing questions or hypotheses, designing procedures for questioning, collecting, analyzing, and interpreting multiple forms of accurate and relevant data to produce justifiable evidence-based explanations and new explorations.	
8.3S.1 Based on observations and science principles propose questions or hypotheses that can be examined through scientific investigation. Design and conduct a scientific investigation that uses appropriate tools, techniques, independent and dependent variables, and controls to collect relevant data.	Student Edition: <i>Design Your Own Lab</i> 28-29, 58-59, 116-117, 214-215, 246-247, 344-345, 406-407, 592-593, 622-623, 716-717 Teacher Wraparound Edition: AIL 58, 214, 246, 406, 716; As 117
8.3S.2 Organize, display, and analyze relevant data, construct an evidence-based explanation of the results of a scientific investigation, and communicate the conclusions including possible sources of error. Suggest new investigations based on analysis of results.	Student Edition: <i>Communicating Your Data</i> 29, 59, 623, 717 <i>Design Your Own Lab</i> 29, 59, 117, 215, 247, 345, 407, 593, 623, 717 Teacher Wraparound Edition: As 29, 345, 623; CYD 29, 59, 117, 717; EA 29, 59, 215, 247, 407

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<p>8.3S.3 Explain how scientific explanations and theories evolve as new information becomes available.</p>	<p>Student Edition: 507-508, 516-517 <i>Integrate Astronomy</i> 524 <i>Integrate History</i> 540 <i>National Geographic</i> 510, 590, 769 <i>Oops! Accidents in Science</i> 750 Teacher Wraparound Edition: A 510, 540; AE 750; CU 511; Di 507; IM 519; NG 510, 590, 769; SJ 523</p>	
<p>8.4 Engineering Design: Engineering design is a process of identifying needs, defining problems, identifying constraints, developing solutions, and evaluating proposed solutions.</p>		
	<p>8.4D.1 Define a problem that addresses a need, and using relevant science principles investigate possible solutions given specified criteria, constraints, priorities, and trade-offs.</p>	<p>Student Edition: <i>Design Your Own Lab</i> 28, 58-59, 344-345 <i>Model and Invent Lab</i> 148 Teacher Wraparound Edition: AIL 58, 278, 344, 778; IL 174, 234, 479, 774</p>
	<p>8.4D.2 Design, construct, and test a proposed engineering design solution and collect relevant data. Evaluate a proposed design solution in terms of design and performance criteria, constraints, priorities, and trade-offs. Identify possible design improvements.</p>	<p>Student Edition: <i>Design Your Own Lab</i> 28-29, 344-345 <i>Model and Invent Lab</i> 148-149 Teacher Wraparound Edition: AIL 344, 778; As 29; IL 174, 234, 328, 479, 774</p>
	<p>8.4D.3 Explain how creating a new technology requires considering societal goals, costs, priorities, and trade-offs.</p>	<p>Student Edition: 262-263, 267-269, 272, 556 <i>Integrate Environment</i> 772 <i>Lab</i> 278-279, 652-653 <i>Time Science and History</i> 560 Teacher Wraparound Edition: A 262, 268; AIL 278, 652; As 556, 653; CYD 279; DI 554; Di 262, 280; IM 273; Re 263</p>