



Physical Science

© 2005

STANDARDS	PAGE REFERENCES
<p>Science As Inquiry requires students to combine processes and scientific knowledge with scientific reasoning and critical thinking to develop their understanding of science.</p>	
<p>8.2.1 By the end of eighth grade, students will develop the abilities needed to do scientific inquiry.</p>	
<ul style="list-style-type: none"> Identify questions and form hypotheses that can be examined through scientific investigations. 	<p>Student Edition: 7-8 <i>Applying Science</i> 744, 766 <i>Design Your Own LAB</i> 58-59, 116-117, 214-215, 344-345, 406-407, 592-593, 716-717 <i>Science Skill Handbook</i> 788-792 <i>Technology Skill Handbook</i> 814-815 <i>Use the Internet LAB</i> 278-279, 652-653</p> <p>Teacher Wraparound Edition: A 9; FF 8; TC 4</p>
<ul style="list-style-type: none"> Design and conduct a scientific investigation. 	<p>Student Edition: 8-10 <i>Design Your Own LAB</i> 58-59, 116-117, 214-215, 344-345, 406-407, 592-593, 716-717 <i>LAB</i> 90-91, 312-313, 686-687, 778-779 <i>Science Skill Handbook</i> 792-795</p> <p>Teacher Wraparound Edition: CU 13; QD 10</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Use appropriate tools and techniques to gather, analyze, and interpret data. 	<p>Student Edition: 11, 14-21, 22-26 <i>Applying Science</i> 269, 514 <i>Integrate Physics</i> 30 <i>LAB</i> 89, 366, 484, 496-497, 680, 778-779 <i>MiniLAB</i> 19 <i>National Geographic</i> 20 <i>Science Skill Handbook</i> 792-796 <i>Use the Internet LAB</i> 278-279, 652-653</p> <p>Teacher Wraparound Edition: A 17; LD 25; TPK 14</p>
<ul style="list-style-type: none"> Given evidence, develop descriptions, explanations, predictions, and models. 	<p>Student Edition: 6-11 <i>Applying Science</i> 269, 514, 766 <i>Integrate Physics</i> 30 <i>LAB</i> 277, 366, 735, 778-779 <i>Science and History</i> 118, 376 <i>Science Skill Handbook</i> 796 <i>Use the Internet LAB</i> 278-279, 652-653</p> <p>Teacher Wraparound Edition: D 11; IL 12</p>
<ul style="list-style-type: none"> Show the relationship between evidence and explanations. 	<p>Student Edition: 10, 22-26 <i>Design Your Own LAB</i> 58-59, 592-593 <i>Integrate Physics</i> 30 <i>Model and Invent LAB</i> 148-149, 558-559 <i>Science and History</i> 376, 560 <i>Science and Society</i> 346, 718 <i>Science Skill Handbook</i> 795-796</p> <p>Teacher Wraparound Edition: FF 8; IL 12; R 13</p>
<ul style="list-style-type: none"> Recognize and analyze alternative explanations and predictions. 	<p>Student Edition: 6-10, 12-13 <i>National Geographic</i> 188-189, 566-567 <i>Science and History</i> 118 <i>Science and Society</i> 280, 718 <i>Science Skill Handbook</i> 796 <i>Use the Internet LAB</i> 652-653</p> <p>Teacher Wraparound Edition: FF 8; SJ 11; TPK 6</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Communicate scientific procedures and explanations. 	<p>Student Edition: 7-10, 22-26 <i>Integrate Physics</i> 30 <i>LAB</i> 484, 735, 778-779 <i>Science and History</i> 248, 314, 528 <i>Science and Society</i> 150, 718, 780</p> <p>Teacher Wraparound Edition: A 9; CU 13; IL 12</p>
<ul style="list-style-type: none"> Use mathematics in scientific inquiry. 	<p>Student Edition: 16-21, 22-26, 43, 48-51, 70, 76-82 <i>Applying Math</i> 69, 86, 102, 162, 487 <i>Design Your Own LAB</i> 58-59 <i>National Geographic</i> 20</p> <p>Teacher Wraparound Edition: DI 76, 86; FYI 78; IL 80</p>
<p>Physical Science focuses on science facts, concepts, principles, theories, and models that are important for all students to know, understand and use.</p>	
<p>8.3.1 By the end of eighth grade, students will develop an understanding of properties and changes of properties in matter.</p>	
<ul style="list-style-type: none"> Investigate and demonstrate that characteristic properties of a substance (e.g., density, boiling point, and solubility) do not depend on the amount of the substance. 	<p>Student Edition: 460-461, 464-465, 479, 486-487, 512-513, 570-577, 578-582 <i>LAB</i> 496-497 <i>MiniLAB</i> 486</p> <p>Teacher Wraparound Edition: DI 488; QD 481</p>
<ul style="list-style-type: none"> Observe, describe, and measure physical and chemical properties of matter. 	<p>Student Edition: 458-461, 480-483, 492-495, 544-545, 570-575, 578-582, 584-588, 671-673, 728-729, 759-760 <i>Design Your Own LAB</i> 592-593 <i>LAB</i> 496-497 <i>MiniLAB</i> 486</p> <p>Teacher Wraparound Edition: FYI 480, 585; LD 460; MM 461; QD 463</p>
<ul style="list-style-type: none"> Explain that all matter is composed of elements which may combine in a variety of ways to form compounds. 	<p>Student Edition: 450-452, 570-575, 578-582, 584-587, 602-606, 608-612, 615-621, 638-640, 726-730, 736-741</p> <p>Teacher Wraparound Edition: A 610; FYI 603; IM 452</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Investigate and explain that in chemical reactions new properties are created and total mass is conserved. 	<p>Student Edition: 632-637, 638-640, 641-645, 767-768 <i>Accidents in Science</i> 624, 654, 750 <i>LAB</i> 466-467, 735, 748-749, 777 <i>Science and Society</i> 780 <i>Use the Internet LAB</i> 652-653</p> <p>Teacher Wraparound Edition: CU 640; QD 633, 642; TPK 632</p>
<p>8.3.2 By the end of eighth grade, students will develop an understanding of motion and forces.</p>	
<ul style="list-style-type: none"> Investigate and describe the motion of an object by its position, direction of motion, and speed. 	<p>Student Edition: 38-46, 47-51 <i>Applying Math</i> 40 <i>Design Your Own LAB</i> 58-59 <i>LAB</i> 57 <i>Launch Lab</i> 37 <i>Science and History</i> 92</p> <p>Teacher Wraparound Edition: IL 44; IM 43; SJ 41</p>
<ul style="list-style-type: none"> Investigate and demonstrate that the speed and/or direction of an object changes when a force is applied to that object. 	<p>Student Edition: 47-51, 52-56, 68-74, 75-82, 86-88 <i>Design Your Own LAB</i> 58-59 <i>LAB</i> 57, 89, 90-91</p> <p>Teacher Wraparound Edition: FYI 86; MM 54; QD 53, 69; TPK 52; VL 72</p>
<p>8.3.3 By the end of eighth grade, students will develop an understanding of the forms of energy and how energy is transferred.</p>	
<ul style="list-style-type: none"> Investigate and describe the transfer of light energy. 	<p>Student Edition: 100-101, 131, 271-272, 394-399 <i>National Geographic</i> 397</p> <p>Teacher Wraparound Edition: D 395; VL 272</p>
<ul style="list-style-type: none"> Investigate and demonstrate how energy is transferred using simple machines. 	<p>Student Edition: 127-129, 134-137, 138-146 <i>Model and Invent LAB</i> 148-149</p> <p>Teacher Wraparound Edition: FF 146; TC 124</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Investigate and describe how heat is transferred from a warmer object to a cooler object until both reach the same temperature. 	<p>Student Edition: 158-163, 164-170, 172-179 <i>LAB</i> 171, 180-181</p> <p>Teacher Wraparound Edition: IL 174; LD 165; QD 173; R 170</p>
<ul style="list-style-type: none"> Investigate and describe the properties and transfer of sound energy. 	<p>Student Edition: 322-326, 327-332, 339-343 <i>Design Your Own LAB</i> 344-345 <i>Science and Society</i> 346</p> <p>Teacher Wraparound Edition: FYI 328; R 332, 343; SJ 336; TC 320</p>
<ul style="list-style-type: none"> Investigate and describe the transfer of energy from electrical and magnetic sources to different energy forms (e.g., heat, light, sound, and chemical). 	<p>Student Edition: 207-213, 231-233, 341-343, 361-363, 365, 367-368, 370-373, 394-399 <i>Applying Math</i> 212 <i>Design Your Own LAB</i> 214-215 <i>LAB</i> 206 <i>National Geographic</i> 369 <i>Science and History</i> 248</p> <p>Teacher Wraparound Edition: CD 210; FYI 342; QD 368; SJ 398; TPK 231</p>