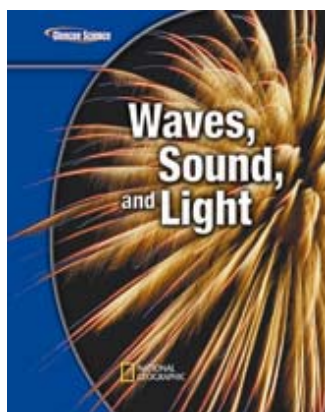
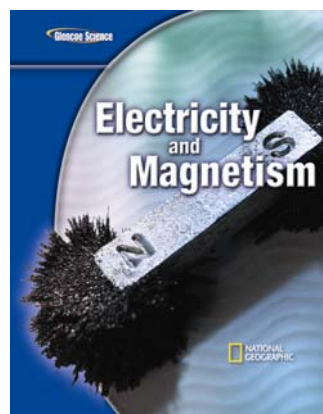


The Nature of Matter K
Chemistry L
Motion, Forces, and Energy M
Electricity and Magnetism N
Waves, Sound, and Light O



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STANDARDS

PAGE REFERENCES

Physical Science Grades 5-6

PS1– All living and nonliving things are composed of matter having characteristic properties that distinguish one substance from another (independent of size/amount of substance).

STANDARDS	PAGE REFERENCES
1. COMPOSITION	
<p>S:PS1:6:1.1 Recognize that all matter is composed of minute particles called atoms; and explain that all substances are composed of atoms, each arranged into different groupings.</p>	<p>Student Edition: (K) 8-9, 18, 40 <i>Chapter Study Guide 33</i> (L) 8, 64 Teacher Wraparound Edition: (K) UA 9 (L) TPK 8</p>
<p>S:PS1:6:1.2 Identify elements as substances that contain only one kind of atom; and explain that elements do not break down by normal laboratory reactions, such as heating, exposure to electric current, and reaction to acid.</p>	<p>Student Edition: (K) 9, 18 (L) 64 <i>Model and Invent Lab 26-27</i> Teacher Wraparound Edition: (L) QD 66</p>
<p>S:PS1:6:1.3 Recognize that over one hundred elements exist, and identify the periodic table as a tool for organizing the information about them.</p>	<p>Student Edition: (K) 18-19, 99-103, 105-111 <i>Applying Science 103</i> <i>Lab 24</i> Teacher Wraparound Edition: (K) A 9, 20; IL 110; R 23; TPK 105</p>
2. PROPERTIES	
<p>S:PS1:6:2.1 Identify elements according to their common properties, such as highly reactive metals, less reactive metals, highly reactive non-metals and almost non-reactive gases.</p>	<p>Student Edition: (K) 22-23, 102, 105-114 <i>Lab 24, 117</i> (L) 12-13 Teacher Wraparound Edition: (K) A 20; CU 23; LD 103; SJ 101</p>
<p>S:PS1:6:2.2 Identify substances by their physical and chemical properties, such as magnetism, conductivity, density, solubility, boiling and melting points.</p>	<p>Student Edition: (K) 72-76 <i>Lab 30-31, 117</i> <i>MiniLab 75</i> Teacher Wraparound Edition: (L) IL 20 (N) A 12</p>

STANDARDS	PAGE REFERENCES
S:PS1:6:2.3 Differentiate between weight and mass.	Student Edition: (K) 74 (M) 43-44 <i>Standardized Test Practice 62 #4</i> Teacher Wraparound Edition: (M) DI 43
S:PS1:6:2.4 Identify energy as a property of many substances.	Student Edition: (K) 45 (L) 110-113 <i>Applying Science 112</i> (M) 126-130, 161 Teacher Wraparound Edition: (M) A 128; D 129; IM 135
PS2– Energy is necessary for change to occur in matter. Energy can be stored, transferred and transformed, but cannot be destroyed.	
1. CHANGE	
S:PS2:6:1.1 Differentiate between a physical change, such as melting, and a chemical change, such as rusting.	Student Edition: (K) 78-85 <i>MiniLab 81</i> (L) 36 <i>Lab 53</i> <i>National Geographic 37</i> Teacher Wraparound Edition: (K) CU 87; IL 82; MM 79; SJ 82 (L) QD 39
2. CONSERVATION	
S:PS2:6:2.1 Describe how mass remains constant in a closed system and provide examples relating to both physical and chemical change.	Student Edition: (K) 87 <i>Standardized Test Practice 95 #14</i> (L) 40 Teacher Wraparound Edition: (K) USW 87 (L) VL 40

STANDARDS	PAGE REFERENCES
3. ENERGY	
S:PS2:6:3.1 Explain that the pitch of a sound is dependent on the frequency of the vibration producing it.	Student Edition: (O) 16, 40 <i>Design Your Own Lab</i> 56-57 <i>Launch Lab</i> 35 Teacher Wraparound Edition: (O) D 40; QD 16
S:PS2:6:3.2 Explain that sound vibrations move at different speeds, have different wavelengths; and establish wave-like disturbances that emanate from the source.	Student Edition: (O) 36-37 <i>Design Your Own Lab</i> 56-57 <i>Lab</i> 46 Teacher Wraparound Edition: (O) LD 38; QD 37; SJ 16
S:PS2:6:3.3 Recognize that energy, in the form of heat, is usually a by-product when one form of energy is changed to another, such as when machines convert stored energy to motion.	Student Edition: (M) 131, 133 <i>Lab</i> 138 <i>Section Review</i> 137 #4 Teacher Wraparound Edition: (M) IM 124F
S:PS2:6:3.4 Explain that heat energy moves from warmer materials or regions to cooler ones through conduction, convection, and radiation.	Student Edition: (M) 162-165 <i>Standardized Test Practice</i> 181 #17 Teacher Wraparound Edition: (M) A 167
S:PS2:6:3.5 Explain how electrical circuits can be used to transfer energy in order to produce heat, light, sound, and chemical changes.	Student Edition: (N) 15-16, 20-23 <i>Lab</i> 27, 56-57 <i>MiniLab</i> 22 Teacher Wraparound Edition: (N) A 16; AIL 28; IM 23; MM 21, 24

STANDARDS	PAGE REFERENCES
PS3– The motion of an object is affected by force.	
1. FORCES	
S:PS3:6:1.1 Recognize that just as electric currents can produce magnetic forces, magnets can cause electric currents.	Student Edition: (N) 45, 50 <i>MiniLab 46</i> Teacher Wraparound Edition: (N) IL 51; LD 50
S:PS3:6:1.2 Explain that when a force is applied to an object, it reacts in one of three ways: the object either speeds up, slows down, or goes in a different direction.	Student Edition: (M) 36, 42, 44-46 <i>Design Your Own Lab 56-57</i> Teacher Wraparound Edition: (M) A 38
S:PS3:6:1.3 Describe the relationship between the strength of a force on an object and the resulting effect, such as the greater the force, the greater the change in motion.	Student Edition: (M) 42, 44-45 <i>Design Your Own Lab 56-57</i> Teacher Wraparound Edition: (M) QD 38
2. MOTION	
S:PS3:6:2.1 Explain how the balanced and unbalanced forces are related to an object's motion.	Student Edition: (M) 37 <i>Chapter Review 60 #13</i> <i>Section Review 41 #5</i> Teacher Wraparound Edition: (M) CC 37; CU 41; IM 44
S:PS3:6:2.2 Explain that an object's motion can be tracked and measured over time and that the data can be used to describe its position.	Student Edition: (M) 8-12 <i>MiniLab 11</i> <i>Section Review 13 #3</i> Teacher Wraparound Edition: (M) A 9, 11; DI 12

STANDARDS	PAGE REFERENCES
<p>PS4– The growth of scientific knowledge in Physical Science has been advanced through the development of technology and is used (alone or in combination with other sciences) to identify, understand and solve local and global issues.</p>	
<p>1. DESIGN TECHNOLOGY</p>	
<p>S:PS4:6:1.1 Understand that scientific principles are used in the design of technology.</p>	<p>Student Edition: (K) <i>Design Your Own Lab</i> 62-63 <i>You Do It</i> 5 (M) <i>Design Your Own Lab</i> 26-27, 116-117 <i>Science and Society</i> 58 (O) <i>Integrate Social Studies</i> 48 Teacher Wraparound Edition: (L) DI 80 (M) A 55, 145 (N) CD 53</p>
<p>2. TOOLS</p>	
<p>S:PS4:6:2.1 Recognize that manufacturing processes use a variety of tools and machines to separate, form, combine and condition natural and synthetic materials.</p>	<p>Student Edition: (K) <i>National Geographic</i> 86 (L) <i>Science and History</i> 56 Teacher Wraparound Edition: (N) CU 71</p>
<p>3. SOCIAL ISSUES (LOCAL AND GLOBAL) ENERGY, POWER, AND TRANSPORTATION MANUFACTURING</p>	
<p>S:PS4:6:3.1 Explain how a battery changes chemical energy into electrical energy.</p>	<p>Student Edition: (N) 17 <i>Integrate Chemistry</i> 17 Teacher Wraparound Edition: (N) A 19; CU 19; LD 17</p>
<p>S:PS4:6:3.2 Demonstrate how to produce a magnetic force with an electric current, such as an electromagnet, and how to produce an electric current with a magnet, such as a generator.</p>	<p>Student Edition: (N) 45-46, 50 <i>MiniLab</i> 46 Teacher Wraparound Edition: (N) IL 51; LD 50; QD 4</p>

STANDARDS	PAGE REFERENCES
<p>S:PS4:6:3.3 Provide an example to show that manufacturing processes involve changing natural materials into finished products through a series of processes that involve physical and/or chemical changes.</p>	<p>Student Edition: (K) <i>National Geographic</i> 86 (L) 108 <i>Science and History</i> 56 (N) <i>Integrate Chemistry</i> 70 Teacher Wraparound Edition: (K) A 86 (N) MM 70</p>
<p>4. CAREER TECHNICAL EDUCATION CONNECTIONS</p>	
<p>S:PS4:6:4.1 Understand that some form of science is used in most jobs/careers and that some jobs/careers specifically require knowledge of physical science.</p>	<p>Student Edition: (K) <i>Integrate Career</i> 108 (L) <i>Integrate Career</i> 75, 110 (M) <i>Integrate Career</i> 78 <i>Integrate Social Studies</i> 20 (N) <i>Integrate Career</i> 78 <i>Science and Society</i> 30 Teacher Wraparound Edition: (K) ILS 28 (L) ILS 82 (M) AIL 116</p>

STANDARDS	PAGE REFERENCES
Physical Science Grades 7-8	
PS1– All living and nonliving things are composed of matter having characteristic properties that distinguish one substance from another (independent of size/amount of substance).	
1. COMPOSITION	
S:PS1:8:1.1 Explain that atoms often combine to form a molecule or formula unit (crystal).	Student Edition: (K) 25-26, 41 (L) 16-24 <i>MiniLab</i> 19 <i>National Geographic</i> 22 Teacher Wraparound Edition: (K) MM 41; TPK 25 (L) MM 22; VL 23
S:PS1:8:1.2 Recognize that elements can combine in a variety of ways to form compounds.	Student Edition: (K) 25-26 <i>MiniLab</i> 26 <i>Section Review</i> 29 #3 (L) 64 Teacher Wraparound Edition: (K) CU 29; D 27; TPK 25 (L) QD 66
S:PS1:8:1.3 Differentiate between an atom and an molecule.	Student Edition: (L) 19-21, 23, 70 <i>MiniLab</i> 19 Teacher Wraparound Edition: (K) DI 27 (L) IM 6F; VL 23
S:PS1:8:1.4 Differentiate between a mixture and a pure substance.	Student Edition: (K) 25-27 <i>Integrate Earth Science</i> 29 <i>MiniLab</i> 26 <i>Section Review</i> 29 #1 & #5 (L) 64-66 Teacher Wraparound Edition: (K) A 27 (L) IM 65; MM 65; QD 66; R 69

STANDARDS	PAGE REFERENCES
<p>S:PS1:8:1.5 Identify methods used to separate mixtures, such as boiling, filtering, chromatography and screening.</p>	<p>Student Edition: (K) 28 <i>Applying Science</i> 27 <i>Science Online</i> 28 <i>Section Review</i> 29 #2 (L) 65 <i>Science Online</i> 65 Teacher Wraparound Edition: (K) A 29; AIL 30; R 29 (L) VL 65</p>
<p>S:PS1:8:1.6 Collect data or use data provided to infer or predict that the total amount of mass in a closed system stays the same, regardless of how substances interact (conservation of matter). [PS1(5-8)INQ+SAE-3]</p>	<p>Student Edition: (L) <i>Applying Math</i> 42 <i>MiniLab</i> 40 Teacher Wraparound Edition: (L) DI 41</p>
<p>S:PS1:8:1.7 Given graphic or written information, classify matter as atom/molecule or element/compound (not the structure of an atom). [PS1(5-8)MAS-5]</p>	<p>Student Edition: (K) 25-26 <i>Section Review</i> 29 #3 & #6 (L) 19-20, 23-24 Teacher Wraparound Edition: (K) CU 29 (L) IM 65; QD 66</p>
<p>2. PROPERTIES</p>	
<p>S:PS1:8:2.1 Differentiate between volume and mass and define density.</p>	<p>Student Edition: (K) 59, 74 <i>Applying Math</i> 59 <i>Design Your Own Lab</i> 62-63 <i>MiniLab</i> 75 (M) 78 <i>Applying Science</i> 78 Teacher Wraparound Edition: (K) A 59, 71; R 61</p>
<p>S:PS1:8:2.2 Explain how different substances of equal volume usually have different weights.</p>	<p>Student Edition: (K) <i>Launch Lab</i> 71 Teacher Wraparound Edition: (K) A 59</p>

STANDARDS	PAGE REFERENCES
S:PS1:8:2.3 Identify a molecule as the smallest part of a substance that retains its properties.	Student Edition: (L) 19-21, 70, 97-100 Teacher Wraparound Edition: (L) A 24
S:PS1:8:2.4 Investigate the relationships among mass, volume and density. [PS1(5-8)INQ-1]	Student Edition: (K) <i>Design Your Own Lab</i> 62-63 <i>MiniLab</i> 74, 75 (M) 78-80 <i>Applying Science</i> 78 Teacher Wraparound Edition: (K) A 59, 71, 74; QD 76
S:PS1:8:2.5 Given data about characteristic properties of matter (e.g., melting and boiling points, density, solubility), identify, compare, or classify different substances. [PS1(5-8)INQ+POC-2]	Student Edition: (K) 72-76 <i>Lab</i> 30-31, 77, 117 <i>MiniLab</i> 26, 75 (L) <i>Lab</i> 86-87 Teacher Wraparound Edition: (K) A 47; IL 82 (L) IL 20
S:PS1:8:2.6 Represent or explain the relationship between or among energy, molecular motion, temperature, and states of matter. [PS1(5-8)SAE+MAS-4]	Student Edition: (K) 40-52 <i>Chapter Review</i> 67 #23 <i>Lab</i> 53 <i>Launch Lab</i> 39 <i>MiniLab</i> 50 <i>Science Online</i> 51 Teacher Wraparound Edition: (K) A 42, 48; IM 47; QD 51

STANDARDS	PAGE REFERENCES
<p>PS2– Energy is necessary for change to occur in matter. Energy can be stored, transferred and transformed, but cannot be destroyed.</p>	
<p>1. CHANGE</p>	
<p>S:PS2:8:1.1 Explain how substances react chemically with other substances to form new substances, known as compounds, and that in such recombinations, the properties of the new substances may be very different from those of the old.</p>	<p>Student Edition: (K) 25, 80, 85 (L) 36 <i>Launch Lab 35</i></p> <p>Teacher Wraparound Edition: (K) A 64; IM 85 (L) IM 34F</p>
<p>S:PS2:8:1.2 Identify factors that affect reaction rates, such as temperature, concentration and surface area; and explain that dissolving substances in liquids often accelerates reaction rates.</p>	<p>Student Edition: (L) 46-52 <i>Standardized Test Practice 61 #15</i></p> <p>Teacher Wraparound Edition: (L) CU 52; D 48; IL 49; LD 51</p>
<p>S:PS2:8:1.3 Explain that oxidation involves combining oxygen with another substance, as in burning or rusting.</p>	<p>Student Edition: (K) 80 (L) 43-44 <i>Standardized Test Practice 61 #13</i></p> <p>Teacher Wraparound Edition: (L) IM 34F; QD 49</p>
<p>S:PS2:8:1.4 Explain that states of matter depend on the arrangement of the molecules and their motion.</p>	<p>Student Edition: (K) 40-44, 47-52 <i>Chapter Review 67 #23</i> <i>Standardized Test Practice 69 #23</i></p> <p>Teacher Wraparound Edition: (K) A 42, 48; MM 73; QD 44; TPK 45</p>
<p>S:PS2:8:1.5 Given a real-world example, show that within a system, energy transforms from one form to another (i.e., chemical, heat, electrical, gravitational, light, sound, mechanical). [PS2(5-8)SAE+POC-6]</p>	<p>Student Edition: (M) 131-136 <i>Chapter Review 153 #27</i> <i>Lab 138</i> (N) 48, 50</p> <p>Teacher Wraparound Edition: (M) A 137; CU 137; D 135; QD 133; TPK 131</p>

STANDARDS	PAGE REFERENCES
2. CONSERVATION	
S:PS2:8:2.1 Explain the law of conservation of energy.	Student Edition: (M) 132, 139, 169 <i>Chapter Review</i> 153 #24 <i>Lab</i> 138 <i>Standardized Test Practice</i> 180 #7 Teacher Wraparound Edition: (M) TPK 104
S:PS2:8:2.2 Collect data or use data provided to infer or predict that the total amount of mass in a closed system stays the same, regardless of how substances interact (conservation of matter). [PS1(5-8)INQ+SAE-3]	Student Edition: (L) <i>Applying Math</i> 42 <i>MiniLab</i> 40 Teacher Wraparound Edition: (L) DI 41
3. ENERGY	
S:PS2:8:3.1 Differentiate between kinetic energy, which is the energy of motion and potential energy, which depends on relative position.	Student Edition: (M) 127-128, 132 <i>Chapter Review</i> 153 #20 <i>MiniLab</i> 133 <i>Section Review</i> 137 #1 Teacher Wraparound Edition: (M) IL 127; LD 132; USW 128
S:PS2:8:3.2 Recognize the Sun is a major energy source for the Earth, and describes how it affects the planet's surface.	Student Edition: (M) 139-140, 143 <i>Chapter Review</i> 152 #19 <i>MiniLab</i> 143 <i>Science and Society</i> 176 <i>Science Stats</i> 150 Teacher Wraparound Edition: (L) D 43
S:PS2:8:3.3 Describe ways light can interact with matter, such as transmission (which includes refraction), absorption, and scattering (which includes reflection).	Student Edition: (O) 97-98, 101-106, 108-112 <i>Lab</i> 107, 118-119 <i>Launch Lab</i> 95 Teacher Wraparound Edition: (O) CU 106; LD 110; MM 102; VL 102

STANDARDS	PAGE REFERENCES
S:PS2:8:3.4 Explain that the human eye can only detect wavelengths of electromagnetic radiation within a narrow range; and explain that the differences of wavelength within that range of visible light are perceived as differences in color.	Student Edition: (O) 98-100 <i>Chapter Review 122 #9</i> <i>MiniLab 97</i> Teacher Wraparound Edition: (O) A 97; QD 98
S:PS2:8:3.5 Recognize that most chemical and nuclear reactions involve a transfer of energy.	Student Edition: (K) 82 (L) 42-45 <i>Design Your Own Lab 54-55</i> (M) 129-130 Teacher Wraparound Edition: (K) QD 83 (L) AIL 54; D 44; SJ 44; VL 44
S:PS2:8:3.6 Use data to draw conclusions about how heat can be transferred (convection, conduction, radiation). [PS2(5-8)INQ+SAE+POC-7]	Student Edition: (M) <i>Design Your Own Lab 174-175</i> <i>MiniLab 165</i> Teacher Wraparound Edition: (M) LD 166
PS3– The motion of an object is affected by force.	
1. FORCES	
S:PS3:8:1.1 Explain that the force of gravity gets stronger the closer one gets to an object and decreases the further away one gets from it.	Student Edition: (M) 43 <i>Section Review 48 #2</i>
S:PS3:8:1.2 Recognize the general concepts related to gravitational force.	Student Edition: (M) 43 <i>Standardized Test Practice 62 #1</i> Teacher Wraparound Edition: (M) CC 43; SJ 47
S:PS3:8:1.3 Use data to determine or predict the overall (net) effect of multiple forces (e.g., friction, gravitational, magnetic) on the position, speed, and direction of motion of objects. [PS3(5-8)INQ+POC-8]	Student Edition: (M) <i>Design Your Own Lab 56-57</i> <i>Lab 55</i> <i>MiniLab 40</i> Teacher Wraparound Edition: (M) CU 41; QD 38

STANDARDS	PAGE REFERENCES
2. MOTION	
S:PS3:8:2.1 Explain that an object in motion that is unaffected by a force will continue to move at a constant speed and in a straight line.	Student Edition: (M) 38 <i>Chapter Study Guide</i> 59 <i>Lab</i> 55 <i>National Geographic</i> 51 <i>Section Review</i> 41 #4 Teacher Wraparound Edition: (M) A 51
S:PS3:8:2.2 Explain how the motion of an object can be described by its position, direction of motion, and speed; and illustrate how that motion can be measured and represented graphically.	Student Edition: (M) 8-13 <i>Launch Lab</i> 7 <i>MiniLab</i> 11 Teacher Wraparound Edition: (M) A 9, 12, 13; CU 13; DI 12
PS4– The growth of scientific knowledge in Physical Science has been advanced through the development of technology and is used (alone or in combination with other sciences) to identify, understand and solve local and global issues.	
1. DESIGN TECHNOLOGY	
S:PS4:8:1.1 Understand that design features, such as size shape, weight, and function, must be considered when designing new technology.	Student Edition: (K) <i>Design Your Own Lab</i> 62-63 (M) <i>Design Your Own Lab</i> 26-27, 116-117 <i>Science and Society</i> 176 (O) <i>The Nature of Science</i> 2-3 Teacher Wraparound Edition: (M) A 55, 173; DI 142; MM 166 (N) A 57
2. TOOLS	
S:PS4:8:2.1 Demonstrate appropriate use of tools, such as rulers, calculators, balances, and graduated cylinders to measure and calculate volume and mass.	Student Edition: (K) <i>Design Your Own Lab</i> 62-63 <i>MiniLab</i> 74 <i>Science Skill Handbook</i> 133-134 Teacher Wraparound Edition: (K) A 59, 71, 74; QD 76 (M) A 45, 65

STANDARDS	PAGE REFERENCES
3. SOCIAL ISSUES (LOCAL AND GLOBAL) ENERGY, POWER, AND TRANSPORTATION MANUFACTURING	
<p>S:PS4:8:3.1 Explain how humans use natural resources, such as flowing water and burning of coal, oil, or natural gas to generate electrical energy in power plants.</p>	<p>Student Edition: (M) 136-137, 139-142 <i>Use the Internet Lab</i> 148-149 (N) 51 <i>Science Online</i> 51 Teacher Wraparound Edition: (M) A 137; MM 142; TPK 139; VL 143</p>
<p>S:PS4:8:3.2 Describe how natural resources, such as coal, oil and natural gas are tapped for use in power plants, and how alternative sources, such as solar, wind, water, nuclear are tapped for power; and compare the advantages and disadvantages of each source.</p>	<p>Student Edition: (M) 139-147 <i>Chapter Review</i> 153 #28 <i>MiniLab</i> 143 <i>Use the Internet Lab</i> 148-149 Teacher Wraparound Edition: (M) AIL 148; D 144; DI 142; MM 142, 146; VL 143</p>
<p>S:PS4:8:3.3 Differentiate between durable goods, which are designed to operate for a long period of time, and non-durable goods, which are only intended to operate for a short period of time.</p>	<p>These terms can be introduced in connection with the following material on engines and refrigerators: Student Edition: (M) 169-173</p>
4. CAREER TECHNICAL EDUCATION CONNECTIONS	
<p>S:PS4:8:4.1 Understand that some scientific jobs/careers involve the application of physical science content knowledge and experience in specific ways that meet the goals of the job.</p>	<p>Student Edition: (K) <i>Integrate Career</i> 108 (L) <i>Integrate Career</i> 11, 110 (M) <i>Integrate Career</i> 172 <i>Integrate Social Studies</i> 20 (N) <i>Science and Society</i> 30 (O) <i>Integrate Astronomy</i> 42 Teacher Wraparound Edition: (K) ILS 28 (L) ILS 82 (M) AIL 116</p>