



*Earth Materials and Processes F  
The Changing Surface of Earth G  
The Water Planet H  
The Air Around You I  
Astronomy J*

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STANDARDS	PAGE REFERENCES
<b>Earth Space Science Grades 5-6</b>	
<b>ESS1– The Earth and Earth materials, as we know them today, have developed over long periods of time, through constant change processes.</b>	
<b>1. ATMOSPHERE, CLIMATE, AND WEATHER</b>	
<p>S:ESS1:6:1.1 Describe and make predictions about local and regional weather conditions using observation and data collection methods.</p>	<p><b>Student Edition:</b> (I) 61 #27, #32 MiniLAB 38, 53 Science Online 45 Lab 55</p> <p><b>Teacher Wraparound Edition:</b> (I) CC 46; CFU 54; DI 53; IL 46; LD 38</p>

STANDARDS	PAGE REFERENCES
S:ESS1:6:1.2 Identify weather patterns by tracking weather related events, such as hurricanes.	<b>Student Edition:</b> (I) <i>Science Online</i> 48 <b>Teacher Wraparound Edition:</b> (I) ACT 49, 76; CC 50
S:ESS1:6:1.3 Explain the composition and structure of the Earth's atmosphere.	<b>Student Edition:</b> (I) 8-15 <i>Get Ready to Read</i> 8A-B <i>Science Online</i> 10 <i>Applying Science</i> 12 <i>Applying Skills</i> 15 <b>Teacher Wraparound Edition:</b> (I) CFU 15; DIS 10; R 15; SCB 6E; TFYI 11, 13; VL 9
S:ESS1:6:1.4 Describe weather in terms of temperature, wind speed and direction, precipitation, and cloud cover.	<b>Student Edition:</b> (I) 36-43, 44-51, 63 #11 <i>Applying Skills</i> 51 <i>Model and Invent Lab</i> 56-57 <b>Teacher Wraparound Edition:</b> (I) A 51; ACT 24; DI 24, 45
S:ESS1:6:1.5 Describe how clouds affect weather and climate, including precipitation, reflecting light from the sun, and retaining heat energy emitted from the Earth's surface.	<b>Student Edition:</b> (I) 17-20, 40-43, 61 #27, 81 <i>Science and Society</i> 58 <b>Teacher Wraparound Edition:</b> (I) A 20; CB 58; DI 42; TFYI 42
<b>2. COMPOSITION AND FEATURES</b>	
S:ESS1:6:2.1 Differentiate between renewable and non-renewable resources.	<b>Student Edition:</b> (F) 66-75, 76-81, 93 #18, 95 #25 <i>Get Ready to Read</i> 66A-B <i>Section Review</i> 75 <i>Model and Invent Lab</i> 88-89 <b>Teacher Wraparound Edition:</b> (F) A 81; ACT 79; R 81; TBI 64; USW 67

STANDARDS	PAGE REFERENCES
<p>S:ESS1:6:2.2 Describe and define the different landforms on the Earth's surface, such as coastlines, rivers, mountains, deltas, canyons, etc.</p>	<p><b>Student Edition:</b>            (G) 8-13, 33 #14, 102  <i>Launch Lab 7</i>  <i>Get Ready to Read 8A-B</i>  <i>Section Review 13</i>            (H) 41  <b>Teacher Wraparound Edition:</b>            (G) A 10; ACT 9; DI 12; IM 9; TPK 8; USW 11</p>
<p>S:ESS1:6:2.3 Identify and distinguish between various landforms using a map and/or digital images.</p>	<p><b>Student Edition:</b>            (G) 8-13, 18-24  <i>Launch Lab 7</i>  <i>MiniLAB 10</i>  <i>National Geographic 21</i>  <i>Applying Science 23</i>  <i>Lab 25</i>  <b>Teacher Wraparound Edition:</b>            (G) ACT 9, 12, 20, 21; DI 9, 72; IL 22;            (H) ACT 38</p>
<p><b>3. FOSSILS</b></p>	
<p>S:ESS1:6:3.1 Recognize that fossils offer important evidence relating to changes in life forms and environmental conditions over geologic time.</p>	<p><b>Student Edition:</b>            (G) 124-131, 154-161  <i>Launch Lab 123</i>  <i>Applying Skills 131</i>  <i>Model and Invent Lab 144-145</i>  <i>National Geographic 165</i>  <i>Use the Internet Lab 176-177</i>  <b>Teacher Wraparound Edition:</b>            (G) ACT 165; SCB 122E; SJ 129; VL 159</p>
<p>S:ESS1:6:3.2 Identify connections between fossil evidence and geological events, such as changes in atmospheric composition, movement of tectonic plates, and asteroid/comet impact; and develop a means of sequencing this evidence.</p>	<p><b>Student Edition:</b>            (F) 98-101, 123 #28  <i>MiniLAB 100</i>  <i>Section Review 101</i>            (G) 124-131, 161  <i>Applying Skills 137</i>  <b>Teacher Wraparound Edition:</b>            (F) TFYI 100            (G) DI 130</p>

STANDARDS	PAGE REFERENCES
<b>4. OBSERVATION OF THE EARTH FROM SPACE</b>	
<p>S:ESS1:6:4.1 Recognize that images taken of the Earth from space can show its features and any changes in those features that appear over time.</p>	<p><b>Student Edition:</b>            (G) 24, 33 #23  <b>Teacher Wraparound Edition:</b>            (H) DIS 3</p>
<p>S:ESS1:6:4.2 Explain that satellites can be used to view and track storms and Earth events, such as hurricanes and wild fires.</p>	<p><b>Student Edition:</b>            (G) 24, 33 #23            (I) 52  <i>The Nature of Science 2</i>            (J) 17  <b>Teacher Wraparound Edition:</b>            (I) QD 4            (J) DIS 17</p>
<b>5. PROCESSES AND RATES OF CHANGE</b>	
<p>S:ESS1:6:5.1 Recognize that things change in steady, repetitive, or irregular ways, or sometimes in more than one way at the same time.</p>	<p><b>Student Edition:</b>            (F) 11, 36-39, 45-46, 106-110, 166-167  <i>Lab 13</i>            (G) 64-68, 92-102, 107-108            (H) 36-43, 44-49            (I) 74-84            (J) 46-50  <i>Lab 55</i>  <b>Teacher Wraparound Edition:</b>            (G) CFU 102; TBI 62            (I) IM 78</p>
<p>S:ESS1:6:5.2 Explain how some changes to the Earth's surface happen abruptly, as a result of landslides, earthquakes and volcanic eruptions; while other changes happen very slowly as a result of weathering, erosions and deposition of sediment caused by waves, wind, water and ice.</p>	<p><b>Student Edition:</b>            (F) 126-129, 139-145, 156-161, 168            (G) 36-41, 42, 64-68, 69-74, 92-101            (H) 41-43  <b>Teacher Wraparound Edition:</b>            (F) SJ 148; TFYI 157            (G) SJ 37, 84</p>

STANDARDS	PAGE REFERENCES
<p>S:ESS1:6:5.3 Recognize that vibrations in materials set up wavelike disturbances that spread away from the source, as with earthquakes.</p>	<p><b>Student Edition:</b>  (F) 130-137  <i>Integrate Physics</i> 131  <i>National Geographic</i> 132  (H) 110-113  <i>MiniLAB</i> 111  <i>National Geographic</i> 112  <b>Teacher Wraparound Edition:</b>  (F) ACT 132; DI 131, 132; TPK 130  (H) V 112</p>
<b>6. ROCK CYCLE</b>	
<p>S:ESS1:6:6.1 Explain how soil is formed from combinations of weathered rock and decomposed plant and animal remains, and that it contains living organisms.</p>	<p><b>Student Edition:</b>  (G) 42, 61 #20  <i>National Geographic</i> 43  <i>MiniLAB</i> 44  <i>Section Review</i> 48  <i>Integrate Earth Science</i> 56  <b>Teacher Wraparound Edition:</b>  (G) ACT 43; CFU 48; V 43</p>
<p>S:ESS1:6:6.2 Identify the components of soil and other factors, such as bacteria, fungi and worms, which influence its texture, fertility, and resistance to erosion.</p>	<p><b>Student Edition:</b>  (G) 42-48, 50-53  <i>National Geographic</i> 43  <i>MiniLAB</i> 44  <i>Integrate Chemistry</i> 45  <i>Lab</i> 49  <b>Teacher Wraparound Edition:</b>  (G) A 44; DIS 45; VL 51</p>
<p>S:ESS1:6:6.3 Describe the properties of soil, such as color, texture, capacity to retain water, and its ability to support plant life.</p>	<p><b>Student Edition:</b>  (G) 42-48  <i>Applying Math</i> 46  <i>Lab</i> 49  <b>Teacher Wraparound Edition:</b>  (G) A 49; DI 43, 47; IL 47; QD 45; SCB 34E; TFYI 44, 46; TPK 42; VL 47</p>

STANDARDS	PAGE REFERENCES
<p><b>ESS1– The Earth and Earth materials, as we know them today, have developed over long periods of time, through constant change processes.</b></p>	
<p><b>7. WATER</b></p>	
<p>S:ESS1:6:7.1 Explain the properties that make water an essential component of the Earth’s system, including solvency and its ability to maintain a liquid state at most temperatures.</p>	<p><b>Student Edition:</b>            (H) 8-14  <i>Launch Lab 7</i>  <i>Get Ready to Read 8A-B</i>  <i>Science Online 9</i>  <i>Integrate Life Science 14</i>  <i>Lab 15</i></p> <p><b>Teacher Wraparound Edition:</b>            (H) CFU 14; DI 12; DIS 12; IM 12; R 14; SCB 6E; TFYI 11; TPK 8; USW 17</p>
<p>S:ESS1:6:7.2 Explain that water quality has a direct effect on Earth’s life forms.</p>	<p><b>Student Edition:</b>            (H) 16-21, 46-49, 50-53, 54-57, 76-84, 143-147  <i>Lab 90-91</i></p> <p><b>Teacher Wraparound Edition:</b>            (H) A 25; CD 144; CFU 53; DIS 146; QD 144; SCB 34F; SJ 81; TFYI 17</p>
<p><b>ESS2– The Earth is part of a solar system, made up of distinct parts, which have temporal and spatial interrelationships.</b></p>	
<p><b>1. EARTH, SUN, AND MOON</b></p>	
<p>S:ESS2:6:1.1 Recognize and describe how the regular and predictable motions of the Earth and Moon explain certain Earth phenomena, such as day and night, the seasons, the year, shadows and the tides.</p>	<p><b>Student Edition:</b>            (H) 113-116, 125 #10-#11            (I) 74-75  <i>Section Review 84</i>            (J) 40-45  <i>Science Online 45</i></p> <p><b>Teacher Wraparound Edition:</b>            (H) ACT 114; DI 115; DIS 116; QD 113; TFYI 115; VL 116            (I) IM 64F            (J) QD 44; R 45</p>

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S:ESS2:6:1.2 Recognize that of all the known planets, Earth appears to be somewhat unique; and describe the conditions that exist on Earth that allow it to support life.	<b>Student Edition:</b> (H) 8 (I) 20 (J) 78, 101 #15 <b>Teacher Wraparound Edition:</b> (H) DI 12; TPK 8 (J) TFYI 88
<b>2. ENERGY</b>	
S:ESS2:6:2.1 Recognize how the tilt of the Earth's axis and the Earth's revolution around the Sun affect seasons and weather patterns.	<b>Student Edition:</b> (I) 74-75, 80 <i>Section Review 84</i> (J) 43-45 <i>Section Review 45</i> <i>Lab 60-61</i> <b>Teacher Wraparound Edition:</b> (I) IM 64F; TFYI 80 (J) ACT 43; QD 44; R 45
S:ESS2:6:2.2 Identify and describe seasonal, daylight and weather patterns as they relate to energy.	<b>Student Edition:</b> (I) 17-19, 21-25, 44-51, 74-75 <i>Design Your Own Lab 26-27</i> <i>Integrate Environment 50</i> <i>MiniLAB 75</i> <i>National Geographic 76-77</i> (J) 43-45 <i>Lab 60-61</i> <b>Teacher Wraparound Edition:</b> (I) QD 44; R 45 (J) A 51; CFU 51; TFYI 47

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<b>3. SOLAR SYSTEM</b>	
<i>Districts may choose to work on End of Grade 8 standards in grades 5-8.</i>	
<b>4. VIEW FROM EARTH</b>	
S:ESS2:6:4.1 Explain the historical perspective of planetary exploration and man’s achievements in space, beginning with Russia’s Sputnik mission in 1957.	<b>Student Edition:</b> (J) 8-13, 15-22, 23-29 <i>Science Online</i> 20 <b>Teacher Wraparound Edition:</b> (J) A 22; ACT 52; CC 18; CD 20; DI 21; R 22; SCB 6E-F; SJ 11, 21; TFYI 17; TPK 15
S:ESS2:6:4.2 Describe man’s perception of the constellations throughout history; and explain how he has used them to his advantage, including navigational purposes and to explain historical events.	<b>Student Edition:</b> (J) 104-105 <i>MiniLAB</i> 105 <b>Teacher Wraparound Edition:</b> (J) IM 105; SJ 125; TFYI 105
<b>ESS3– The origin and evolution of galaxies and the universe demonstrate fundamental principles of physical science across vast distances and time.</b>	
<b>1. SIZE AND SCALE</b>	
<i>Districts may choose to work on End of Grade 8 standards in grades 5-8.</i>	
<b>2. STARS AND GALAXIES</b>	
<i>Districts may choose to work on End of Grade 8 standards in grades 5-8.</i>	
<b>3. UNIVERSE</b>	
<i>Districts may choose to work on End of Grade 8 standards in grades 5-8.</i>	

## STANDARDS

## PAGE REFERENCES

**ESS4–The growth of scientific knowledge in Earth Space 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:ESS4:6:1.1 Understand that technology is used to design tools that improve our ability to measure and observe the world.

**Student Edition:**

- (F) 102-104, 133-137  
*The Nature of Science* 2-5  
*You Do It* 5
- (G) 24
- (H) *The Nature of Science* 2-5  
*You Do It* 5
- (I) *The Nature of Science* 2-5  
*You Do It* 5
- (J) 8-13, 15-22

**Teacher Wraparound Edition:**

- (F) TFYI 103
- (H) ACT 4
- (I) MM 4; QD 3

**2. TOOLS**

S:ESS4:6:2.1 Recognize that satellites and Doppler radar can be used to observe or predict the weather.

**Student Edition:**

- (I) 52-54  
*The Nature of Science* 2  
*Section Review* 54
- (J) 17

**Teacher Wraparound Edition:**

- (I) QD 4
- (J) DIS 17

S:ESS4:6:2.2 Employ knowledge of basic weather symbols to read and interpret weather and topographic maps.

**Student Edition:**

- (F) *Reference Handbooks* 220
- (G) *Reference Handbooks* 220
- (H) *Reference Handbooks* 192
- (I) 45-46, 52-54  
*Lab* 55  
*Reference Handbooks* 159
- (J) *Reference Handbooks* 169

**Teacher Wraparound Edition:**

- (I) A 54, 55; CFU 54; DI 46, 53; R 54; VL 53

STANDARDS	PAGE REFERENCES
S:ESS4:6:2.3 Read and interpret data from barometers, sling psychrometers and anemometers.	<b>Student Edition:</b> (I) 37, 45, 52-54 <i>Applying Math</i> 39 <i>Science Online</i> 45 <i>Lab</i> 55 <b>Teacher Wraparound Edition:</b> (I) DI 53; IL 46
<b>3. LOCAL AND GLOBAL ENVIRONMENTAL ISSUES</b>	
S:ESS4:6:3.1 Provide examples of products that man has developed which allow humans to do things that they could not do otherwise; and identify the natural materials used to produce these products.	<b>Student Edition:</b> (F) 23-25, 83-87 <i>Section Review</i> 25 (H) 131-133 <i>Use the Internet Lab</i> 148-149 (J) 29 <b>Teacher Wraparound Edition:</b> (F) ACT 84; IM 6F; R 87; SJ 24; TPK 83 (J) SCB 6F
S:ESS4:6:3.2 Identify the most appropriate materials for a given design task with requirements for specific properties, such as weight, strength, hardness, and flexibility.	<b>Student Edition:</b> (F) <i>Model and Invent Lab</i> 88-89 <i>MiniLAB</i> 144 (I) <i>You Do It</i> 5 <i>Model and Invent Lab</i> 56-57 (J) <i>Lab</i> 14 <b>Teacher Wraparound Edition:</b> (F) A 144; DI 89; IL 79; MM 78; R 145 (H) DI 102; IL 101 (J) A 14
S:ESS4:6:3.3 Provide examples of how to reduce waste through conservation, recycling, and reuse.	<b>Student Edition:</b> (H) 16-21, 22-25, 31 #24 <i>MiniLAB</i> 18 <i>Section Review</i> 21 <i>Design Your Own Lab</i> 26-27 <i>Science and Society</i> 28 <b>Teacher Wraparound Edition:</b> (H) A 18, 21; ACT 20, 28; AIL 26; DI 20; MM 20; R 21

**STANDARDS****PAGE REFERENCES****4. CAREER TECHNICAL EDUCATION CONNECTIONS**

S:LS5:6:4.1 Understand that some form of science is used in most jobs/careers and that some jobs/careers specifically require knowledge of Earth science.

**Student Edition:**

- (F) *Integrate Careers* 52, 77, 113, 141, 158
- (G) *Integrate Careers* 51, 93
- (H) *The Nature of Science* 2-5  
*Integrate Careers* 79, 108, 136
- (I) *Integrate Careers* 79
- (J) *Integrate Careers* 18, 51

STANDARDS	PAGE REFERENCES
<b>Earth Space Science Grades 7-8</b>	
<b>ESS1– The Earth and Earth materials, as we know them today, have developed over long periods of time, through constant change processes.</b>	
<b>1. ATMOSPHERE, CLIMATE, AND WEATHER</b>	
<p>S:ESS1:8:1.1 Identify and describe the processes of the water cycle and explain their effects on climatic patterns.</p>	<p><b>Student Edition:</b>            (H) 24-25, 32 #8-#10            (I) 19, 33 #15-#17</p> <p><b>Teacher Wraparound Edition:</b>            (H) IL 24; R 25; VL 25            (I) A 19, 20, 85; R 20; SJ 19</p>
<p>S:ESS1:8:1.2 Identify and describe the impact certain factors have on the Earth’s climate, including changes in the oceans’ temperature, changes in the composition of the atmosphere, and geological shifts due to events such as volcanic eruptions and glacial movements.</p>	<p><b>Student Edition:</b>            (I) 74-84, 93 #15  <i>MiniLAB</i> 75  <i>National Geographic</i> 76-77  <i>Science Online</i> 81  <i>Science and History</i> 88</p> <p><b>Teacher Wraparound Edition:</b>            (I) A 84; ACT 76; CC 80; CFU 82; DIS 81, 83; IM 78; VL 82</p>
<b>2. COMPOSITION AND FEATURES</b>	
<p>S:ESS1:8:2.1 Describe the layers of the Earth, including the core, mantle, lithosphere, hydrosphere, and atmosphere.</p>	<p><b>Student Edition:</b>            (F) 106, 135-136, 152 #7  <i>Section Review</i> 137            (I) 8-15  <i>Science Online</i> 10  <i>Applying Skills</i> 15</p> <p><b>Teacher Wraparound Edition:</b>            (F) CC 135; DI 136; UAA 136; VL 135            (I) CFU 15</p>

STANDARDS	PAGE REFERENCES
<p>S:ESS1:8:2.2 Use geological evidence provided to support the idea that Earth's crust/lithosphere is composed of plates that move. [ESS1(5-8)INQ+POC-1]</p>	<p><b>Student Edition:</b> (F) 98-101, 102-104, 106-115 <i>Launch Lab</i> 97 <i>Get Ready to Read</i> 98A-B <i>Lab</i> 105 <i>Applying Science</i> 108</p> <p><b>Teacher Wraparound Edition:</b> (F) ACT 109; CFU 101; DI 99, 100; QD 107; SCB 96E-F; UAA 99</p>
<b>3. FOSSILS</b>	
<p>S:ESS1:8:3.1 Explain how fossils found in sedimentary rock can be used to support the theories of Earth's evolution over geologic time; and describe how the folding, breaking, and uplifting of the layers affects the evidence.</p>	<p><b>Student Edition:</b> (F) 98-101, 123 #28 <i>MiniLAB</i> 100 <i>Applying Skills</i> 101</p> <p>(G) 130-131, 136, 161 <i>Applying Skills</i> 137</p> <p><b>Teacher Wraparound Edition:</b> (F) TFYI 100 (G) DI 130; TFYI 136</p>
<b>4. OBSERVATION OF THE EARTH FROM SPACE</b>	
<p>S:ESS1:8:4.1 Describe how catastrophic changes that have taken place on the Earth's surface can be revealed by satellite images.</p>	<p><b>Student Edition:</b> (G) 24, 33 #23* (J) 17</p> <p><b>Teacher Wraparound Edition:</b> (I) QD 4 (J) DIS 17</p> <p>*This reference discusses the uses of satellites in general.</p>
<b>5. PROCESSES AND RATES OF CHANGE</b>	
<p>S:ESS1:8:5.1 Explain that the Earth's crust is divided into plates which move at extremely slow rates in response to movements in the mantle.</p>	<p><b>Student Edition:</b> (F) 98-101, 102-104, 106-115, 123 #13-#15, #16 <i>Get Ready to Read</i> 98A-B <i>Lab</i> 105 <i>Applying Math</i> 121</p> <p><b>Teacher Wraparound Edition:</b> (F) A 105; FF 107; SCB 96E-F; TFYI 113, 114; V 109</p>

STANDARDS	PAGE REFERENCES
<p>S:ESS1:8:5.2 Explain how Earth events, abruptly and over time, can bring about changes on Earth's surface (e.g., landforms, ocean floor, rock features, climate). [ESS1(5-8)POC-3]</p>	<p><b>Student Edition:</b>  (F) 102-104, 106-115  (G) 36-41, 64-68, 69-74, 76-81, 92-102  (I) 78-80  <i>Science and History</i> 88</p> <p><b>Teacher Wraparound Edition:</b>  (F) LD 108; V 109  (G) DI 73; R 74; SJ 37  (I) CC 80</p>
<p>S:ESS1:8:5.3 Explain the role of differential heating or convection in ocean currents, winds, weather and weather patterns, atmosphere, or climate. [ESS1(5-8)SAE+POC-4]</p>	<p><b>Student Edition:</b>  (H) 104-109  <i>Science Online</i> 105  <i>Section Review</i> 109  (I) 21-25, 44-51, 66-69  <i>Science Online</i> 22  <i>National Geographic</i> 23  <i>Section Review</i> 25  <i>MiniLAB</i> 67</p> <p><b>Teacher Wraparound Edition:</b>  (H) DI 107; DIS 106; R 109  (I) CFU 25; IM 6F</p>
<p><b>6. ROCK CYCLE</b></p>	
<p>S:ESS1:8:6.1 Describe the processes of the rock cycle.</p>	<p><b>Student Edition:</b>  (F) 36-39, 40-43, 45-48, 49-55  <i>Get Ready to Read</i> 36A-B  <i>MiniLAB</i> 37  <i>National Geographic</i> 38</p> <p><b>Teacher Wraparound Edition:</b>  (F) A 39, 55; CFU 39; DI 37; MM 55;  SCB 34E-F; SJ 51; V 38</p>
<p>S:ESS1:8:6.2 Explain that sedimentary, igneous, and metamorphic rocks contain evidence of the minerals, temperatures, and forces that created them.</p>	<p><b>Student Edition:</b>  (F) 40-43, 45-48, 49-55  <i>Lab</i> 44, 56-57  <i>Science Online</i> 46  <i>MiniLAB</i> 50</p> <p><b>Teacher Wraparound Edition:</b>  (F) CFU 43; DI 41, 50; FF 41; QD 41, 53;  TFYI 47; UAA 46</p>

STANDARDS	PAGE REFERENCES
<p>S:ESS1:8:6.3 Explain how sediments of sand and smaller particles, which may contain the remains of organisms, are gradually buried and cemented together by dissolved minerals to form solid rock.</p>	<p><b>Student Edition:</b>  (F) 49-55  <i>MiniLAB</i> 50  <i>Section Review</i> 55  <i>Lab</i> 56-57</p> <p><b>Teacher Wraparound Edition:</b>  (F) A 50; ACT 52; CFU 55; DI 50; DIS 51, 54; TPK 49; VL 51</p>
<p>S:ESS1:8:6.4 Using data about a rock’s physical characteristics, make and support an inference about the rock’s history and connection to the rock cycle. [ESS1(5-8)SAE+POC-5]</p>	<p><b>Student Edition:</b>  (F) 36-39, 40-43, 45-48, 49-55  <i>Lab</i> 44, 56-57</p> <p><b>Teacher Wraparound Edition:</b>  (F) A 48, 57; ACT 47; AIL 56; CFU 43; DI 37; DIS 38; QD 41; SJ 51</p>
<p><b>ESS1– The Earth and Earth materials, as we know them today, have developed over long periods of time, through constant change processes.</b></p>	
<p><b>7. WATER</b></p>	
<p>S:ESS1:8:7.1 Describe how water flows into and through a watershed, falling on the land, collecting in rivers and lakes, soil, and porous layers of rock, until much of it flows back into the ocean.</p>	<p><b>Student Edition:</b>  (G) 92-102, 103-108  <i>Science Online</i> 96  <i>Applying Math</i> 105  (H) 36-43, 44-49, 51-53, 68-74  <i>MiniLAB</i> 39  <i>Launch Lab</i> 67</p> <p><b>Teacher Wraparound Edition:</b>  (G) VL 96  (H) ACT 38; LD 45; MM 37; TPK 68</p>
<p>S:ESS1:8:7.2 Identify the physical and chemical properties that make water an essential component of the Earth’s system.</p>	<p><b>Student Edition:</b>  (H) 8-14  <i>Launch Lab</i> 7  <i>Get Ready to Read</i> 8A-B  <i>Science Online</i> 9  <i>Integrate Life Science</i> 14  <i>Lab</i> 15</p> <p><b>Teacher Wraparound Edition:</b>  (H) CFU 14; DI 12; DIS 12; IM 12; R 14; SCB 6E; TFYI 11; TPK 8; USW 17</p>

STANDARDS	PAGE REFERENCES
<p>S:ESS1:8:7.3 Explain the processes that cause cycling of water into and out of the atmosphere and their connections to our planet’s weather patterns. [ESS1(5-8)SAE-2]</p>	<p><b>Student Edition:</b>            (H) 24-25, 32 #8-#10            (I) 19, 33 #15-#17  <b>Teacher Wraparound Edition:</b>            (H) IL 24; R 25; VL 25            (I) A 19, 20, 85; R 20; SJ 19</p>
<p><b>ESS2– The Earth is part of a solar system, made up of distinct parts, which have temporal and spatial interrelationships.</b></p>	
<p><b>1. EARTH, SUN, AND MOON</b></p>	
<p>S:ESS2:8:1.1 Identify the characteristics of the Sun and its position in the universe.</p>	<p><b>Student Edition:</b>            (J) 109-112, 131 #16, #21, 133 #22  <i>MiniLAB</i> 47, 122  <i>Applying Skills</i> 112  <i>Lab</i> 113  <b>Teacher Wraparound Edition:</b>            (J) FF 110; QD 110; R 112; SCB 102E; TFYI 110</p>
<p>S:ESS2:8:1.2 Recognize and describe how the regular and predictable motions of the Earth and Moon account for phenomena, such as the phases of the Moon and eclipses.</p>	<p><b>Student Edition:</b>            (J) 46-50  <i>Science Online</i> 49  <i>Lab</i> 55  <b>Teacher Wraparound Edition:</b>            (J) A 55; ACT 50; DIS 49, 50; IM 38F; LD 50; QD 49; R 54; TBI 38; UAA 48; USW 48; VL 48</p>
<p>S:ESS2:8:1.3 Recognize the relationships between the tides and the phases of the moon; and use tide charts and NOAA information to describe them.</p>	<p><b>Student Edition:</b>            (H) 113-116, 125 #10-#11, #13  <i>Science Online</i> 113  <i>Applying Skills</i> 116  <i>Applying Math</i> 123  <b>Teacher Wraparound Edition:</b>            (H) ACT 114; QD 113; VL 116</p>

STANDARDS	PAGE REFERENCES
<p>S:ESS2:8:1.4 Explain the temporal or positional relationships between or among the Earth, Sun and Moon (e.g., night/day, seasons, year, tide). [ESS2(5-8)SAE+POC-8]</p>	<p><b>Student Edition:</b>            (H) 113-116, 125 #10-#11            (I) 74-75  <i>Section Review 84</i>            (J) 40-45  <i>Science Online 45</i></p> <p><b>Teacher Wraparound Edition:</b>            (H) ACT 114; DI 115; DIS 116; QD 113;            TFYI 115; VL 116            (I) IM 64F            (J) QD 44; R 45</p>
<p><b>2. ENERGY</b></p>	
<p>S:ESS2:8:2.1 Describe the Sun as the principle energy source for phenomena on the Earth's surface.</p>	<p><b>Student Edition:</b>            (I) 17-20  <i>Section Review 20</i>            (J) 112  <i>Section Review 112</i></p> <p><b>Teacher Wraparound Edition:</b>            (I) TFYI 18            (J) TPK 109</p>
<p><b>3. SOLAR SYSTEM</b></p>	
<p>S:ESS2:8:3.1 Identify the characteristics and movement patterns of the planets in our Solar System and differentiate between them.</p>	<p><b>Student Edition:</b>            (J) 43, 70-74, 76-81, 82-89  <i>Launch Lab 39</i>  <i>Science Online 43, 71</i>  <i>Lab 75</i>  <i>Applying Math 81</i>  <i>MiniLAB 84</i>  <i>Section Review 87</i></p> <p><b>Teacher Wraparound Edition:</b>            (J) ACT 83; CFU 87; TFYI 77</p>

STANDARDS	PAGE REFERENCES
S:ESS2:8:3.2 Explain the effects of gravitational force on the planets and their moons.	<p><b>Student Edition:</b>  (H) 113-116  <i>Section Review</i> 116  (J) 53, 70-74, 92  <i>MiniLAB</i> 79</p> <p><b>Teacher Wraparound Edition:</b>  (H) DIS 116; QD 113; TFYI 115  (J) A 79; V 73</p>
S:ESS2:8:3.3 Explain why Earth and our Solar System appear to be somewhat unique, while acknowledging recent evidence that suggests similar systems exist in the universe.	<p><b>Student Edition:</b>  (H) 8  (I) 20  (J) 78, 101 #15</p> <p><b>Teacher Wraparound Edition:</b>  (H) DI 12; TPK 8  (J) TFYI 88</p>
S:ESS2:8:3.4 Compare and contrast planets based on data provided about size, composition, location, orbital movement, atmosphere, or surface features (includes moons). [ESS2(5-8)MAS-6]	<p><b>Student Edition:</b>  (J) 40-45, 46-53, 76-81, 82-89  <i>Science Online</i> 43  <i>MiniLAB</i> 47, 84  <i>Get Ready to Read</i> 70A-B  <i>Lab</i> 75  <i>Model and Invent Lab</i> 94-95</p> <p><b>Teacher Wraparound Edition:</b>  (J) ACT 83; CC 85; QD 78; R 81; SCB 68E</p>
S:ESS2:8:3.5 Explain how gravitational force affects objects in the Solar System (e.g., moons, tides, orbits, satellites). [ESS2(5-8)SAE+POC-8]	<p><b>Student Edition:</b>  (H) 113-116  <i>Section Review</i> 116  (J) 17, 53, 70-74, 92, 101 #26  <i>MiniLAB</i> 21, 79</p> <p><b>Teacher Wraparound Edition:</b>  (H) DIS 116; QD 113; TFYI 115  (J) A 79; V 73</p>

STANDARDS	PAGE REFERENCES
<b>4. VIEW FROM EARTH</b>	
<p>S:ESS2:8:4.1 Explain how technological advances have allowed scientists to re-evaluate or extend existing ideas about the Solar System. [ESS2(5-8)NOS-7]</p>	<p><b>Student Edition:</b> (J) 8-13, 15-22, 23-29, 56-59 <i>Get Ready to Read</i> 8A-B <i>National Geographic</i> 10 <i>Science Online</i> 20</p> <p><b>Teacher Wraparound Edition:</b> (J) CFU 29; DI 57, 58; SCB 6E-F; SJ 11, 86; TBI 6; TFYI 17</p>
<p><b>ESS3– The origin and evolution of galaxies and the universe demonstrate fundamental principles of physical science across vast distances and time.</b></p>	
<b>1. SIZE AND SCALE</b>	
<p>S:ESS3:8:1.1 Define an astronomical unit as the distance from the Earth to the Sun.</p>	<p><b>Student Edition:</b> (J) 70-71, 78 <i>Model and Invent Lab</i> 94-95</p>
<p>S:ESS3:8:1.2 Explain that special units of measure, such as light years and astronomical units, are used to calculate distances in space.</p>	<p><b>Student Edition:</b> (J) 107 <i>Applying Skills</i> 108 <i>MiniLAB</i> 122</p> <p><b>Teacher Wraparound Edition:</b> (J) CC 107</p>
<b>2. STARS AND GALAXIES</b>	
<p>S:ESS3:8:2.1 Describe objects such as asteroids, comets and meteors in terms of their characteristics and movement patterns.</p>	<p><b>Student Edition:</b> (J) 90-93, 99 #17 <i>Accidents in Science</i> 96</p> <p><b>Teacher Wraparound Edition:</b> (J) A 93; CB 96; CFU 93; DIS 91; R 93</p>
<b>3. UNIVERSE</b>	
<p>S:ESS3:8:3.1 Describe the universe as being comprised of billions of galaxies, each containing many billions of stars; and explain that there are vast distances separating these galaxies and stars from one another and from the Earth.</p>	<p><b>Student Edition:</b> (J) 120-125, 133 #18 <i>MiniLAB</i> 122</p> <p><b>Teacher Wraparound Edition:</b> (J) A 122; DIS 128; TFYI 121</p>

STANDARDS	PAGE REFERENCES
<p><b>ESS4–The growth of scientific knowledge in Earth Space 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.</b></p>	
<p><b>1. DESIGN TECHNOLOGY</b></p>	
<p>S:ESS4:8:1.1 Describe ways in which technology has increased our understanding of the world in which we live.</p>	<p><b>Student Edition:</b>            (F) 102-104, 133-137  <i>The Nature of Science</i> 2-5  <i>You Do It</i> 5            (G) 24            (H) <i>The Nature of Science</i> 2-5  <i>You Do It</i> 5            (I) <i>The Nature of Science</i> 2-5            (J) 8-13, 15-22  <b>Teacher Wraparound Edition:</b>            (F) DI 103            (I) QD 4; SCB 34F            (J) DIS 17; SCB 6E-F</p>
<p>S:ESS4:8:1.2 Recognize the importance of technology as it relates to science, for purposes such as: access to space and other remote locations, sample collection and treatment, measurement, data collection, and storage, computation, and communication of information.</p>	<p><b>Student Edition:</b>            (F) 102-104, 133-137  <i>The Nature of Science</i> 2-5  <i>You Do it</i> 5            (G) 24  <i>Integrate Physics</i> 20            (H) <i>The Nature of Science</i> 2-5  <i>You Do It</i> 5            (I) <i>The Nature of Science</i> 2-5            (J) 8-13  <i>The Nature of Science</i> 2-5  <b>Teacher Wraparound Edition:</b>            (F) TFYI 103            (H) ACT 4            (I) QD 4            (J) SCB 6E-F</p>

STANDARDS	PAGE REFERENCES
<b>2. TOOLS</b>	
S:ESS4:8:2.1 Calculate temperature in degrees Celsius.	<b>Student Edition:</b> (F) <i>Applying Math</i> 61, 82 (H) <i>Lab</i> 15 (I) <i>Design Your Own Lab</i> 26-27 <i>Applying Math</i> 39, 43, 69 <i>Applying Science</i> 68 <i>Lab</i> 86-87 (J) <i>Lab</i> 60-61
S:ESS4:8:2.2 Perform calculations using metric measurements.	<b>Student Edition:</b> (F) <i>Applying Math</i> 54, 172 <i>Lab</i> 105 (G) <i>Applying Math</i> 46, 81 <i>MiniLAB</i> 174 (H) <i>MiniLAB</i> 18 <i>Design Your Own Lab</i> 26-27 <i>Applying Math</i> 57 (I) <i>Applying Math</i> 102, 114, 121 (J) <i>Applying Math</i> 29 <i>MiniLAB</i> 47 <i>Model and Invent Lab</i> 94-95
S:ESS4:8:2.3 Describe how man uses land-based light telescopes, radio telescopes, satellites, manned exploration, probes and robots to collect data.	<b>Student Edition:</b> (J) 8-13, 15-22, 23-29, 56-59, 93 <i>Get Ready to Read</i> 8A-B <i>National Geographic</i> 19 <i>Science Online</i> 25, 27 <b>Teacher Wraparound Edition:</b> (J) CFU 29; DIS 17; SCB 6E-F; SJ 10, 11; TBI 6
<b>3. LOCAL AND GLOBAL ENVIRONMENTAL ISSUES</b>	
S:ESS4:8:3.1 Provide examples of how creative thinking and economic need has shaped the way people use natural materials, such as the use of metal ores, petroleum, and fresh water.	<b>Student Edition:</b> (F) 19-25, 66-75, 76-81, 83-87 (H) 16-21, 44-45 <b>Teacher Wraparound Edition:</b> (F) A 25; DI 21; DIS 90; QD 23, 71; SJ 24; TFYI 23 (H) CC 18; MM 20

STANDARDS	PAGE REFERENCES
<p>S:ESS4:8:3.2 Explain how to test natural materials to measure and compare their properties.</p>	<p><b>Student Edition:</b>  (F) 14-18  <i>Section Review</i> 18  <i>Lab</i> 26-27, 56-57</p> <p><b>Teacher Wraparound Edition:</b>  (F) A 27; AIL 56; DIS 15; LD 16, 54; QD 17, 41</p>
<p>S:ESS4:8:3.3 Explain how technologies can reduce the environmental impact of natural disasters.</p>	<p><b>Student Edition:</b>  (F) 143-145  <i>The Nature of Science</i> 2-5  <i>You Do It</i> 5</p> <p>(G) 42-43  (I) <i>The Nature of Science</i> 2-5</p> <p><b>Teacher Wraparound Edition:</b>  (G) LD 100  (I) QD 4</p>
<p>S:ESS4:8:3.4 Identify the potential impact of converting forested land to uses such as farms, homes, factories, or tourist attractions.</p>	<p><b>Student Edition:</b>  (G) 50-53  <i>Science Online</i> 51  <i>Applying Skills</i> 53  <i>Integrate History</i> 77</p> <p>(H) 76-81  <i>Science Online</i> 81</p> <p>(I) 83  <i>Science Online</i> 83</p> <p><b>Teacher Wraparound Edition:</b>  (G) CFU 53; DI 52; R 53</p>
<p><b>4. CAREER TECHNICAL EDUCATION CONNECTIONS</b></p>	
<p>S:ESS4:8:4.1 Understand that some scientific jobs/careers involve the application of Earth Space science content knowledge and experience in specific ways that meet the goals of the job.</p>	<p><b>Student Edition:</b>  (F) <i>Integrate Careers</i> 52, 77, 113, 141, 158  (G) <i>Integrate Careers</i> 51, 93  (H) <i>The Nature of Science</i> 2-5  <i>Integrate Careers</i> 79, 108, 136</p> <p>(I) <i>Integrate Careers</i> 79  (J) <i>Integrate Careers</i> 18, 51</p>