

**ACCESS SCIENCE © 2005**  
correlated to  
**Kentucky**  
**Combined Curriculum for**  
**Grades 6-8**

**(Academic Expectations, Program of Studies,  
and Core Content for Assessment)**



**YOUR KENTUCKY GREAT SOURCE REPRESENTATIVE**

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correlated to

## Kentucky Combined Curriculum for Grade 6

(Academic Expectations, Program of Studies, and Core Content for Assessment)

### Physical Science - Motions and Forces

#### Science 6 62

Combined Curriculum, Grade 6	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher's Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher's Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher's Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher's Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b><u>Academic Expectations</u></b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher's Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>

Combined Curriculum, Grade 6	ACCESS Science
<p><b><u>Program of Studies</u></b>  <b>S-6-PS-1</b> Students will describe, measure, and represent (e.g., arrows) an object's motion.</p>	<p><b>Student Edition:</b> 19, 75</p> <p><b>Teacher's Edition:</b> 19, 222, 258, 261, 269, 275, 276, 277</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-1.2.1</b> The motion of an object can be described by its relative position, direction of motion, and speed. That motion can be measured and represented on a graph.</p>	<p><b>Student Edition:</b> 270, 275</p> <p><b>Teacher's Edition:</b> 270, 275</p>

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Combined Curriculum, Grade 6	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher's Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher's Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher's Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher's Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b><u>Academic Expectations</u></b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher's Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>

Combined Curriculum, Grade 6	ACCESS Science
<p><b><u>Program of Studies</u></b>  <b>S-6-PS-2</b> Students will investigate balanced or unbalanced forces and the effect on an object's motion.</p>	<p><b>Student Edition:</b> 19, 279  <b>Teacher's Edition:</b> 279</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-1.2.2</b> An object remains at rest or maintains a constant speed and direction of motion unless an unbalanced force acts on it.</p>	<p><b>Student Edition:</b> 276  <b>Teacher's Edition:</b> 276</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-1.2.3</b> When an unbalanced force acts on an object, the change in speed and/or direction depends on the size and direction of the force.</p>	<p><b>Student Edition:</b> 273  <b>Teacher's Edition:</b> 273</p>

## Earth Space Science - Earth in the Solar System

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Combined Curriculum, Grade 6	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187  <b>Teacher's Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289  <b>Teacher's Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218  <b>Teacher's Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251  <b>Teacher's Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>

<b>Combined Curriculum, Grade 6</b>	<b>ACCESS Science</b>
<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b>Program of Studies</b>  <b>S-6-ESS-1</b> Students will model the solar system (e.g., structure, number of planets) and its components (e.g., planets, moons, asteroids).</p>	<p><b>Student Edition:</b> 294, 299-303</p> <p><b>Teacher’s Edition:</b> 294, 299, 300, 302, 303</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-2.3.1</b> Earth is the third planet from the Sun in a system that includes the moon, the Sun, eight other planets and their moons, and smaller objects such as asteroids and comets. The Sun, an average star, is the central and largest body in the solar system.</p>	<p><b>Student Edition:</b> 299-301</p> <p><b>Teacher’s Edition:</b> 299, 300, 301</p>

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<b>Combined Curriculum, Grade 6</b>	<b>ACCESS Science</b>
<p><b>Academic Expectations</b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b>Academic Expectations</b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b>Academic Expectations</b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b>Academic Expectations</b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>

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<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b>Program of Studies</b>  <b>S-6-ESS-2</b> Students will model motion (e.g., orbits) of astronomical objects (e.g., planets, constellations, galaxies) to explain phenomena such as days, years, and eclipses.</p>	<p><b>Student Edition:</b> 83, 299-303</p> <p><b>Teacher’s Edition:</b> 83, 299, 300, 302, 303</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-2.3.2</b> Most objects in the solar system are in regular and predictable motion. Those motions explain such phenomena as the day, the year, phases of the moon, and eclipses.</p>	<p><b>Student Edition:</b> 78-85</p> <p><b>Teacher’s Edition:</b> 78, 79, 80, 81, 82, 83, 84, 85</p>

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<p><b>Academic Expectations</b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b>Academic Expectations</b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b>Academic Expectations</b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b>Academic Expectations</b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>

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<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b>Program of Studies</b>  <b>S-6-ESS-3</b> Students will recognize that gravitational forces cause motion in the solar system.</p>	<p><b>Student Edition:</b> 78, 294, 299</p> <p><b>Teacher’s Edition:</b> 294, 299</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-2.3.3</b> Gravity is the force that keeps the planets in orbit around the Sun and governs the rest of the motion in the solar system. The gravitational pull of the Sun and moon on Earth’s oceans is the major cause of tides.</p>	<p><b>Student Edition:</b> 84, 294</p> <p><b>Teacher’s Edition:</b> 84</p>

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<b>Combined Curriculum, Grade 6</b>	<b>ACCESS Science</b>
<p><b>Academic Expectations</b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b>Academic Expectations</b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
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<p><b>Academic Expectations</b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>

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<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher's Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b>Program of Studies</b>  <b>S-6-ESS-4</b> Students will identify phenomena (e.g., growth of plants, winds, water cycle, ocean currents) on the Earth caused by the Sun's energy.</p>	<p><b>Student Edition:</b> 68-69, 82, 83, 108, 120, 262</p> <p><b>Teacher's Edition:</b> 68, 69, 82, 83, 108</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-2.1.7</b> Global patterns of atmospheric movement influence local weather. Oceans have a major effect on climate, because water in the oceans holds a large amount of heat.</p>	<p><b>Student Edition:</b> 68, 70-71</p> <p><b>Teacher's Edition:</b> 68, 70, 71</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-2.3.4</b> The Sun is the major source of energy for Earth. The water cycle, winds, ocean currents, and growth of plants are affected by the Sun's energy. Seasons result from variations in the amount of the Sun's energy hitting Earth's surface.</p>	<p><b>Student Edition:</b> 65-71, 78-83, 164-166</p> <p><b>Teacher's Edition:</b> 65, 66, 68, 69, 70, 71, 78, 79, 80, 81, 82, 83, 164, 165, 166</p>

## Life Science - Regulation and Behavior

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Combined Curriculum, Grade 6	ACCESS Science
<p><b>Academic Expectations</b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher's Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b>Academic Expectations</b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher's Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b>Academic Expectations</b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher's Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>

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<p><b>Academic Expectations</b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b>Program of Studies</b>  <b>S-6-LS-1</b> Students will investigate how organisms obtain and use resources, grow, reproduce, and maintain stable internal conditions. Examine the regulation of an organism's internal environment.</p>	<p><b>Student Edition:</b> 117-121, 149-157, 161-169, 173-181, 185-193</p> <p><b>Teacher’s Edition:</b> 117, 118, 119, 120, 121, 149, 150, 152, 153, 156, 157, 161, 162, 163, 164, 165, 166, 167, 168, 169, 173, 174, 175, 176, 177, 178, 179, 180, 181, 186, 187, 188, 189, 190, 191, 192, 193</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.2.1</b> All organisms must be able to obtain and use resources, grow, reproduce, and maintain stable internal conditions while living in a constantly changing external environment.</p>	<p><b>Student Edition:</b> 148-157, 160-169, 172-181</p> <p><b>Teacher’s Edition:</b> 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.2.2</b> Regulation of an organism's internal environment involves sensing the internal environment and changing physiological activities to keep conditions within the range required to survive. Maintaining a stable internal environment is essential for an organism's survival.</p>	<p><b>Student Edition:</b> 176-177</p> <p><b>Teacher’s Edition:</b> 176, 177</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.5.4</b> The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). Given adequate biotic and abiotic resources and no diseases or predators, populations (including humans) increase at rapid rates. Lack of resources and other factors, such as predation and climate, limit the growth of populations in specific niches in the ecosystem.</p>	<p><b>Student Edition:</b> 104-105, 117</p> <p><b>Teacher’s Edition:</b> 104-105, 115, 117</p>

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<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b><u>Academic Expectations</u></b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b><u>Program of Studies</u></b>  <b>S-6-LS-2</b> Students will analyze internal or environmental stimuli and organisms' behavioral responses. Explore how organisms' behavior changes through adaptation.</p>	<p><b>Student Edition:</b> 197, 198, 200-201, 202</p> <p><b>Teacher’s Edition:</b> 197, 198, 199, 200, 201, 202</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-3.2.3</b> Behavior is one kind of response an organism may make to an internal or environmental stimulus. A behavioral response requires coordination and communication at many levels including cells, organ systems, and organisms. Behavioral response is a set of actions determined in part by heredity and in part from experience.</p>	<p><b>Student Edition:</b> 200, 201</p> <p><b>Teacher’s Edition:</b> 200, 201</p>

# Life Science - Populations and Ecosystems

## Science 6 70

Combined Curriculum, Grade 6	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b><u>Academic Expectations</u></b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b><u>Program of Studies</u></b>  <b>S-6-LS-3</b> Students will observe populations and determine the functions (e.g., decomposers, producers, consumers) they serve in an ecosystem.</p>	<p><b>Student Edition:</b> 120-121</p> <p><b>Teacher’s Edition:</b> 120, 121</p>

Combined Curriculum, Grade 6	ACCESS Science
<p><b>Core Content for Assessment</b>  <b>SC-M-3.5.2</b> Populations of organisms can be categorized by the function they serve in an ecosystem. Plants and some microorganisms are producers because they make their own food. All animals, including humans, are consumers, and obtain their food by eating other organisms. Decomposers, primarily bacteria and fungi, are consumers that use waste materials and dead organisms for food. Food webs identify the relationships among producers, consumers, and decomposers in an ecosystem.</p>	<p><b>Student Edition:</b> 114, 115, 116-121, 122, 123</p> <p><b>Teacher’s Edition:</b> 114, 115, 116, 117, 118, 119, 120, 121, 122, 123</p>

## Science 6 71

Combined Curriculum, Grade 6	ACCESS Science
<p><b>Academic Expectations</b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b>Academic Expectations</b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b>Academic Expectations</b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b>Academic Expectations</b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>

Combined Curriculum, Grade 6	ACCESS Science
<p><b><u>Program of Studies</u></b>  <b>S-6-LS-4</b> Students will investigate energy flow in ecosystems.</p>	<p><b>Student Edition:</b> 116-121  <b>Teacher’s Edition:</b> 116, 117, 118, 119, 120, 121</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-3.5.3</b> For most ecosystems, the major source of energy is sunlight. Energy entering ecosystems as sunlight is transferred by producers into chemical energy through photosynthesis. That energy then passes from organism to organism in food webs.</p>	<p><b>Student Edition:</b> 164-166  <b>Teacher’s Edition:</b> 164, 165, 166</p>

## Science 6 7 2

Combined Curriculum, Grade 6	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187  <b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289  <b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218  <b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251  <b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b><u>Academic Expectations</u></b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207  <b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>

Combined Curriculum, Grade 6	ACCESS Science
<p><b>Program of Studies</b>  <b>S-6-LS-5</b> Students will investigate factors (e.g., resources, light, water) that affect the number of organisms an ecosystem can support.</p>	<p><b>Student Edition:</b> 114-115, 116-121</p> <p><b>Teacher’s Edition:</b> 114, 115, 116, 117, 118, 119, 120, 121</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.5.4</b> The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). Given adequate biotic and abiotic resources and no diseases or predators, populations (including humans) increase at rapid rates. Lack of resources and other factors, such as predation and climate, limit the growth of populations in specific niches in the ecosystem.</p>	<p><b>Student Edition:</b> 104-105, 117</p> <p><b>Teacher’s Edition:</b> 104-105, 115, 117</p>

## ACADEMIC EXPECTATIONS

Academic Expectations	ACCESS Science
<p><b>2.1</b> Students understand scientific ways of thinking and working and use those methods to solve real-life problems.</p>	<p><b>Student Edition:</b> 16-27, 31, 38, 39, 43, 50, 51, 55, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 103, 110, 111, 115, 122, 123, 127, 134, 135, 139, 146, 147, 151, 158, 159, 163, 170, 171, 175, 182, 183, 187, 194, 195, 206, 207, 211, 218, 219, 230, 231, 235, 242, 243, 247, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p> <p><b>Teacher’s Edition:</b> 16-27, 31, 35, 38, 39, 41, 43, 47, 50, 51, 55, 60, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 101, 103, 110, 111, 115, 122, 123, 125, 127, 133, 134, 135, 139, 142, 146, 147, 151, 156, 158, 159, 163, 168, 170, 171, 175, 178, 182, 183, 187, 194, 195, 206, 207, 211, 216, 218, 219, 221, 222, 226, 228, 230, 231, 234, 235, 237, 242, 243, 244, 247, 248, 254, 255, 259, 262, 266, 267, 268, 271, 275, 278, 279, 281, 282, 283, 290, 291, 295, 302, 303</p>
<p><b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>

Academic Expectations	ACCESS Science
<p><b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>

## PROGRAM OF STUDIES

### Scientific Inquiry

#### Scientific Ways of Thinking and Working (2.1)

Content/Process, Grade 6	ACCESS Science
<p><b>Students will</b></p> <p><b>S-6-SI-1</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions that can be answered through scientific investigations combined with scientific information.</li> </ul>	<p><b>Student Edition:</b> 16-27, 38-39, 50-51, 62-63, 74-75, 86-87, 98-99, 110-111, 122-123, 134-135, 146-147, 158-159, 170-171, 182-183, 194-195, 206-207, 218-219, 230-231, 242-243, 254-255, 259, 266-267, 271, 278-279, 283, 290-291, 295, 302-303</p> <p><b>Teacher’s Edition:</b> 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 50, 74, 75, 87, 98, 110, 122, 123, 134, 146, 147, 158, 159, 170, 171, 182, 183, 194, 195, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p>

Content/Process, Grade 6	ACCESS Science
<p><b>S-6-SI-2</b></p> <ul style="list-style-type: none"> <li>use appropriate equipment (e.g., binoculars), tools (e.g., beakers), techniques (e.g. ordering), technology (e.g., calculators), and mathematics in scientific investigations.</li> </ul>	<p><b>Student Edition:</b> 19, 27, 38-39, 50-51, 62-63, 74-75, 86-87, 91, 98-99, 110-111, 122-123, 134-135, 146-147, 158-159, 163, 170-171, 182-183, 194-195, 202, 206-207, 218-219, 230-231, 242-243, 254-255, 266-267, 271, 278-279, 283, 290-291, 295, 296, 302-303</p> <p><b>Teacher’s Edition:</b> 19, 38, 62, 74, 87, 91, 98, 110, 122, 146, 147, 158, 159, 163, 170, 171, 182, 183, 194, 195, 202, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p>
<p><b>S-6-SI-3</b></p> <ul style="list-style-type: none"> <li>use evidence (e.g., orderings, organizations), logic, and scientific knowledge to develop scientific explanations.</li> </ul>	<p><b>Student Edition:</b> 26-27, 38-39, 50-51, 62-63, 74-75, 86-87, 98-99, 110-111, 122-123, 134-135, 146-147, 158-159, 170-171, 182-183, 194-195, 206-207, 218-219, 230-231, 242-243, 254-255, 266-267, 271, 278-279, 283, 290-291, 295, 302-303</p> <p><b>Teacher’s Edition:</b> 26, 27, 38, 39, 50, 51, 62, 74, 75, 87, 98, 99, 110, 111, 122, 123, 134, 135, 146, 147, 158, 159, 170, 171, 182, 183, 194, 195, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p>
<p><b>S-6-SI-4</b></p> <ul style="list-style-type: none"> <li>design and conduct different kinds of scientific investigations to answer different kinds of questions.</li> </ul>	<p><b>Student Edition:</b> 26-27, 38-39, 50-51, 62-63, 74-75, 86-87, 98-99, 110-111, 122-123, 134-135, 146-147, 158-159, 170-171, 182-183, 194-195, 206-207, 218-219, 230-231, 242-243, 254-255, 266-267, 271, 278-279, 283, 290-291, 295, 302-303</p> <p><b>Teacher’s Edition:</b> 26, 27, 38, 39, 50, 51, 62, 74, 75, 87, 98, 99, 110, 111, 122, 123, 134, 135, 146, 147, 158, 159, 170, 171, 182, 183, 194, 195, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p>
<p><b>S-6-SI-5</b></p> <ul style="list-style-type: none"> <li>communicate (e.g., speak, write) designs, procedures, and results of scientific investigations.</li> </ul>	<p><b>Student Edition:</b> 24, 25, 26-27, 31, 38-39, 43, 47, 50-51, 55, 62-63, 67, 74-75, 86-87, 98-99, 103, 110-111, 122-123, 127, 134-135, 146-147, 151, 158-159, 170-171, 175, 182-183, 194-195, 206-207, 214, 218-219, 229, 230-231, 235, 237, 242-243, 249, 253, 254-255, 259, 266-267, 271, 278-279, 283, 290-291, 295, 297, 301, 302-303</p> <p><b>Teacher’s Edition:</b> 24, 25, 26, 27, 31, 38, 39, 43, 47, 50, 51, 55, 62, 63, 67, 74, 75, 86, 87, 98, 99, 103, 110, 111, 122, 123, 134, 135, 146, 147, 151, 158, 159, 170, 171, 175, 182, 183, 194, 195, 206, 207, 214, 218, 219, 229, 230, 231, 235, 237, 242, 243, 253, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 301, 302, 303</p>

<b>Content/Process, Grade 6</b>	<b>ACCESS Science</b>
<b>S-6-SI-6</b> <ul style="list-style-type: none"> <li>review and analyze scientific investigations and explanations of other students.</li> </ul>	<b>Student Edition:</b> 27, 62-63, 98-99, 123, 159, 194-195, 254, 266, 271, 279, 283 <b>Teacher's Edition:</b> 27, 62, 98, 194, 254, 266, 283

**Conceptual Understandings**  
**Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.2-2.6)**

**Physical Science**

**Motions and Forces**

<b>Content/Process, Grade 6</b>	<b>ACCESS Science</b>
<b>Students will</b>  <b>S-6-PS-1</b> <ul style="list-style-type: none"> <li>describe, measure, and represent (e.g., arrows) an object's motion.</li> </ul>	<b>Student Edition:</b> 19, 75 <b>Teacher's Edition:</b> 19, 222, 258, 261, 269, 275, 276, 277
<b>S-6-PS-2</b> <ul style="list-style-type: none"> <li>investigate balanced or unbalanced forces and the effect on an object's motion.</li> </ul>	<b>Student Edition:</b> 19, 279 <b>Teacher's Edition:</b> 279

**Earth/Space Science**

**Structure of the Earth System**

<b>Content/Process, Grade 6</b>	<b>ACCESS Science</b>
<b>Students will</b>  <b>S-6-ESS-1</b> <ul style="list-style-type: none"> <li>model the solar system (e.g., structure, number of planets) and its components (e.g., planets, moons, asteroids).</li> </ul>	<b>Student Edition:</b> 294, 299-303 <b>Teacher's Edition:</b> 294, 299, 300, 302, 303
<b>S-6-ESS-2</b> <ul style="list-style-type: none"> <li>model motion (e.g., orbits) of astronomical objects (e.g., planets, constellations, galaxies) to explain phenomena such as days, years, and eclipses.</li> </ul>	<b>Student Edition:</b> 83, 299-303 <b>Teacher's Edition:</b> 83, 299, 300, 302, 303
<b>S-6-ESS-3</b> <ul style="list-style-type: none"> <li>recognize that gravitational forces cause motion in the solar system.</li> </ul>	<b>Student Edition:</b> 78, 294, 299 <b>Teacher's Edition:</b> 294, 299

Content/Process, Grade 6	ACCESS Science
<b>S-6-ESS-4</b> <ul style="list-style-type: none"> <li>identify phenomena (e.g., growth of plants, winds, water cycle, ocean currents) on the Earth caused by the Sun's energy.</li> </ul>	<b>Student Edition:</b> 68-69, 82, 83, 108, 120, 262 <b>Teacher's Edition:</b> 68, 69, 82, 83, 108

## Life Science

### Regulation and Behavior

Content/Process, Grade 6	ACCESS Science
<b>Students will</b>  <b>S-6-LS-1</b> <ul style="list-style-type: none"> <li>investigate how organisms obtain and use resources, grow, reproduce, and maintain stable internal conditions. Examine the regulation of an organism's internal environment.</li> </ul>	<b>Student Edition:</b> 117-121, 149-157, 161-169, 173-181, 185-193 <b>Teacher's Edition:</b> 117, 118, 119, 120, 121, 149, 150, 152, 153, 156, 157, 161, 162, 163, 164, 165, 166, 167, 168, 169, 173, 174, 175, 176, 177, 178, 179, 180, 181, 186, 187, 188, 189, 190, 191, 192, 193
<b>S-6-LS-2</b> <ul style="list-style-type: none"> <li>analyze internal or environmental stimuli and organisms' behavioral responses. Explore how organisms' behavior changes through adaptation.</li> </ul>	<b>Student Edition:</b> 197, 198, 200-201, 202 <b>Teacher's Edition:</b> 197, 198, 199, 200, 201, 202

### Populations and Ecosystems

Content/Process, Grade 6	ACCESS Science
<b>Students will</b>  <b>S-6-LS-3</b> <ul style="list-style-type: none"> <li>observe populations and determine the functions (e.g., decomposers, producers, consumers) they serve in an ecosystem.</li> </ul>	<b>Student Edition:</b> 120-121 <b>Teacher's Edition:</b> 120, 121
<b>S-6-LS-4</b> <ul style="list-style-type: none"> <li>investigate energy flow in ecosystems.</li> </ul>	<b>Student Edition:</b> 116-121 <b>Teacher's Edition:</b> 116, 117, 118, 119, 120, 121
<b>S-6-LS-5</b> <ul style="list-style-type: none"> <li>investigate factors (e.g., resources, light, water) that affect the number of organisms an ecosystem can support.</li> </ul>	<b>Student Edition:</b> 114-115, 116-121 <b>Teacher's Edition:</b> 114, 115, 116, 117, 118, 119, 120, 121

## Applications/Connections

### Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.2-2.6)

Content/Process, Grade 6	ACCESS Science
<p><b>Students will</b></p> <p><b>S-6-AC-1</b></p> <ul style="list-style-type: none"> <li>examine the interaction between science and technology.</li> </ul>	<p><b>Student Edition:</b> 22, 36, 94, 144, 156, 180, 202, 214, 229, 252, 264, 277, 287, 297</p> <p><b>Teacher's Edition:</b> 22, 36, 48, 68, 94, 106, 132, 144, 168, 180, 202, 214, 229, 240, 252, 264, 277, 287, 297</p>
<p><b>S-6-AC-2</b></p> <ul style="list-style-type: none"> <li>recognize how science is used to understand changes in populations, issues related to resources, and changes in environments.</li> </ul>	<p><b>Student Edition:</b> 44, 94, 102-103, 105, 106, 117, 122, 192, 202</p> <p><b>Teacher's Edition:</b> 44, 94, 102, 103, 105, 106, 117, 122, 192</p>

## CORE CONTENT FOR ASSESSMENT

### Conceptual Understandings: Physical Science

#### Academic Expectations

#### 2.2 Patterns of Change, 2.3 Systems, 2.4 Scale and Models, 2.5 Constancy, and 2.6 Change Over Time

#### Properties and Changes of Properties in Matter

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>SC-M-1.1.1</b></p> <p>A substance has characteristic physical properties (e.g., density, boiling point, solubility) that are independent of the amount of the sample. A mixture of substances often can be separated into the original substances by using one or more of these characteristic physical properties.</p>	<p><b>Student Edition:</b> 217, 227, 228, 236, 238, 245, 250-255</p> <p><b>Teacher's Edition:</b> 217, 227, 228, 236, 238, 245, 250, 251, 252, 253, 254, 255</p>
<p><b>SC-M-1.1.2</b></p> <p>The chemical properties of a substance cause it to react in predictable ways with other substances to form compounds with different characteristic properties. In chemical reactions, the total mass is conserved. Substances are often classified into groups if they react in similar ways.</p>	<p><b>Student Edition:</b> 96, 215, 217, 227, 228, 236, 245, 250-255</p> <p><b>Teacher's Edition:</b> 215, 217, 227, 228, 236, 245, 250, 251, 252, 253, 254, 255</p>
<p><b>SC-M-1.1.3</b></p> <p>Chemical elements do not break down during normal laboratory reactions such as heating, exposure to electric currents, or reaction with acids. Elements combine in many ways to produce compounds.</p>	<p><b>Student Edition:</b> 215-217</p> <p><b>Teacher's Edition:</b> 215, 216, 217</p>

## Motions and Forces

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>SC-M-1.2.1</b> The motion of an object can be described by its relative position, direction of motion, and speed. That motion can be measured and represented on a graph.</p>	<p><b>Student Edition:</b> 270, 275 <b>Teacher's Edition:</b> 270, 275</p>
<p><b>SC-M-1.2.2</b> An object remains at rest or maintains a constant speed and direction of motion unless an unbalanced force acts on it.</p>	<p><b>Student Edition:</b> 276 <b>Teacher's Edition:</b> 276</p>
<p><b>SC-M-1.2.3</b> When an unbalanced force acts on an object, the change in speed and/or direction depends on the size and direction of the force.</p>	<p><b>Student Edition:</b> 273 <b>Teacher's Edition:</b> 273</p>

## Transfer of Energy

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>SC-M-1.3.1</b> Energy is a property of many substances and is associated with heat, light, electricity, and sound. Energy is transferred in many ways.</p>	<p><b>Student Edition:</b> 225, 263, 265, 283, 284-285, 280-287, 288-289, 290, 291 <b>Teacher's Edition:</b> 225, 263, 265, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291</p>
<p><b>SC-M-1.3.2</b> Heat energy moves in predictable ways, flowing from warmer objects to cooler ones, until both objects reach the same temperature.</p>	<p><b>Student Edition:</b> 225, 263, 265 <b>Teacher's Edition:</b> 225, 263, 265</p>
<p><b>SC-M-1.3.3</b> Light energy interacts with matter by transmission (including refraction), absorption, or scattering (including reflection).</p>	<p><b>Student Edition:</b> 280-287, 290, 291 <b>Teacher's Edition:</b> 280, 281, 282, 284</p>
<p><b>SC-M-1.3.4</b> The Sun is a major source of energy for changes on Earth's surface. The Sun loses energy by emitting light. A tiny fraction of that light reaches Earth, transferring energy from the Sun to Earth.</p>	<p><b>Student Edition:</b> 68, 80, 108 <b>Teacher's Edition:</b> 68, 80, 108</p>
<p><b>SC-M-1.3.5</b> Electrical circuits provide a means of transferring electrical energy when heat, light, sound, and chemical changes are produced.</p>	<p><b>Student Edition:</b> 257, 258-259, 262 <b>Teacher's Edition:</b> 257, 258, 259, 262</p>

## Conceptual Understandings: Earth and Space Science

### Academic Expectations

**2.2 Patterns of Change, 2.3 Systems, 2.4 Scale and Models, 2.5 Constancy, and 2.6 Change Over Time**

### Structure of the Earth System: Lithosphere, Hydrosphere, Atmosphere

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>SC-M-2.1.1</b> The Earth is layered. The lithosphere is the thin crust of the Earth. Lithospheric plates move slowly in response to movements in the mantle. There is a dense core at the center of the Earth.</p>	<p><b>Student Edition:</b> 29-38, 44-45 <b>Teacher's Edition:</b> 29, 30, 32, 33, 34, 35, 36, 37, 38</p>
<p><b>SC-M-2.1.2</b> Landforms are a result of a combination of constructive and destructive forces. Constructive forces include crustal deformation, volcanic eruption, and deposition of sediment, while destructive forces include weathering and erosion.</p>	<p><b>Student Edition:</b> 29-38, 42-49, 54-61 <b>Teacher's Edition:</b> 31, 32, 53, 54, 56, 57, 58, 60, 61</p>
<p><b>SC-M-2.1.3</b> Materials found in the lithosphere and mantle are changed in a continuous process called the rock cycle.</p>	<p><b>Student Edition:</b> 48-49 <b>Teacher's Edition:</b> 48, 49</p>
<p><b>SC-M-2.1.4</b> Soil consists of weathered rocks and decomposed organic material from dead plants, animals, fungi, protists, and bacteria. Soils are often found in layers, with each having a different chemical composition and texture.</p>	<p><b>Student Edition:</b> 56 <b>Teacher's Edition:</b> 56</p>
<p><b>SC-M-2.1.5</b> Water, which covers the majority of the Earth's surface, circulates through the crust, oceans, and atmosphere in what is known as the water cycle. Water dissolves minerals and gases and may carry them to the oceans.</p>	<p><b>Student Edition:</b> 70-71 <b>Teacher's Edition:</b> 70, 71</p>
<p><b>SC-M-2.1.6</b> Earth is surrounded by a relatively thin blanket of air called the atmosphere. The atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water vapor. The atmosphere has different properties at different elevations.</p>	<p><b>Student Edition:</b> 68, 108 <b>Teacher's Edition:</b> 68, 108</p>

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>SC-M-2.1.7</b> Global patterns of atmospheric movement influence local weather. Oceans have a major effect on climate, because water in the oceans holds a large amount of heat.</p>	<p><b>Student Edition:</b> 68, 70-71 <b>Teacher's Edition:</b> 68, 70, 71</p>

## Earth's History

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>SC-M-2.2.1</b> The Earth's processes we see today, including erosion, movement of lithospheric plates, and changes in atmospheric composition, are similar to those that occurred in the past. Earth's history is also influenced by occasional catastrophes such as the impact of an asteroid or comet.</p>	<p><b>Student Edition:</b> 28-37, 45, 52-61, 68-73 <b>Teacher's Edition:</b> 29, 30, 32, 33, 34, 35, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 68</p>
<p><b>SC-M-2.2.2</b> Fossils provide important evidence of how environmental conditions and life have changed.</p>	<p><b>Student Edition:</b> 30-31, 196-199, 203, 204 <b>Teacher's Edition:</b> 196, 197, 198, 199, 203, 204</p>

## Earth in the Solar System

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>SC-M-2.3.1</b> Earth is the third planet from the Sun in a system that includes the moon, the Sun, eight other planets and their moons, and smaller objects such as asteroids and comets. The Sun, an average star, is the central and largest body in the solar system.</p>	<p><b>Student Edition:</b> 299-301 <b>Teacher's Edition:</b> 299, 300, 301</p>
<p><b>SC-M-2.3.2</b> Most objects in the solar system are in regular and predictable motion. Those motions explain such phenomena as the day, the year, phases of the moon, and eclipses.</p>	<p><b>Student Edition:</b> 78-85 <b>Teacher's Edition:</b> 78, 79, 80, 81, 82, 83, 84, 85</p>
<p><b>SC-M-2.3.3</b> Gravity is the force that keeps the planets in orbit around the Sun and governs the rest of the motion in the solar system. The gravitational pull of the Sun and moon on Earth's oceans is the major cause of tides.</p>	<p><b>Student Edition:</b> 84, 294 <b>Teacher's Edition:</b> 84</p>

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>SC-M-2.3.4</b> The Sun is the major source of energy for Earth. The water cycle, winds, ocean currents, and growth of plants are affected by the Sun's energy. Seasons result from variations in the amount of the Sun's energy hitting Earth's surface.</p>	<p><b>Student Edition:</b> 65-71, 78-83, 164-166</p> <p><b>Teacher's Edition:</b> 65, 66, 68, 69, 70, 71, 78, 79, 80, 81, 82, 83, 164, 165, 166</p>

## Conceptual Understandings: Life Science

### Academic Expectations

#### 2.2 Patterns of Change, 2.3 Systems, 2.4 Scale and Models, 2.5 Constancy, and 2.6 Change Over Time

### Structure and Function in Living Systems

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>SC-M-3.1.1</b> Living systems at all levels of organization demonstrate the complementary nature of structure and function. Important levels of organization for structure and function include cells, tissues, organs, organ systems, organisms (e.g., bacteria, protists, fungi, plants, animals), and ecosystems.</p>	<p><b>Student Edition:</b> 114-115, 130, 132-133, 136-145, 148-155</p> <p><b>Teacher's Edition:</b> 114, 115, 130, 132, 133, 136, 137, 140, 141, 142, 143, 148, 149, 152, 153, 154, 155</p>
<p><b>SC-M-3.1.2</b> All organisms are composed of cells, the fundamental unit of life. Most organisms are single cells; other organisms, including plants and animals are multicellular.</p>	<p><b>Student Edition:</b> 129-133, 136-145, 149-157</p> <p><b>Teacher's Edition:</b> 129, 130, 131, 132, 133, 136, 137, 138, 140, 141, 142, 143, 144, 145, 149, 150, 151, 152, 153, 154, 155, 156, 157</p>
<p><b>SC-M-3.1.3</b> Cells carry on the many functions needed to sustain life. They grow and divide, thereby producing more cells. This requires that they take in nutrients, which they use to provide energy for the work that cells do and to make the materials that a cell or an organism needs.</p>	<p><b>Student Edition:</b> 136-145, 160-169</p> <p><b>Teacher's Edition:</b> 136, 137, 138, 140, 141, 142, 143, 144, 145, 161, 162, 163, 164, 165, 166, 167, 168, 169</p>
<p><b>SC-M-3.1.4</b> Specialized cells perform specialized functions in multicellular organisms. Groups of specialized cells cooperate to form tissues. Different tissues are, in turn, grouped together to form larger functional units called organs. Each type of cell, tissue, and organ has a distinct structure and set of functions that serve the organism.</p>	<p><b>Student Edition:</b> 148-157</p> <p><b>Teacher's Edition:</b> 148, 149, 150, 151, 152, 153, 154, 155, 156, 157</p>

## Regulation and Behavior

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>SC-M-3.2.1</b> All organisms must be able to obtain and use resources, grow, reproduce, and maintain stable internal conditions while living in a constantly changing external environment.</p>	<p><b>Student Edition:</b> 148-157, 160-169, 172-181</p> <p><b>Teacher’s Edition:</b> 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181</p>
<p><b>SC-M-3.2.2</b> Regulation of an organism's internal environment involves sensing the internal environment and changing physiological activities to keep conditions within the range required to survive. Maintaining a stable internal environment is essential for an organism's survival.</p>	<p><b>Student Edition:</b> 176-177</p> <p><b>Teacher’s Edition:</b> 176, 177</p>
<p><b>SC-M-3.2.3</b> Behavior is one kind of response an organism may make to an internal or environmental stimulus. A behavioral response requires coordination and communication at many levels including cells, organ systems, and organisms. Behavioral response is a set of actions determined in part by heredity and in part from experience.</p>	<p><b>Student Edition:</b> 200, 201</p> <p><b>Teacher’s Edition:</b> 200, 201</p>

## Reproduction and Heredity

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>SC-M-3.3.1</b> Reproduction is a characteristic of all living systems and is essential to the continuation of every species. Some organisms reproduce asexually, others reproduce sexually. In species that reproduce sexually, including humans and plants, male and female sex cells carrying genetic information unite to begin the development of a new individual.</p>	<p><b>Student Edition:</b> 184-193</p> <p><b>Teacher’s Edition:</b> 184, 185, 186, 187, 188, 189, 190, 191, 192, 193</p>
<p><b>SC-M-3.3.2</b> Every organism requires a set of instructions for specifying its traits. This information is contained in genes located in the chromosomes of each cell. Heredity is the passage of these instructions from one generation to another.</p>	<p><b>Student Edition:</b> 184-193</p> <p><b>Teacher’s Edition:</b> 184, 185, 186, 187, 188, 189, 190, 191, 192, 193</p>

## Diversity and Adaptations of Organisms

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>SC-M-3.4.1</b> Biological change over time accounts for the diversity of species developed through gradual processes over many generations. Biological adaptations include changes in structures, behaviors, or physiology that enhance survival and reproductive success in a particular environment.</p>	<p><b>Student Edition:</b> 201, 203, 205 <b>Teacher’s Edition:</b> 201, 203, 205</p>
<p><b>SC-M-3.4.2</b> Extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient to allow its survival. Extinction of species is common; most of the species that have lived on Earth no longer exist.</p>	<p><b>Student Edition:</b> 30-31, 196-199, 204 <b>Teacher’s Edition:</b> 196, 197, 198, 199, 204</p>

## Populations and Ecosystems

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>SC-M-3.5.1</b> A population consists of all individuals of a species that occur together at a given place and time. All populations living together and the physical factors with which they interact compose an ecosystem.</p>	<p><b>Student Edition:</b> 114-115 <b>Teacher’s Edition:</b> 114, 115</p>
<p><b>SC-M-3.5.2</b> Populations of organisms can be categorized by the function they serve in an ecosystem. Plants and some microorganisms are producers because they make their own food. All animals, including humans, are consumers, and obtain their food by eating other organisms. Decomposers, primarily bacteria and fungi, are consumers that use waste materials and dead organisms for food. Food webs identify the relationships among producers, consumers, and decomposers in an ecosystem.</p>	<p><b>Student Edition:</b> 114, 115, 116-121, 122, 123 <b>Teacher’s Edition:</b> 114, 115, 116, 117, 118, 119, 120, 121, 122, 123</p>
<p><b>SC-M-3.5.3</b> For most ecosystems, the major source of energy is sunlight. Energy entering ecosystems as sunlight is transferred by producers into chemical energy through photosynthesis. That energy then passes from organism to organism in food webs.</p>	<p><b>Student Edition:</b> 164-166 <b>Teacher’s Edition:</b> 164, 165, 166</p>

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>SC-M-3.5.4</b> The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). Given adequate biotic and abiotic resources and no diseases or predators, populations (including humans) increase at rapid rates. Lack of resources and other factors, such as predation and climate, limit the growth of populations in specific niches in the ecosystem.</p>	<p><b>Student Edition:</b> 104-105, 117 <b>Teacher’s Edition:</b> 104-105, 115, 117</p>

## Scientific Inquiry

**Inquiry skills will be assessed only in the context of physical, Earth/space, and life sciences content.**

## Academic Expectation

### 2.1 Scientific Ways of Thinking and Working

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>refine and refocus questions that can be answered through scientific investigation combined with scientific information.</li> </ul>	<p><b>Student Edition:</b> 17-25, 175, 235, 243, 271, 279 <b>Teacher’s Edition:</b> 17-25, 175, 235, 243, 271, 279</p>
<ul style="list-style-type: none"> <li>use appropriate equipment, tools, techniques, technology, and mathematics to gather, analyze, and interpret scientific data.</li> </ul>	<p><b>Student Edition:</b> 16-27, 31, 38, 39, 43, 50, 51, 55, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 103, 110, 111, 115, 122, 123, 127, 134, 135, 139, 146, 147, 151, 158, 159, 163, 170, 171, 175, 182, 183, 187, 194, 195, 206, 207, 211, 218, 219, 230, 231, 235, 242, 243, 247, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p> <p><b>Teacher’s Edition:</b> 16-27, 31, 35, 38, 39, 41, 43, 47, 50, 51, 55, 60, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 101, 103, 110, 111, 115, 122, 123, 125, 127, 133, 134, 135, 139, 142, 146, 147, 151, 156, 158, 159, 163, 168, 170, 171, 175, 178, 182, 183, 187, 194, 195, 206, 207, 211, 216, 218, 219, 221, 222, 226, 228, 230, 231, 234, 235, 237, 242, 243, 244, 247, 248, 254, 255, 259, 262, 266, 267, 268, 271, 275, 278, 279, 281, 282, 283, 290, 291, 295, 302, 303</p>
<ul style="list-style-type: none"> <li>use evidence (e.g., computer models), logic, and scientific knowledge to develop scientific explanations.</li> </ul>	<p><b>Student Book:</b> 20-21, 24, 25, 26, 27, 31, 34-35, 38-39, 50, 51, 74-75, 103, 110-111, 127, 135, 199, 206, 247, 255, 278, 303</p> <p><b>Teacher’s Edition:</b> 20, 21, 24, 25, 26, 27, 31, 34, 35, 38, 39, 50, 51, 74, 75, 103, 110, 111, 127, 135, 199, 206, 247, 255, 278, 303</p>

Core Content Statement, Grades 5-7	ACCESS Science
<ul style="list-style-type: none"> <li>design and conduct scientific investigations.</li> </ul>	<p><b>Student Book:</b> 19, 22, 23, 24, 25, 26, 27, 31, 38, 39, 50, 87, 99, 110, 123, 134, 175, 182, 206, 219, 231, 242, 271, 279, 295</p> <p><b>Teacher's Edition:</b> 19, 22, 23, 24, 25, 26, 27, 31, 38, 39, 50, 87, 99, 110, 123, 134, 175, 182, 206, 219, 231, 242, 271, 279, 295</p>
<ul style="list-style-type: none"> <li>communicate (e.g., write, graph) designs, procedures, observations, and results of scientific investigations.</li> </ul>	<p><b>Student Edition:</b> 16-27, 31, 38, 39, 43, 50, 51, 55, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 103, 110, 111, 115, 122, 123, 127, 134, 135, 139, 146, 147, 151, 158, 159, 163, 170, 171, 175, 182, 183, 187, 194, 195, 206, 207, 211, 218, 219, 230, 231, 235, 242, 243, 247, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p> <p><b>Teacher's Edition:</b> 16-27, 31, 35, 38, 39, 41, 43, 47, 50, 51, 55, 60, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 101, 103, 110, 111, 115, 122, 123, 125, 127, 133, 134, 135, 139, 142, 146, 147, 151, 156, 158, 159, 163, 168, 170, 171, 175, 178, 182, 183, 187, 194, 195, 206, 207, 211, 216, 218, 219, 221, 222, 226, 228, 230, 231, 234, 235, 237, 242, 243, 244, 247, 248, 254, 255, 259, 262, 266, 267, 268, 271, 275, 278, 279, 281, 282, 283, 290, 291, 295, 302, 303</p>
<ul style="list-style-type: none"> <li>review and analyze scientific investigations and explanations of other students.</li> </ul>	<p><b>Student Book:</b> 24, 25, 31, 39, 67, 74, 99, 103, 111, 195, 247, 255, 295</p> <p><b>Teacher's Edition:</b> 24, 25, 31, 39, 67, 74, 99, 103, 111, 195, 247, 255, 295</p>

### Applications/Connections

Applications/Connections skills will be assessed only in the context of physical, Earth/space, and life sciences content.

### Academic Expectations

2.2 Patterns of Change, 2.3 Systems, 2.4 Scale and Models, 2.5 Constancy, and 2.6 Change Over Time

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>Students will</b></p> <p><b>Science and Technology</b></p> <ul style="list-style-type: none"> <li>describe how science helps drive technology and technology helps drive science. Because perfectly designed solutions do not exist, technological solutions have intended benefits and unintended consequences.</li> </ul>	<p><b>Student Edition:</b> 22, 36, 48, 57, 68, 83, 94, 106, 117, 132, 144, 156, 168, 180, 192, 202, 214, 229, 240, 252, 264, 277, 287, 297</p> <p><b>Teacher's Edition:</b> 22, 36, 48, 57, 68, 83, 94, 106, 117, 132, 144, 156, 168, 180, 192, 202, 214, 229, 240, 252, 264, 277, 287, 297</p>

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>Science in Personal and Social Perspectives</b></p> <ul style="list-style-type: none"> <li>describe the individual’s roles and responsibilities in the following areas: changes in populations, resources and environments including ecological crises and environmental issues, natural hazards, science and technology in society, and personal and societal issues about risks and benefits.</li> </ul>	<p><b>Student Edition:</b> 97, 99, 100-111, 117</p> <p><b>Teacher’s Edition:</b> 97, 99, 100-111, 117</p>
<p><b>History and Nature of Science</b></p> <ul style="list-style-type: none"> <li>demonstrate the role science plays in everyday life: past, present, and future. Science is a human endeavor. Men and women of various social and ethnic backgrounds engage in activities of science (to include careers in science). Scientists formulate and test their explanations of nature using observations, experiments, and theoretical and mathematical models. It is part of scientific inquiry to evaluate the results of scientific investigations, experiments, observations, theoretical models, and the explanations proposed by other scientists.</li> </ul>	<p><b>Student Book:</b> 17-27, 31, 83, 132, 144, 156, 240, 269, 276, 287, 297</p> <p><b>Teacher’s Edition:</b> 17-27, 31, 35, 83, 132, 144, 156, 240, 269, 276, 287, 297</p>



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correlated to

## Kentucky Combined Curriculum for Grade 7

(Academic Expectations, Program of Studies, and Core Content for Assessment)

### Physical Science - Properties and Changes in Properties in Matter

### Science 7 73

Combined Curriculum, Grade 7	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher's Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher's Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher's Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher's Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b><u>Academic Expectations</u></b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher's Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>

Combined Curriculum, Grade 7	ACCESS Science
<p><b><u>Program of Studies</u></b>  <b>S-7-PS-1</b> Students will investigate characteristic properties (e.g., density) of substances.</p>	<p><b>Student Edition:</b> 228, 231, 236  <b>Teacher’s Edition:</b> 228, 229, 231, 234, 236</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-1.1.1</b> A substance has characteristic physical properties (e.g., density, boiling point, solubility) that are independent of the amount of the sample. A mixture of substances often can be separated into the original substances by using one or more of these characteristic physical properties.</p>	<p><b>Student Edition:</b> 217, 227, 228, 236, 238, 245, 250-255  <b>Teacher’s Edition:</b> 217, 227, 228, 236, 238, 245, 250, 251, 252, 253, 254, 255</p>

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Combined Curriculum, Grade 7	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187  <b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289  <b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218  <b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251  <b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b><u>Academic Expectations</u></b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207  <b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>

Combined Curriculum, Grade 7	ACCESS Science
<p><b>Program of Studies</b>  <b>S-7-PS-2</b> Students will examine chemical reactions between substances, recognize that the total mass remains the same, and that substances are categorized by how they react.</p>	<p><b>Student Edition:</b> 217, 245, 250-255  <b>Teacher’s Edition:</b> 217, 245, 250, 251, 252, 253, 254</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-1.1.2</b> The chemical properties of a substance cause it to react in predictable ways with other substances to form compounds with different characteristic properties. In chemical reactions, the total mass is conserved. Substances are often classified into groups if they react in similar ways.</p>	<p><b>Student Edition:</b> 96, 215, 217, 227, 228, 236, 245, 250-255  <b>Teacher’s Edition:</b> 215, 217, 227, 228, 236, 245, 250, 251, 252, 253, 254, 255</p>

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Combined Curriculum, Grade 7	ACCESS Science
<p><b>Academic Expectations</b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187  <b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b>Academic Expectations</b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289  <b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b>Academic Expectations</b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218  <b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b>Academic Expectations</b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251  <b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207  <b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>

Combined Curriculum, Grade 7	ACCESS Science
<p><b>Program of Studies</b>  <b>S-7-PS-3</b> Students will recognize that elements do not break down during normal laboratory reactions and how elements combine to produce compounds.</p>	<p><b>Student Edition:</b> 96, 215, 229, 232-243  <b>Teacher’s Edition:</b> 215, 229, 232, 233, 234, 237, 242</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-1.1.3</b> Chemical elements do not break down during normal laboratory reactions such as heating, exposure to electric currents, or reaction with acids. Elements combine in many ways to produce compounds.</p>	<p><b>Student Edition:</b> 215-217  <b>Teacher’s Edition:</b> 215, 216, 217</p>

## Earth Space Science - Structure of the Earth System

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Combined Curriculum, Grade 7	ACCESS Science
<p><b>Academic Expectations</b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187  <b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b>Academic Expectations</b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289  <b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b>Academic Expectations</b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218  <b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b>Academic Expectations</b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251  <b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207  <b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>

Combined Curriculum, Grade 7	ACCESS Science
<p><b><u>Program of Studies</u></b>  <b>S-7-ESS-1</b> Students will model Earth's layers.</p>	<p><b>Student Edition:</b> 30, 32  <b>Teacher's Edition:</b> 30, 32</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-2.1.1</b> The Earth is layered. The lithosphere is the thin crust of the Earth. Lithospheric plates move slowly in response to movements in the mantle. There is a dense core at the center of the Earth.</p>	<p><b>Student Edition:</b> 29-38, 44-45  <b>Teacher's Edition:</b> 29, 30, 32, 33, 34, 35, 36, 37, 38</p>

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Combined Curriculum, Grade 7	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187  <b>Teacher's Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289  <b>Teacher's Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218  <b>Teacher's Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251  <b>Teacher's Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b><u>Academic Expectations</u></b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207  <b>Teacher's Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>

Combined Curriculum, Grade 7	ACCESS Science
<p><b><u>Program of Studies</u></b>  <b>S-7-ESS-2</b> Students will demonstrate the rock cycle (e.g., weathered rocks produce soil, weathered rocks are often recrystallized into new rock) and examine characteristics of soils.</p>	<p><b>Student Edition:</b> 48-49, 51, 54, 56-57, 61, 63  <b>Teacher’s Edition:</b> 48, 49, 51, 54, 56, 57, 61, 63</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-2.1.3</b> Materials found in the lithosphere and mantle are changed in a continuous process called the rock cycle.</p>	<p><b>Student Edition:</b> 48-49  <b>Teacher’s Edition:</b> 48, 49</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-2.1.4</b> Soil consists of weathered rocks and decomposed organic material from dead plants, animals, fungi, protists, and bacteria. Soils are often found in layers, with each having a different chemical composition and texture.</p>	<p><b>Student Edition:</b> 56  <b>Teacher’s Edition:</b> 56</p>

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Combined Curriculum, Grade 7	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187  <b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289  <b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218  <b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251  <b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>

<b>Combined Curriculum, Grade 7</b>	<b>ACCESS Science</b>
<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b>Program of Studies</b>  <b>S-7-ESS-3</b> Students will examine Earth’s processes (e.g., erosion, deposition) and catastrophes (e.g., asteroid impact).</p>	<p><b>Student Edition:</b> 53, 54, 58-59, 60, 61, 103, 294</p> <p><b>Teacher’s Edition:</b> 53, 54, 58, 59, 60, 61, 294</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-2.2.1</b> The Earth’s processes we see today, including erosion, movement of lithospheric plates, and changes in atmospheric composition, are similar to those that occurred in the past. Earth’s history is also influenced by occasional catastrophes such as the impact of an asteroid or comet.</p>	<p><b>Student Edition:</b> 28-37, 45, 52-61, 68-73</p> <p><b>Teacher’s Edition:</b> 29, 30, 32, 33, 34, 35, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 68</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-2.1.2</b> Landforms are a result of a combination of constructive and destructive forces. Constructive forces include crustal deformation, volcanic eruption, and deposition of sediment, while destructive forces include weathering and erosion.</p>	<p><b>Student Edition:</b> 29-38, 42-49, 54-61</p> <p><b>Teacher’s Edition:</b> 31, 32, 53, 54, 56, 57, 58, 60, 61</p>

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<b>Combined Curriculum, Grade 7</b>	<b>ACCESS Science</b>
<p><b>Academic Expectations</b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b>Academic Expectations</b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b>Academic Expectations</b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>

<b>Combined Curriculum, Grade 7</b>	<b>ACCESS Science</b>
<p><b>Academic Expectations</b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b>Program of Studies</b>  <b>S-7-ESS-4</b> Students will examine evidence (e.g., fossils) for changes in life and environmental conditions.</p>	<p><b>Student Edition:</b> 30-31, 196-199, 203, 204</p> <p><b>Teacher’s Edition:</b> 30, 31, 196, 197, 198, 199, 203, 204</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-2.2.2</b> Fossils provide important evidence of how environmental conditions and life have changed.</p>	<p><b>Student Edition:</b> 30-31, 196-199, 203, 204</p> <p><b>Teacher’s Edition:</b> 196, 197, 198, 199, 203, 204</p>

## Life Science - Reproduction and Heredity

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<b>Combined Curriculum, Grade 7</b>	<b>ACCESS Science</b>
<p><b>Academic Expectations</b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b>Academic Expectations</b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b>Academic Expectations</b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>

Combined Curriculum, Grade 7	ACCESS Science
<p><b>Academic Expectations</b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b>Program of Studies</b>  <b>S-7-LS-1</b> Students will contrast asexual and sexual reproduction.</p>	<p><b>Student Edition:</b> 188, 189, 191</p> <p><b>Teacher’s Edition:</b> 188, 189, 191</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.3.1</b> Reproduction is a characteristic of all living systems and is essential to the continuation of every species. Some organisms reproduce asexually, others reproduce sexually. In species that reproduce sexually, including humans and plants, male and female sex cells carrying genetic information unite to begin the development of a new individual.</p>	<p><b>Student Edition:</b> 184-193</p> <p><b>Teacher’s Edition:</b> 184, 185, 186, 187, 188, 189, 190, 191, 192, 193</p>

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Combined Curriculum, Grade 7	ACCESS Science
<p><b>Academic Expectations</b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b>Academic Expectations</b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b>Academic Expectations</b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>

Combined Curriculum, Grade 7	ACCESS Science
<p><b>Academic Expectations</b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b>Program of Studies</b>  <b>S-7-LS-2</b> Students will investigate traits, heredity, and genes.</p>	<p><b>Student Edition:</b> 185-187, 188, 190, 192-195, 197, 200, 201, 205</p> <p><b>Teacher’s Edition:</b> 185, 186, 187, 188, 190, 192, 193, 194, 195, 197, 200, 201, 205</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.3.2</b> Every organism requires a set of instructions for specifying its traits. This information is contained in genes located in the chromosomes of each cell. Heredity is the passage of these instructions from one generation to another.</p>	<p><b>Student Edition:</b> 184-193</p> <p><b>Teacher’s Edition:</b> 184, 185, 186, 187, 188, 189, 190, 191, 192, 193</p>

## Science 7 8 2

Combined Curriculum, Grade 7	ACCESS Science
<p><b>Academic Expectations</b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b>Academic Expectations</b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b>Academic Expectations</b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>

<b>Combined Curriculum, Grade 7</b>	<b>ACCESS Science</b>
<p><b>Academic Expectations</b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b>Program of Studies</b>  <b>S-7-LS-3</b> Students will investigate unity among organisms.</p>	<p><b>Student Edition:</b> 124-133, 197, 198, 200-201, 202, 207</p> <p><b>Teacher’s Edition:</b> 124, 125, 128, 129, 130, 131, 132, 133, 197, 198, 200, 201, 202</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.4.1</b> Biological change over time accounts for the diversity of species developed through gradual processes over many generations.</p>	<p><b>Student Edition:</b> 201, 203, 205</p> <p><b>Teacher’s Edition:</b> 201, 203, 205</p>

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<b>Combined Curriculum, Grade 7</b>	<b>ACCESS Science</b>
<p><b>Academic Expectations</b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b>Academic Expectations</b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b>Academic Expectations</b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>

<b>Combined Curriculum, Grade 7</b>	<b>ACCESS Science</b>
<p><b>Academic Expectations</b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b>Program of Studies</b>  <b>S-7-LS-4</b> Students will investigate biological adaptation and extinction.</p>	<p><b>Student Edition:</b> 177, 197, 198, 200-201, 202, 207</p> <p><b>Teacher’s Edition:</b> 177, 197, 198, 200, 201, 202, 207</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.4.1</b> Biological change over time accounts for the diversity of species developed through gradual processes over many generations. Biological adaptations include changes in structures, behaviors, or physiology that enhance survival and reproductive success in a particular environment.</p>	<p><b>Student Edition:</b> 201, 203, 205</p> <p><b>Teacher’s Edition:</b> 201, 203, 205</p>

## ACADEMIC EXPECTATIONS

<b>Academic Expectations</b>	<b>ACCESS Science</b>
<p><b>2.1</b> Students understand scientific ways of thinking and working and use those methods to solve real-life problems.</p>	<p><b>Student Edition:</b> 16-27, 31, 38, 39, 43, 50, 51, 55, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 103, 110, 111, 115, 122, 123, 127, 134, 135, 139, 146, 147, 151, 158, 159, 163, 170, 171, 175, 182, 183, 187, 194, 195, 206, 207, 211, 218, 219, 230, 231, 235, 242, 243, 247, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p> <p><b>Teacher’s Edition:</b> 16-27, 31, 35, 38, 39, 41, 43, 47, 50, 51, 55, 60, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 101, 103, 110, 111, 115, 122, 123, 125, 127, 133, 134, 135, 139, 142, 146, 147, 151, 156, 158, 159, 163, 168, 170, 171, 175, 178, 182, 183, 187, 194, 195, 206, 207, 211, 216, 218, 219, 221, 222, 226, 228, 230, 231, 234, 235, 237, 242, 243, 244, 247, 248, 254, 255, 259, 262, 266, 267, 268, 271, 275, 278, 279, 281, 282, 283, 290, 291, 295, 302, 303</p>

Academic Expectations	ACCESS Science
<p><b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>

# PROGRAM OF STUDIES

## Scientific Inquiry

### Scientific Ways of Thinking and Working (2.1)

Content/Process, Grade 7	ACCESS Science
<p><b>Students will</b></p> <p><b>S-7-SI-1</b></p> <ul style="list-style-type: none"> <li>identify and refine questions that can be answered through scientific investigations combined with scientific information.</li> </ul>	<p><b>Student Edition:</b> 16-27, 38-39, 50-51, 62-63, 74-75, 86-87, 98-99, 110-111, 122-123, 134-135, 146-147, 158-159, 170-171, 182-183, 194-195, 206-207, 218-219, 230-231, 242-243, 254-255, 259, 266-267, 271, 278-279, 283, 290-291, 295, 302-303</p> <p><b>Teacher’s Edition:</b> 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 50, 74, 75, 87, 98, 110, 122, 123, 134, 146, 147, 158, 159, 170, 171, 182, 183, 194, 195, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p>
<p><b>S-7-SI-2</b></p> <ul style="list-style-type: none"> <li>use appropriate equipment (e.g., spring scales), tools (e.g., spatulas), techniques (e.g., measuring), technology (e.g., computers), and mathematics in scientific investigations.</li> </ul>	<p><b>Student Edition:</b> 19, 27, 38-39, 50-51, 62-63, 74-75, 86-87, 91, 98-99, 110-111, 122-123, 134-135, 146-147, 158-159, 163, 170-171, 182-183, 194-195, 202, 206-207, 218-219, 230-231, 242-243, 254-255, 266-267, 271, 278-279, 283, 290-291, 295, 296, 302-303</p> <p><b>Teacher’s Edition:</b> 19, 38, 62, 74, 87, 91, 98, 110, 122, 146, 147, 158, 159, 163, 170, 171, 182, 183, 194, 195, 202, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p>
<p><b>S-7-SI-3</b></p> <ul style="list-style-type: none"> <li>use evidence (e.g., measurements), logic, and scientific knowledge to develop scientific explanations.</li> </ul>	<p><b>Student Edition:</b> 26-27, 38-39, 50-51, 62-63, 74-75, 86-87, 98-99, 110-111, 122-123, 134-135, 146-147, 158-159, 170-171, 182-183, 194-195, 206-207, 218-219, 230-231, 242-243, 254-255, 266-267, 271, 278-279, 283, 290-291, 295, 302-303</p> <p><b>Teacher’s Edition:</b> 26, 27, 38, 39, 50, 51, 62, 74, 75, 87, 98, 99, 110, 111, 122, 123, 134, 135, 146, 147, 158, 159, 170, 171, 182, 183, 194, 195, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p>
<p><b>S-7-SI-4</b></p> <ul style="list-style-type: none"> <li>design and conduct different kinds of scientific investigations to answer different kinds of questions.</li> </ul>	<p><b>Student Edition:</b> 26-27, 38-39, 50-51, 62-63, 74-75, 86-87, 98-99, 110-111, 122-123, 134-135, 146-147, 158-159, 170-171, 182-183, 194-195, 206-207, 218-219, 230-231, 242-243, 254-255, 266-267, 271, 278-279, 283, 290-291, 295, 302-303</p> <p><b>Teacher’s Edition:</b> 26, 27, 38, 39, 50, 51, 62, 74, 75, 87, 98, 99, 110, 111, 122, 123, 134, 135, 146, 147, 158, 159, 170, 171, 182, 183, 194, 195, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p>

Content/Process, Grade 7	ACCESS Science
<p><b>S-7-SI-5</b></p> <ul style="list-style-type: none"> <li>communicate (e.g., write) designs, procedures, and results of scientific investigations.</li> </ul>	<p><b>Student Edition:</b> 24, 25, 26-27, 31, 38-39, 43, 47, 50-51, 55, 62-63, 67, 74-75, 86-87, 98-99, 103, 110-111, 122-123, 127, 134-135, 146-147, 151, 158-159, 170-171, 175, 182-183, 194-195, 206-207, 214, 218-219, 229, 230-231, 235, 237, 242-243, 249, 253, 254-255, 259, 266-267, 271, 278-279, 283, 290-291, 295, 297, 301, 302-303</p> <p><b>Teacher's Edition:</b> 24, 25, 26, 27, 31, 38, 39, 43, 47, 50, 51, 55, 62, 63, 67, 74, 75, 86, 87, 98, 99, 103, 110, 111, 122, 123, 134, 135, 146, 147, 151, 158, 159, 170, 171, 175, 182, 183, 194, 195, 206, 207, 214, 218, 219, 229, 230, 231, 235, 237, 242, 243, 253, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 301, 302, 303</p>
<p><b>S-7-SI-6</b></p> <ul style="list-style-type: none"> <li>review and analyze scientific investigations and explanations of other students.</li> </ul>	<p><b>Student Edition:</b> 27, 62-63, 98-99, 123, 159, 194-195, 254, 266, 271, 279, 283</p> <p><b>Teacher's Edition:</b> 27, 62, 98, 194, 254, 266, 283</p>

## Conceptual Understandings

Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.2-2.6)

## Physical Science

### Properties and Change of Properties in Matter

Content/Process, Grade 7	ACCESS Science
<p><b>Students will</b></p> <p><b>S-7-PS-1</b></p> <ul style="list-style-type: none"> <li>investigate characteristic properties (e.g., density) of substances.</li> </ul>	<p><b>Student Edition:</b> 228, 231, 236</p> <p><b>Teacher's Edition:</b> 228, 229, 231, 234, 236</p>
<p><b>S-7-PS-2</b></p> <ul style="list-style-type: none"> <li>examine chemical reactions between substances, recognize that the total mass remains the same, and that substances are categorized by how they react.</li> </ul>	<p><b>Student Edition:</b> 217, 245, 250-255</p> <p><b>Teacher's Edition:</b> 217, 245, 250, 251, 252, 253, 254</p>
<p><b>S-7-PS-3</b></p> <ul style="list-style-type: none"> <li>recognize that elements do not break down during normal laboratory reactions and how elements combine to produce compounds.</li> </ul>	<p><b>Student Edition:</b> 96, 215, 229, 232-243</p> <p><b>Teacher's Edition:</b> 215, 229, 232, 233, 234, 237, 242</p>

## Earth/Space Science

### Structure of the Earth System

Content/Process, Grade 7	ACCESS Science
<p><b>Students will</b></p> <p><b>S-7-ESS-1</b></p> <ul style="list-style-type: none"> <li>model Earth's layers.</li> </ul>	<p><b>Student Edition:</b> 30, 32</p> <p><b>Teacher's Edition:</b> 30, 32</p>
<p><b>S-7-ESS-2</b></p> <ul style="list-style-type: none"> <li>demonstrate the rock cycle (e.g., weathered rocks produce soil, weathered rocks are often recrystallized into new rock) and examine characteristics of soils.</li> </ul>	<p><b>Student Edition:</b> 48-49, 51, 54, 56-57, 61, 63</p> <p><b>Teacher's Edition:</b> 48, 49, 51, 54, 56, 57, 61, 63</p>

### Earth's History

Content/Process, Grade 7	ACCESS Science
<p><b>Students will</b></p> <p><b>S-7-ESS-3</b></p> <ul style="list-style-type: none"> <li>examine Earth's processes (e.g., erosion, deposition) and catastrophes (e.g., asteroid impact).</li> </ul>	<p><b>Student Edition:</b> 53, 54, 58-59, 60, 61, 103, 294</p> <p><b>Teacher's Edition:</b> 53, 54, 58, 59, 60, 61, 294</p>
<p><b>S-7-ESS-4</b></p> <ul style="list-style-type: none"> <li>examine evidence (e.g., fossils) for changes in life and environmental conditions.</li> </ul>	<p><b>Student Edition:</b> 30-31, 196-199, 203, 204</p> <p><b>Teacher's Edition:</b> 30, 31, 196, 197, 198, 199, 203, 204</p>

## Life Science

### Reproduction and Heredity

Content/Process, Grade 7	ACCESS Science
<p><b>Students will</b></p> <p><b>S-7-LS-1</b></p> <ul style="list-style-type: none"> <li>contrast asexual and sexual reproduction.</li> </ul>	<p><b>Student Edition:</b> 188, 189, 191</p> <p><b>Teacher's Edition:</b> 188, 189, 191</p>
<p><b>S-7-LS-2</b></p> <ul style="list-style-type: none"> <li>investigate traits, heredity, and genes.</li> </ul>	<p><b>Student Edition:</b> 185-187, 188, 190, 192-195, 197, 200, 201, 205</p> <p><b>Teacher's Edition:</b> 185, 186, 187, 188, 190, 192, 193, 194, 195, 197, 200, 201, 205</p>

## Diversity and Adaptations of Organisms

Content/Process, Grade 7	ACCESS Science
<p><b>Students will</b></p> <p><b>S-7-LS-3</b></p> <ul style="list-style-type: none"> <li>investigate unity among organisms.</li> </ul>	<p><b>Student Edition:</b> 124-133, 197, 198, 200-201, 202, 207</p> <p><b>Teacher’s Edition:</b> 124, 125, 128, 129, 130, 131, 132, 133, 197, 198, 200, 201, 202</p>
<p><b>S-7-LS-4</b></p> <ul style="list-style-type: none"> <li>investigate biological adaptation and extinction.</li> </ul>	<p><b>Student Edition:</b> 177, 197, 198, 200-201, 202, 207</p> <p><b>Teacher’s Edition:</b> 177, 197, 198, 200, 201, 202, 207</p>

## Applications/Connections

### Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.2-2.6)

Content/Process, Grade 7	ACCESS Science
<p><b>Students will</b></p> <p><b>S-7-AC-1</b></p> <ul style="list-style-type: none"> <li>use science to evaluate the risks and benefits to society for common activities (e.g., riding on airplanes, choice of habitation).</li> </ul>	<p><b>Student Edition:</b> 51, 96, 104</p>
<p><b>S-7-AC-2</b></p> <ul style="list-style-type: none"> <li>describe the effects of science and technology (e.g., television, computers) on society.</li> </ul>	<p><b>Student Edition:</b> 22, 96, 102-103, 210, 229, 234, 240, 252, 258-259, 262, 264, 283, 287, 296-297</p> <p><b>Teacher’s Edition:</b> 22, 96, 252, 258, 259, 262, 264, 287, 296, 297</p>

# CORE CONTENT FOR ASSESSMENT

## Conceptual Understandings: Physical Science

### Academic Expectations

#### 2.2 Patterns of Change, 2.3 Systems, 2.4 Scale and Models, 2.5 Constancy, and 2.6 Change Over Time

### Properties and Changes of Properties in Matter

Core Content Statement, Grades 5-7	ACCESS Science
<b>SC-M-1.1.1</b> A substance has characteristic physical properties (e.g., density, boiling point, solubility) that are independent of the amount of the sample. A mixture of substances often can be separated into the original substances by using one or more of these characteristic physical properties.	<b>Student Edition:</b> 217, 227, 228, 236, 238, 245, 250-255 <b>Teacher's Edition:</b> 217, 227, 228, 236, 238, 245, 250, 251, 252, 253, 254, 255
<b>SC-M-1.1.2</b> The chemical properties of a substance cause it to react in predictable ways with other substances to form compounds with different characteristic properties. In chemical reactions, the total mass is conserved. Substances are often classified into groups if they react in similar ways.	<b>Student Edition:</b> 96, 215, 217, 227, 228, 236, 245, 250-255 <b>Teacher's Edition:</b> 215, 217, 227, 228, 236, 245, 250, 251, 252, 253, 254, 255
<b>SC-M-1.1.3</b> Chemical elements do not break down during normal laboratory reactions such as heating, exposure to electric currents, or reaction with acids. Elements combine in many ways to produce compounds.	<b>Student Edition:</b> 215-217 <b>Teacher's Edition:</b> 215, 216, 217

### Motions and Forces

Core Content Statement, Grades 5-7	ACCESS Science
<b>SC-M-1.2.1</b> The motion of an object can be described by its relative position, direction of motion, and speed. That motion can be measured and represented on a graph.	<b>Student Edition:</b> 270, 275 <b>Teacher's Edition:</b> 270, 275
<b>SC-M-1.2.2</b> An object remains at rest or maintains a constant speed and direction of motion unless an unbalanced force acts on it.	<b>Student Edition:</b> 276 <b>Teacher's Edition:</b> 276

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>SC-M-1.2.3</b> When an unbalanced force acts on an object, the change in speed and/or direction depends on the size and direction of the force.</p>	<p><b>Student Edition:</b> 273 <b>Teacher's Edition:</b> 273</p>

## Transfer of Energy

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>SC-M-1.3.1</b> Energy is a property of many substances and is associated with heat, light, electricity, and sound. Energy is transferred in many ways.</p>	<p><b>Student Edition:</b> 225, 263, 265, 283, 284-285, 280-287, 288-289, 290, 291 <b>Teacher's Edition:</b> 225, 263, 265, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291</p>
<p><b>SC-M-1.3.2</b> Heat energy moves in predictable ways, flowing from warmer objects to cooler ones, until both objects reach the same temperature.</p>	<p><b>Student Edition:</b> 225, 263, 265 <b>Teacher's Edition:</b> 225, 263, 265</p>
<p><b>SC-M-1.3.3</b> Light energy interacts with matter by transmission (including refraction), absorption, or scattering (including reflection).</p>	<p><b>Student Edition:</b> 280-287, 290, 291 <b>Teacher's Edition:</b> 280, 281, 282, 284</p>
<p><b>SC-M-1.3.4</b> The Sun is a major source of energy for changes on Earth's surface. The Sun loses energy by emitting light. A tiny fraction of that light reaches Earth, transferring energy from the Sun to Earth.</p>	<p><b>Student Edition:</b> 68, 80, 108 <b>Teacher's Edition:</b> 68, 80, 108</p>
<p><b>SC-M-1.3.5</b> Electrical circuits provide a means of transferring electrical energy when heat, light, sound, and chemical changes are produced.</p>	<p><b>Student Edition:</b> 257, 258-259, 262 <b>Teacher's Edition:</b> 257, 258, 259, 262</p>

## Conceptual Understandings: Earth and Space Science

### Academic Expectations

**2.2 Patterns of Change, 2.3 Systems, 2.4 Scale and Models, 2.5 Constancy, and 2.6 Change Over Time**

### Structure of the Earth System: Lithosphere, Hydrosphere, Atmosphere

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>SC-M-2.1.1</b> The Earth is layered. The lithosphere is the thin crust of the Earth. Lithospheric plates move slowly in response to movements in the mantle. There is a dense core at the center of the Earth.</p>	<p><b>Student Edition:</b> 29-38, 44-45 <b>Teacher's Edition:</b> 29, 30, 32, 33, 34, 35, 36, 37, 38</p>
<p><b>SC-M-2.1.2</b> Landforms are a result of a combination of constructive and destructive forces. Constructive forces include crustal deformation, volcanic eruption, and deposition of sediment, while destructive forces include weathering and erosion.</p>	<p><b>Student Edition:</b> 29-38, 42-49, 54-61 <b>Teacher's Edition:</b> 31, 32, 53, 54, 56, 57, 58, 60, 61</p>
<p><b>SC-M-2.1.3</b> Materials found in the lithosphere and mantle are changed in a continuous process called the rock cycle.</p>	<p><b>Student Edition:</b> 48-49 <b>Teacher's Edition:</b> 48, 49</p>
<p><b>SC-M-2.1.4</b> Soil consists of weathered rocks and decomposed organic material from dead plants, animals, fungi, protists, and bacteria. Soils are often found in layers, with each having a different chemical composition and texture.</p>	<p><b>Student Edition:</b> 56 <b>Teacher's Edition:</b> 56</p>
<p><b>SC-M-2.1.5</b> Water, which covers the majority of the Earth's surface, circulates through the crust, oceans, and atmosphere in what is known as the water cycle. Water dissolves minerals and gases and may carry them to the oceans.</p>	<p><b>Student Edition:</b> 70-71 <b>Teacher's Edition:</b> 70, 71</p>
<p><b>SC-M-2.1.6</b> Earth is surrounded by a relatively thin blanket of air called the atmosphere. The atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water vapor. The atmosphere has different properties at different elevations.</p>	<p><b>Student Edition:</b> 68, 108 <b>Teacher's Edition:</b> 68, 108</p>

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>SC-M-2.1.7</b> Global patterns of atmospheric movement influence local weather. Oceans have a major effect on climate, because water in the oceans holds a large amount of heat.</p>	<p><b>Student Edition:</b> 68, 70-71 <b>Teacher's Edition:</b> 68, 70, 71</p>

## Earth's History

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>SC-M-2.2.1</b> The Earth's processes we see today, including erosion, movement of lithospheric plates, and changes in atmospheric composition, are similar to those that occurred in the past. Earth's history is also influenced by occasional catastrophes such as the impact of an asteroid or comet.</p>	<p><b>Student Edition:</b> 28-37, 45, 52-61, 68-73 <b>Teacher's Edition:</b> 29, 30, 32, 33, 34, 35, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 68</p>
<p><b>SC-M-2.2.2</b> Fossils provide important evidence of how environmental conditions and life have changed.</p>	<p><b>Student Edition:</b> 30-31, 196-199, 203, 204 <b>Teacher's Edition:</b> 196, 197, 198, 199, 203, 204</p>

## Earth in the Solar System

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>SC-M-2.3.1</b> Earth is the third planet from the Sun in a system that includes the moon, the Sun, eight other planets and their moons, and smaller objects such as asteroids and comets. The Sun, an average star, is the central and largest body in the solar system.</p>	<p><b>Student Edition:</b> 299-301 <b>Teacher's Edition:</b> 299, 300, 301</p>
<p><b>SC-M-2.3.2</b> Most objects in the solar system are in regular and predictable motion. Those motions explain such phenomena as the day, the year, phases of the moon, and eclipses.</p>	<p><b>Student Edition:</b> 78-85 <b>Teacher's Edition:</b> 78, 79, 80, 81, 82, 83, 84, 85</p>
<p><b>SC-M-2.3.3</b> Gravity is the force that keeps the planets in orbit around the Sun and governs the rest of the motion in the solar system. The gravitational pull of the Sun and moon on Earth's oceans is the major cause of tides.</p>	<p><b>Student Edition:</b> 84, 294 <b>Teacher's Edition:</b> 84</p>

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>SC-M-2.3.4</b> The Sun is the major source of energy for Earth. The water cycle, winds, ocean currents, and growth of plants are affected by the Sun's energy. Seasons result from variations in the amount of the Sun's energy hitting Earth's surface.</p>	<p><b>Student Edition:</b> 65-71, 78-83, 164-166</p> <p><b>Teacher's Edition:</b> 65, 66, 68, 69, 70, 71, 78, 79, 80, 81, 82, 83, 164, 165, 166</p>

## Conceptual Understandings: Life Science

### Academic Expectations

**2.2 Patterns of Change, 2.3 Systems, 2.4 Scale and Models, 2.5 Constancy, and 2.6 Change Over Time**

### Structure and Function in Living Systems

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>SC-M-3.1.1</b> Living systems at all levels of organization demonstrate the complementary nature of structure and function. Important levels of organization for structure and function include cells, tissues, organs, organ systems, organisms (e.g., bacteria, protists, fungi, plants, animals), and ecosystems.</p>	<p><b>Student Edition:</b> 114-115, 130, 132-133, 136-145, 148-155</p> <p><b>Teacher's Edition:</b> 114, 115, 130, 132, 133, 136, 137, 140, 141, 142, 143, 148, 149, 152, 153, 154, 155</p>
<p><b>SC-M-3.1.2</b> All organisms are composed of cells, the fundamental unit of life. Most organisms are single cells; other organisms, including plants and animals are multicellular.</p>	<p><b>Student Edition:</b> 129-133, 136-145, 149-157</p> <p><b>Teacher's Edition:</b> 129, 130, 131, 132, 133, 136, 137, 138, 140, 141, 142, 143, 144, 145, 149, 150, 151, 152, 153, 154, 155, 156, 157</p>
<p><b>SC-M-3.1.3</b> Cells carry on the many functions needed to sustain life. They grow and divide, thereby producing more cells. This requires that they take in nutrients, which they use to provide energy for the work that cells do and to make the materials that a cell or an organism needs.</p>	<p><b>Student Edition:</b> 136-145, 160-169</p> <p><b>Teacher's Edition:</b> 136, 137, 138, 140, 141, 142, 143, 144, 145, 161, 162, 163, 164, 165, 166, 167, 168, 169</p>
<p><b>SC-M-3.1.4</b> Specialized cells perform specialized functions in multicellular organisms. Groups of specialized cells cooperate to form tissues. Different tissues are, in turn, grouped together to form larger functional units called organs. Each type of cell, tissue, and organ has a distinct structure and set of functions that serve the organism.</p>	<p><b>Student Edition:</b> 148-157</p> <p><b>Teacher's Edition:</b> 148, 149, 150, 151, 152, 153, 154, 155, 156, 157</p>

## Regulation and Behavior

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>SC-M-3.2.1</b> All organisms must be able to obtain and use resources, grow, reproduce, and maintain stable internal conditions while living in a constantly changing external environment.</p>	<p><b>Student Edition:</b> 148-157, 160-169, 172-181</p> <p><b>Teacher's Edition:</b> 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181</p>
<p><b>SC-M-3.2.2</b> Regulation of an organism's internal environment involves sensing the internal environment and changing physiological activities to keep conditions within the range required to survive. Maintaining a stable internal environment is essential for an organism's survival.</p>	<p><b>Student Edition:</b> 176-177</p> <p><b>Teacher's Edition:</b> 176, 177</p>
<p><b>SC-M-3.2.3</b> Behavior is one kind of response an organism may make to an internal or environmental stimulus. A behavioral response requires coordination and communication at many levels including cells, organ systems, and organisms. Behavioral response is a set of actions determined in part by heredity and in part from experience.</p>	<p><b>Student Edition:</b> 200, 201</p> <p><b>Teacher's Edition:</b> 200, 201</p>

## Reproduction and Heredity

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>SC-M-3.3.1</b> Reproduction is a characteristic of all living systems and is essential to the continuation of every species. Some organisms reproduce asexually, others reproduce sexually. In species that reproduce sexually, including humans and plants, male and female sex cells carrying genetic information unite to begin the development of a new individual.</p>	<p><b>Student Edition:</b> 184-193</p> <p><b>Teacher's Edition:</b> 184, 185, 186, 187, 188, 189, 190, 191, 192, 193</p>
<p><b>SC-M-3.3.2</b> Every organism requires a set of instructions for specifying its traits. This information is contained in genes located in the chromosomes of each cell. Heredity is the passage of these instructions from one generation to another.</p>	<p><b>Student Edition:</b> 184-193</p> <p><b>Teacher's Edition:</b> 184, 185, 186, 187, 188, 189, 190, 191, 192, 193</p>

## Diversity and Adaptations of Organisms

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>SC-M-3.4.1</b> Biological change over time accounts for the diversity of species developed through gradual processes over many generations. Biological adaptations include changes in structures, behaviors, or physiology that enhance survival and reproductive success in a particular environment.</p>	<p><b>Student Edition:</b> 201, 203, 205 <b>Teacher’s Edition:</b> 201, 203, 205</p>
<p><b>SC-M-3.4.2</b> Extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient to allow its survival. Extinction of species is common; most of the species that have lived on Earth no longer exist.</p>	<p><b>Student Edition:</b> 30-31, 196-199, 204 <b>Teacher’s Edition:</b> 196, 197, 198, 199, 204</p>

## Populations and Ecosystems

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>SC-M-3.5.1</b> A population consists of all individuals of a species that occur together at a given place and time. All populations living together and the physical factors with which they interact compose an ecosystem.</p>	<p><b>Student Edition:</b> 114-115 <b>Teacher’s Edition:</b> 114, 115</p>
<p><b>SC-M-3.5.2</b> Populations of organisms can be categorized by the function they serve in an ecosystem. Plants and some microorganisms are producers because they make their own food. All animals, including humans, are consumers, and obtain their food by eating other organisms. Decomposers, primarily bacteria and fungi, are consumers that use waste materials and dead organisms for food. Food webs identify the relationships among producers, consumers, and decomposers in an ecosystem.</p>	<p><b>Student Edition:</b> 114, 115, 116-121, 122, 123 <b>Teacher’s Edition:</b> 114, 115, 116, 117, 118, 119, 120, 121, 122, 123</p>
<p><b>SC-M-3.5.3</b> For most ecosystems, the major source of energy is sunlight. Energy entering ecosystems as sunlight is transferred by producers into chemical energy through photosynthesis. That energy then passes from organism to organism in food webs.</p>	<p><b>Student Edition:</b> 164-166 <b>Teacher’s Edition:</b> 164, 165, 166</p>

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>SC-M-3.5.4</b> The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). Given adequate biotic and abiotic resources and no diseases or predators, populations (including humans) increase at rapid rates. Lack of resources and other factors, such as predation and climate, limit the growth of populations in specific niches in the ecosystem.</p>	<p><b>Student Edition:</b> 104-105, 117 <b>Teacher’s Edition:</b> 104-105, 115, 117</p>

## Scientific Inquiry

**Inquiry skills will be assessed only in the context of physical, Earth/space, and life sciences content.**

## Academic Expectation

### 2.1 Scientific Ways of Thinking and Working

<b>Core Content Statement, Grades 5-7</b>	<b>ACCESS Science</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>refine and refocus questions that can be answered through scientific investigation combined with scientific information.</li> </ul>	<p><b>Student Edition:</b> 17-25, 175, 235, 243, 271, 279 <b>Teacher’s Edition:</b> 17-25, 175, 235, 243, 271, 279</p>
<ul style="list-style-type: none"> <li>use appropriate equipment, tools, techniques, technology, and mathematics to gather, analyze, and interpret scientific data.</li> </ul>	<p><b>Student Edition:</b> 16-27, 31, 38, 39, 43, 50, 51, 55, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 103, 110, 111, 115, 122, 123, 127, 134, 135, 139, 146, 147, 151, 158, 159, 163, 170, 171, 175, 182, 183, 187, 194, 195, 206, 207, 211, 218, 219, 230, 231, 235, 242, 243, 247, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p> <p><b>Teacher’s Edition:</b> 16-27, 31, 35, 38, 39, 41, 43, 47, 50, 51, 55, 60, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 101, 103, 110, 111, 115, 122, 123, 125, 127, 133, 134, 135, 139, 142, 146, 147, 151, 156, 158, 159, 163, 168, 170, 171, 175, 178, 182, 183, 187, 194, 195, 206, 207, 211, 216, 218, 219, 221, 222, 226, 228, 230, 231, 234, 235, 237, 242, 243, 244, 247, 248, 254, 255, 259, 262, 266, 267, 268, 271, 275, 278, 279, 281, 282, 283, 290, 291, 295, 302, 303</p>
<ul style="list-style-type: none"> <li>use evidence (e.g., computer models), logic, and scientific knowledge to develop scientific explanations.</li> </ul>	<p><b>Student Book:</b> 20-21, 24, 25, 26, 27, 31, 34-35, 38-39, 50, 51, 74-75, 103, 110-111, 127, 135, 199, 206, 247, 255, 278, 303</p> <p><b>Teacher’s Edition:</b> 20, 21, 24, 25, 26, 27, 31, 34, 35, 38, 39, 50, 51, 74, 75, 103, 110, 111, 127, 135, 199, 206, 247, 255, 278, 303</p>

Core Content Statement, Grades 5-7	ACCESS Science
<ul style="list-style-type: none"> <li>design and conduct scientific investigations.</li> </ul>	<p><b>Student Book:</b> 19, 22, 23, 24, 25, 26, 27, 31, 38, 39, 50, 87, 99, 110, 123, 134, 175, 182, 206, 219, 231, 242, 271, 279, 295</p> <p><b>Teacher’s Edition:</b> 19, 22, 23, 24, 25, 26, 27, 31, 38, 39, 50, 87, 99, 110, 123, 134, 175, 182, 206, 219, 231, 242, 271, 279, 295</p>
<ul style="list-style-type: none"> <li>communicate (e.g., write, graph) designs, procedures, observations, and results of scientific investigations.</li> </ul>	<p><b>Student Edition:</b> 16-27, 31, 38, 39, 43, 50, 51, 55, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 103, 110, 111, 115, 122, 123, 127, 134, 135, 139, 146, 147, 151, 158, 159, 163, 170, 171, 175, 182, 183, 187, 194, 195, 206, 207, 211, 218, 219, 230, 231, 235, 242, 243, 247, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p> <p><b>Teacher’s Edition:</b> 16-27, 31, 35, 38, 39, 41, 43, 47, 50, 51, 55, 60, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 101, 103, 110, 111, 115, 122, 123, 125, 127, 133, 134, 135, 139, 142, 146, 147, 151, 156, 158, 159, 163, 168, 170, 171, 175, 178, 182, 183, 187, 194, 195, 206, 207, 211, 216, 218, 219, 221, 222, 226, 228, 230, 231, 234, 235, 237, 242, 243, 244, 247, 248, 254, 255, 259, 262, 266, 267, 268, 271, 275, 278, 279, 281, 282, 283, 290, 291, 295, 302, 303</p>
<ul style="list-style-type: none"> <li>review and analyze scientific investigations and explanations of other students.</li> </ul>	<p><b>Student Book:</b> 24, 25, 31, 39, 67, 74, 99, 103, 111, 195, 247, 255, 295</p> <p><b>Teacher’s Edition:</b> 24, 25, 31, 39, 67, 74, 99, 103, 111, 195, 247, 255, 295</p>

## Applications/Connections

Applications/Connections skills will be assessed only in the context of physical, Earth/space, and life sciences content.

## Academic Expectations

**2.2 Patterns of Change, 2.3 Systems, 2.4 Scale and Models, 2.5 Constancy, and 2.6 Change Over Time**

Core Content Statement, Grades 5-7	ACCESS Science
<p><b>Students will</b></p> <p><b>Science and Technology</b></p> <ul style="list-style-type: none"> <li>describe how science helps drive technology and technology helps drive science. Because perfectly designed solutions do not exist, technological solutions have intended benefits and unintended consequences.</li> </ul>	<p><b>Student Edition:</b> 22, 36, 48, 57, 68, 83, 94, 106, 117, 132, 144, 156, 168, 180, 192, 202, 214, 229, 240, 252, 264, 277, 287, 297</p> <p><b>Teacher’s Edition:</b> 22, 36, 48, 57, 68, 83, 94, 106, 117, 132, 144, 156, 168, 180, 192, 202, 214, 229, 240, 252, 264, 277, 287, 297</p>
<p><b>Science in Personal and Social Perspectives</b></p> <ul style="list-style-type: none"> <li>describe the individual’s roles and responsibilities in the following areas: changes in populations, resources and environments including ecological crises and environmental issues, natural hazards, science and technology in society, and personal and societal issues about risks and benefits.</li> </ul>	<p><b>Student Edition:</b> 97, 99, 100-111, 117</p> <p><b>Teacher’s Edition:</b> 97, 99, 100-111, 117</p>
<p><b>History and Nature of Science</b></p> <ul style="list-style-type: none"> <li>demonstrate the role science plays in everyday life: past, present, and future. Science is a human endeavor. Men and women of various social and ethnic backgrounds engage in activities of science (to include careers in science). Scientists formulate and test their explanations of nature using observations, experiments, and theoretical and mathematical models. It is part of scientific inquiry to evaluate the results of scientific investigations, experiments, observations, theoretical models, and the explanations proposed by other scientists.</li> </ul>	<p><b>Student Book:</b> 17-27, 31, 83, 132, 144, 156, 240, 269, 276, 287, 297</p> <p><b>Teacher’s Edition:</b> 17-27, 31, 35, 83, 132, 144, 156, 240, 269, 276, 287, 297</p>



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correlated to

## Kentucky Combined Curriculum for Grade 8

(Academic Expectations, Program of Studies, and Core Content for Assessment)

### Physical Science

### Science 8 84

Combined Curriculum, Grade 8	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher's Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher's Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher's Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher's Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b><u>Academic Expectations</u></b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher's Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>

Combined Curriculum, Grade 8	ACCESS Science
<p><b>Program of Studies</b>  <b>S-8-PS-1</b> Students will analyze properties (e.g., boiling point, solubility) and changes of properties in matter</p>	<p><b>Student Edition:</b> 222-223, 227, 228-229, 234, 236, 245, 250-255</p> <p><b>Teacher’s Edition:</b> 222, 223, 227, 228, 229, 234, 236, 245, 250, 251, 252, 254, 255</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-1.1.1</b> A substance has characteristic physical properties (e.g., density, boiling point, solubility) that are independent of the amount of the sample. A mixture of substances often can be separated into the original substances by using one or more of these characteristic physical properties.</p>	<p><b>Student Edition:</b> 217, 227, 228, 236, 238, 245, 250-255</p> <p><b>Teacher’s Edition:</b> 217, 227, 228, 236, 238, 245, 250, 251, 252, 253, 254, 255</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-1.1.2</b> The chemical properties of a substance cause it to react in predictable ways with other substances to form compounds with different characteristic properties. In chemical reactions, the total mass is conserved. Substances are often classified into groups if they react in similar ways.</p>	<p><b>Student Edition:</b> 96, 215, 217, 227, 228, 236, 245, 250-255</p> <p><b>Teacher’s Edition:</b> 215, 217, 227, 228, 236, 245, 250, 251, 252, 253, 254, 255</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-1.1.3</b> Chemical elements do not break down during normal laboratory reactions such as heating, exposure to electric currents, or reaction with acids. Elements combine in many ways to produce compounds.</p>	<p><b>Student Edition:</b> 215-217</p> <p><b>Teacher’s Edition:</b> 215, 216, 217</p>

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Combined Curriculum, Grade 8	ACCESS Science
<p><b>Academic Expectations</b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b>Academic Expectations</b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>

Combined Curriculum, Grade 8	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b><u>Academic Expectations</u></b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b><u>Program of Studies</u></b>  <b>S-8-PS-2</b> Students will measure and represent (e.g., graph) forces on objects and motions (e.g., constant speed, changing speed) of objects.</p>	<p><b>Student Edition:</b> 270, 275</p> <p><b>Teacher’s Edition:</b> 270, 275</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-1.2.1</b> The motion of an object can be described by its relative position, direction of motion, and speed. That motion can be measured and represented on a graph.</p>	<p><b>Student Edition:</b> 270, 275</p> <p><b>Teacher’s Edition:</b> 270, 275</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-1.2.2</b> An object remains at rest or maintains a constant speed and direction of motion unless an unbalanced force acts on it.</p>	<p><b>Student Edition:</b> 276</p> <p><b>Teacher’s Edition:</b> 276</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-1.2.3</b> When an unbalanced force acts on an object, the change in speed and/or direction depends on the size and direction of the force.</p>	<p><b>Student Edition:</b> 273</p> <p><b>Teacher’s Edition:</b> 273</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-1.4.1</b> Objects change their motion only when a net force is applied. Laws of motion are used to describe the effects of forces on the motion of objects.</p>	<p><b>Student Edition:</b> 272-279</p> <p><b>Teacher’s Edition:</b> 272, 273, 274, 275, 276, 277, 278, 279</p>

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<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b><u>Academic Expectations</u></b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b><u>Program of Studies</u></b>  <b>S-8-PS-3</b> Students will investigate transfer of energy (e.g., heat, light, electricity, mechanical motion, sound).</p>	<p><b>Student Edition:</b> 225, 263, 265, 280-287, 288-289, 290, 291</p> <p><b>Teacher’s Edition:</b> 225, 263, 265, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-1.3.1</b> Energy is a property of many substances and is associated with heat, light, electricity, and sound. Energy is transferred in many ways.</p>	<p><b>Student Edition:</b> 225, 263, 265, 283, 284-285, 280-287, 288-289, 290, 291</p> <p><b>Teacher’s Edition:</b> 225, 263, 265, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291</p>

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<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-1.3.2</b> Heat energy moves in predictable ways, flowing from warmer objects to cooler ones, until both objects reach the same temperature.</p>	<p><b>Student Edition:</b> 225, 263, 265  <b>Teacher’s Edition:</b> 225, 263, 265</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-1.3.3</b> Light energy interacts with matter by transmission (including refraction), absorption, or scattering (including reflection).</p>	<p><b>Student Edition:</b> 280-287, 290, 291  <b>Teacher’s Edition:</b> 280, 281, 282, 284</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-1.3.4</b> The Sun is a major source of energy for changes on Earth’s surface. The Sun loses energy by emitting light. A tiny fraction of that light reaches Earth, transferring energy from the Sun to Earth.</p>	<p><b>Student Edition:</b> 68, 80, 108  <b>Teacher’s Edition:</b> 68, 80, 108</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-1.3.5</b> Electrical circuits provide a means of transferring electrical energy when heat, light, sound, and chemical changes are produced.</p>	<p><b>Student Edition:</b> 257, 258-259, 262  <b>Teacher’s Edition:</b> 257, 258, 259, 262</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-1.5.1</b> The total energy of the universe is constant. Energy can be transferred in many ways, but it can neither be created nor destroyed.</p>	<p><b>Student Edition:</b> 253  <b>Teacher’s Edition:</b> 253</p>

## Earth Space Science

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<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187  <b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289  <b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>

Combined Curriculum, Grade 8	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b><u>Academic Expectations</u></b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b><u>Program of Studies</u></b>  <b>S-8-ESS-1</b> Students will investigate the structure of the Earth system (e.g., lithosphere, rock cycle, water cycle, weather, climate).</p>	<p><b>Student Edition:</b> 29-38, 44-45, 48-49</p> <p><b>Teacher’s Edition:</b> 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 44, 45, 48, 49</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-2.1.1</b> The Earth is layered. The lithosphere is the thin crust of the Earth. Lithospheric plates move slowly in response to movements in the mantle. There is a dense core at the center of the Earth.</p>	<p><b>Student Edition:</b> 29-38, 44-45</p> <p><b>Teacher’s Edition:</b> 29, 30, 32, 33, 34, 35, 36, 37, 38</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-2.1.2</b> Landforms are a result of a combination of constructive and destructive forces. Constructive forces include crustal deformation, volcanic eruption, and deposition of sediment, while destructive forces include weathering and erosion.</p>	<p><b>Student Edition:</b> 29-38, 42-49, 54-61</p> <p><b>Teacher’s Edition:</b> 31, 32, 53, 54, 56, 57, 58, 60, 61</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-2.1.3</b> Materials found in the lithosphere and mantle are changed in a continuous process called the rock cycle.</p>	<p><b>Student Edition:</b> 48-49</p> <p><b>Teacher’s Edition:</b> 48, 49</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-2.1.4</b> Soil consists of weathered rocks and decomposed organic material from dead plants, animals, fungi, protists, and bacteria. Soils are often found in layers, with each having a different chemical composition and texture.</p>	<p><b>Student Edition:</b> 56</p> <p><b>Teacher’s Edition:</b> 56</p>

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<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-2.1.5</b> Water, which covers the majority of the Earth's surface, circulates through the crust, oceans, and atmosphere in what is known as the water cycle. Water dissolves minerals and gases and may carry them to the oceans.</p>	<p><b>Student Edition:</b> 70-71  <b>Teacher's Edition:</b> 70, 71</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-2.1.6</b> Earth is surrounded by a relatively thin blanket of air called the atmosphere. The atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water vapor. The atmosphere has different properties at different elevations.</p>	<p><b>Student Edition:</b> 68, 108  <b>Teacher's Edition:</b> 68, 108</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-2.1.7</b> Global patterns of atmospheric movement influence local weather. Oceans have a major effect on climate, because water in the oceans holds a large amount of heat.</p>	<p><b>Student Edition:</b> 68, 70-71  <b>Teacher's Edition:</b> 68, 70, 71</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-2.1.1</b> Earth systems have sources of energy that are internal and external to the Earth. The Sun is the major external source of energy. Two primary sources of internal energy are the decay of radioactive isotopes and the gravitational energy from Earth's original formation.</p>	<p><b>Student Edition:</b> 68  <b>Teacher's Edition:</b> 68</p>

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<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187  <b>Teacher's Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289  <b>Teacher's Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218  <b>Teacher's Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>

Combined Curriculum, Grade 8	ACCESS Science
<p><b>Academic Expectations</b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b>Program of Studies</b>  <b>S-8-ESS-2</b> Students will analyze Earth's history (e.g., Earth processes, catastrophes, evidence for changes).</p>	<p><b>Student Edition:</b> 29-38, 42-49, 54-61</p> <p><b>Teacher’s Edition:</b> 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 42, 44, 45, 46, 47, 48, 49, 54, 55, 56, 57, 58, 59, 60, 61</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-2.2.1</b> The Earth's processes we see today, including erosion, movement of lithospheric plates, and changes in atmospheric composition, are similar to those that occurred in the past. Earth's history is also influenced by occasional catastrophes such as the impact of an asteroid or comet.</p>	<p><b>Student Edition:</b> 28-37, 45, 52-61, 68-73</p> <p><b>Teacher’s Edition:</b> 29, 30, 32, 33, 34, 35, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 68</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-2.2.2</b> Fossils provide important evidence of how environmental conditions and life have changed.</p>	<p><b>Student Edition:</b> 30-31, 196-199, 203, 204</p> <p><b>Teacher’s Edition:</b> 196, 197, 198, 199, 203, 204</p>
<p><b>Core Content for Assessment</b>  <b>SC-H-2.3.2</b> Techniques used to estimate geological time include using radioactive dating, observing rock sequences, and comparing fossils to correlate the rock sequences at various locations.</p>	<p><b>Student Edition:</b> 204-205</p> <p><b>Teacher’s Edition:</b> 204-205</p>
<p><b>Core Content for Assessment</b>  <b>SC-H-2.3.3</b> Interactions among the solid Earth, the oceans, the atmosphere, and living things have resulted in the ongoing development of a changing Earth system. Earthquakes and volcanic eruptions can be observed on a human time scale, but many processes, such as mountain building and plate movements, take place over hundreds of millions of years.</p>	<p><b>Student Edition:</b> 36-37, 53-63</p> <p><b>Teacher’s Edition:</b> 36, 37, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62</p>

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<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b><u>Academic Expectations</u></b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b><u>Program of Studies</u></b>  <b>S-8-ESS-3</b> Students will investigate the Earth as a component of the solar system (e.g., Sun, planets, motion).</p>	<p><b>Student Edition:</b> 294, 299-303</p> <p><b>Teacher’s Edition:</b> 294, 299, 300, 301, 302, 303</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-2.3.1</b> Earth is the third planet from the Sun in a system that includes the moon, the Sun, eight other planets and their moons, and smaller objects such as asteroids and comets. The Sun, an average star, is the central and largest body in the solar system.</p>	<p><b>Student Edition:</b> 299-301</p> <p><b>Teacher’s Edition:</b> 299, 300, 301</p>

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<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-2.3.2</b> Most objects in the solar system are in regular and predictable motion. Those motions explain such phenomena as the day, the year, phases of the moon, and eclipses.</p>	<p><b>Student Edition:</b> 78-85  <b>Teacher's Edition:</b> 78, 79, 80, 81, 82, 83, 84, 85</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-2.3.4</b> The Sun is the major source of energy for Earth. The water cycle, winds, ocean currents, and growth of plants are affected by the Sun's energy. Seasons result from variations in the amount of the Sun's energy hitting Earth's surface.</p>	<p><b>Student Edition:</b> 65-71, 78-83, 164-166  <b>Teacher's Edition:</b> 65, 66, 68, 69, 70, 71, 78, 79, 80, 81, 82, 83, 164, 165, 166</p>

## Life Science

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<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187  <b>Teacher's Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289  <b>Teacher's Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218  <b>Teacher's Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251  <b>Teacher's Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>

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<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207  <b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b>Program of Studies</b>  <b>S-8-LS-1</b> Students will investigate structure (e.g., cells, tissues, organs) and function (e.g., growth, muscular function, digestion) in living systems.</p>	<p><b>Student Edition:</b> 114-115, 129-133, 136-145, 148-157, 160-169  <b>Teacher’s Edition:</b> 114, 115, 129, 130, 131, 132, 133, 136, 137, 138, 140, 141, 142, 143, 144, 145, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.1.1</b> Living systems at all levels of organization demonstrate the complementary nature of structure and function. Important levels of organization for structure and function include cells, tissues, organs, organ systems, organisms (e.g., bacteria, protists, fungi, plants, animals), and ecosystems.</p>	<p><b>Student Edition:</b> 114-115, 130, 132-133, 136-145, 148-155  <b>Teacher’s Edition:</b> 114, 115, 130, 132, 133, 136, 137, 140, 141, 142, 143, 148, 149, 152, 153, 154, 155</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.1.2</b> All organisms are composed of cells, the fundamental unit of life. Most organisms are single cells; other organisms, including plants and animals are multicellular.</p>	<p><b>Student Edition:</b> 129-133, 136-145, 149-157  <b>Teacher’s Edition:</b> 129, 130, 131, 132, 133, 136, 137, 138, 140, 141, 142, 143, 144, 145, 149, 150, 151, 152, 153, 154, 155, 156, 157</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.1.3</b> Cells carry on the many functions needed to sustain life. They grow and divide, thereby producing more cells. This requires that they take in nutrients, which they use to provide energy for the work that cells do and to make the materials that a cell or an organism needs.</p>	<p><b>Student Edition:</b> 136-145, 160-169  <b>Teacher’s Edition:</b> 136, 137, 138, 140, 141, 142, 143, 144, 145, 161, 162, 163, 164, 165, 166, 167, 168, 169</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.1.4</b> Specialized cells perform specialized functions in multicellular organisms. Groups of specialized cells cooperate to form tissues. Different tissues are, in turn, grouped together to form larger functional units called organs. Each type of cell, tissue, and organ has a distinct structure and set of functions that serve the organism.</p>	<p><b>Student Edition:</b> 148-157  <b>Teacher’s Edition:</b> 148, 149, 150, 151, 152, 153, 154, 155, 156, 157</p>
<p><b>Core Content for Assessment</b>  <b>SC-H-3.1.1</b> Cells have particular structures that underlie their function. Every cell is surrounded by a membrane that separates it from the outside world. Inside the cell is a concentrated mixture of thousands of different molecules that form a variety of specialized structures. These structures carry out specific cell functions.</p>	<p><b>Student Edition:</b> 137, 140-143, 153  <b>Teacher’s Edition:</b> 140, 141, 142, 143</p>

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<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-3.1.2</b> Most cell functions involve chemical reactions. Food molecules taken into cells react to provide the chemical constituents needed to synthesize other molecules. Both breakdown and synthesis are made possible by a large set of protein catalysts, called enzymes. The breakdown of some of the food molecules enables the cell to store energy in specific chemicals that are used to carry out the many functions of the cell.</p>	<p><b>Student Edition:</b> 160-171  <b>Teacher’s Edition:</b> 160-171</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-3.1.3</b> Cells store and use information to guide their functions. The genetic information stored in DNA directs the synthesis of the thousands of proteins that each cell requires.</p>	<p><b>Student Edition:</b> 190  <b>Teacher’s Edition:</b> 190</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-3.1.4</b> Cell functions are regulated. Regulation occurs both through changes in the activity of the functions performed by proteins and through selective expression of individual genes. This regulation allows cells to respond to their internal and external environments and to control and coordinate cell growth and division.</p>	<p><b>Student Edition:</b> 144-145  <b>Teacher’s Edition:</b> 144, 145</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-3.1.5</b> Plant cells contain chloroplasts, the site of photosynthesis. Plants and many microorganisms (e.g., <i>Euglena</i>) use solar energy to combine molecules of carbon dioxide and water into complex, energy-rich organic compounds and release oxygen to the environment. This process of photosynthesis provides a vital link between the Sun and energy needs of living systems.</p>	<p><b>Student Edition:</b> 141  <b>Teacher’s Edition:</b> 141</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-3.1.6</b> In the development of multicellular organisms, cells multiply and differentiate to form many specialized cells, tissues, and organs. This differentiation is regulated through the expression of different genes.</p>	<p><b>Student Edition:</b> 149-157  <b>Teacher’s Edition:</b> 137, 149, 150, 151, 152, 153, 154, 155, 157</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-3.2.1</b> Multicellular animals have nervous systems that generate behavior. Nerve cells communicate with each other by secreting specific molecules. Specialized cells in sense organs detect light, sound, and specific chemicals enabling animals to monitor what is going on in the world around them.</p>	<p><b>Student Edition:</b> 155, 178-179  <b>Teacher’s Edition:</b> 179</p>

Combined Curriculum, Grade 8	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b><u>Academic Expectations</u></b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b><u>Program of Studies</u></b>  <b>S-8-LS-2</b> Students will analyze reproduction (e.g., asexual, sexual) and heredity (e.g., genetic information, inherited traits).</p>	<p><b>Student Edition:</b> 188, 189, 191</p> <p><b>Teacher’s Edition:</b> 188, 189, 191</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-3.3.1</b>  Reproduction is a characteristic of all living systems and is essential to the continuation of every species. Some organisms reproduce asexually, others reproduce sexually. In species that reproduce sexually, including humans and plants, male and female sex cells carrying genetic information unite to begin the development of a new individual.</p>	<p><b>Student Edition:</b> 184-193</p> <p><b>Teacher’s Edition:</b> 184, 185, 186, 187, 188, 189, 190, 191, 192, 193</p>

Combined Curriculum, Grade 8	ACCESS Science
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-3.3.1</b> In all organisms and viruses, the instructions for specifying the characteristics are carried in nucleic acids. The chemical and structural properties of nucleic acids determine how the genetic information that underlies heredity is both encoded in genes and replicated.</p>	<p><b>Student Edition:</b> 190  <b>Teacher’s Edition:</b> 190</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-3.3.2</b>  Every organism requires a set of instructions for specifying its traits. This information is contained in genes located in the chromosomes of each cell. Heredity is the passage of these instructions from one generation to another.</p>	<p><b>Student Edition:</b> 184-193  <b>Teacher’s Edition:</b> 184, 185, 186, 187, 188, 189, 190, 191, 192, 193</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-3.3.2</b> Multicellular organisms, including humans, form from cells that contain two copies of each chromosome. This explains many features of heredity. Transmission of genetic information through sexual reproduction to offspring occurs when male and female gametes that contain only one representative from each chromosome pair unite.</p>	<p><b>Student Edition:</b> 188-194  <b>Teacher’s Edition:</b> 188, 189, 190, 191, 192, 193, 194</p>

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Combined Curriculum, Grade 8	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187  <b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289  <b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218  <b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>

Combined Curriculum, Grade 8	ACCESS Science
<p><b>Academic Expectations</b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b>Program of Studies</b>  <b>S-8-LS-3</b> Students will analyze regulation (changing physiological activities) and behavior (a set of responses).</p>	<p><b>Student Edition:</b> 200, 201</p> <p><b>Teacher’s Edition:</b> 200, 201</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.2.1</b>  All organisms must be able to obtain and use resources, grow, reproduce, and maintain stable internal conditions while living in a constantly changing external environment.</p>	<p><b>Student Edition:</b> 148-157, 160-169, 172-181</p> <p><b>Teacher’s Edition:</b> 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181</p>
<p><b>Core Content for Assessment</b>  <b>SC-H-3.2.2</b> Behavioral responses to internal changes and external stimuli can be innate or learned. Responses to external stimuli can result from interactions with the organism’s own species and/or other species, as well as environmental changes.</p>	<p><b>Student Edition:</b> 176-177, 178-179</p> <p><b>Teacher’s Edition:</b> 176, 177, 178, 179</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.2.3</b>  Behavior is one kind of response an organism may make to an internal or environmental stimulus. A behavioral response requires coordination and communication at many levels including cells, organ systems, and organisms. Behavioral response is a set of actions determined in part by heredity and in part from experience.</p>	<p><b>Student Edition:</b> 200, 201</p> <p><b>Teacher’s Edition:</b> 200, 201</p>
<p><b>Core Content for Assessment</b>  <b>SC-H-3.2.1</b> Multicellular animals have nervous systems that generate behavior. Nerve cells communicate with each other by secreting specific molecules. Specialized cells in sense organs detect light, sound, and specific chemicals enabling animals to monitor what is going on in the world around them.</p>	<p><b>Student Edition:</b> 155, 178-179</p> <p><b>Teacher’s Edition:</b> 179</p>

Combined Curriculum, Grade 8	ACCESS Science
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-3.2.2</b> Behavioral responses to internal changes and external stimuli can be innate or learned. Responses to external stimuli can result from interactions with the organism’s own species and/or other species, as well as environmental changes.</p>	<p><b>Student Edition:</b> 176-177, 178-179  <b>Teacher’s Edition:</b> 176, 177, 178, 179</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-3.2.3</b> The broad patterns of behavior exhibited by organisms have changed over time through natural selection to ensure reproductive success. Organisms often live in unpredictable environments, so their behavioral responses must be flexible enough to deal with uncertainty and change. Behaviors often have an adaptive logic.</p>	<p><b>Student Edition:</b> 197-203  <b>Teacher’s Edition:</b> 197, 198, 199, 200, 201, 202, 203</p>

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Combined Curriculum, Grade 8	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187  <b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289  <b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218  <b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251  <b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>

Combined Curriculum, Grade 8	ACCESS Science
<p><b>Academic Expectations</b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207  <b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b>Program of Studies</b>  <b>S-8-LS-4</b> Students will investigate and analyze populations and ecosystems.</p>	<p><b>Student Edition:</b> 120-121  <b>Teacher’s Edition:</b> 120, 121</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.5.1</b> A population consists of all individuals of a species that occur together at a given place and time. All populations living together and the physical factors with which they interact compose an ecosystem.</p>	<p><b>Student Edition:</b> 114-115  <b>Teacher’s Edition:</b> 114, 115</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.5.2</b> Populations of organisms can be categorized by the function they serve in an ecosystem. Plants and some microorganisms are producers because they make their own food. All animals, including humans, are consumers, and obtain their food by eating other organisms. Decomposers, primarily bacteria and fungi, are consumers that use waste materials and dead organisms for food. Food webs identify the relationships among producers, consumers, and decomposers in an ecosystem.</p>	<p><b>Student Edition:</b> 114, 115, 116-121, 122, 123  <b>Teacher’s Edition:</b> 114, 115, 116, 117, 118, 119, 120, 121, 122, 123</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.5.3</b> For most ecosystems, the major source of energy is sunlight. Energy entering ecosystems as sunlight is transferred by producers into chemical energy through photosynthesis. That energy then passes from organism to organism in food webs.</p>	<p><b>Student Edition:</b> 164-166  <b>Teacher’s Edition:</b> 164, 165, 166</p>
<p><b>Core Content for Assessment</b>  <b>SC-M-3.5.4</b> The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). Given adequate biotic and abiotic resources and no diseases or predators, populations (including humans) increase at rapid rates. Lack of resources and other factors, such as predation and climate, limit the growth of populations in specific niches in the ecosystem.</p>	<p><b>Student Edition:</b> 104-105, 117  <b>Teacher’s Edition:</b> 104-105, 115, 117</p>
<p><b>Core Content for Assessment</b>  <b>SC-H-3.5.1</b> Atoms (e.g., carbon, nitrogen) and molecules (e.g., water) cycle among the living and nonliving components of the biosphere.</p>	<p><b>Student Edition:</b> 117, 118-119  <b>Teacher’s Edition:</b> 118, 119</p>

Combined Curriculum, Grade 8	ACCESS Science
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-3.5.2</b> Energy flows through ecosystems in one direction from photosynthetic organisms to herbivores to carnivores and decomposers.</p>	<p><b>Student Edition:</b> 114, 115, 116-117  <b>Teacher’s Edition:</b> 114, 115, 116, 117</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-3.5.3</b> Organisms both cooperate and compete in ecosystems. Often changes in one component of an ecosystem will have effects on the entire system that are difficult to predict. The interrelationships and interdependencies of these organisms may generate ecosystems that are stable for hundreds or thousands of years.</p>	<p><b>Student Edition:</b> 113-122  <b>Teacher’s Edition:</b> 113, 114, 115, 116, 117, 118, 119, 120, 121, 122</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-3.5.4</b> Living organisms have the capacity to produce populations of infinite size. However, behaviors, environments, and resources influence the size of populations. Models (e.g., mathematical, physical, conceptual) can be used to make predictions about changes in the size or rate of growth of a population.</p>	<p><b>Student Edition:</b> 117, 120-121, 196-207  <b>Teacher’s Edition:</b> 117, 120-121, 196-207</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-H-3.5.5</b> Human beings live within the world’s ecosystems. Human activities can deliberately or inadvertently alter the dynamics in ecosystems. These activities can threaten current and future global stability and, if not addressed, ecosystems can be irreversibly affected.</p>	<p><b>Student Edition:</b> 106-110  <b>Teacher’s Edition:</b> 106, 107, 108, 109, 110</p>

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Combined Curriculum, Grade 8	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187  <b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b><u>Academic Expectations</u></b>  <b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289  <b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>

Combined Curriculum, Grade 8	ACCESS Science
<p><b><u>Academic Expectations</u></b>  <b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b><u>Academic Expectations</u></b>  <b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b><u>Academic Expectations</u></b>  <b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p><b><u>Program of Studies</u></b>  <b>S-8-LS-5</b> Students will analyze diversity and adaptations (e.g., changes in structure, behaviors, or physiology).</p>	<p><b>Student Edition:</b> 201, 203, 205</p> <p><b>Teacher’s Edition:</b> 201, 203, 205</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-3.4.1</b> Biological change over time accounts for the diversity of species developed through gradual processes over many generations. Biological adaptations include changes in structures, behaviors, or physiology that enhance survival and reproductive success in a particular environment.</p>	<p><b>Student Edition:</b> 201, 203, 205</p> <p><b>Teacher’s Edition:</b> 201, 203, 205</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-3.4.2</b> Extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient to allow its survival. Extinction of species is common; most of the species that have lived on Earth no longer exist.</p>	<p><b>Student Edition:</b> 30-31, 196-199, 204</p> <p><b>Teacher’s Edition:</b> 196, 197, 198, 199, 204</p>
<p><b><u>Core Content for Assessment</u></b>  <b>SC-M-3.5.4</b> The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). Given adequate biotic and abiotic resources and no diseases or predators, populations (including humans) increase at rapid rates. Lack of resources and other factors, such as predation and climate, limit the growth of populations in specific niches in the ecosystem.</p>	<p><b>Student Edition:</b> 104-105, 117</p> <p><b>Teacher’s Edition:</b> 104-105, 115, 117</p>

Combined Curriculum, Grade 8	ACCESS Science
<p><b>Core Content for Assessment</b>  <b>SC-H-3.4.1</b> Species change over time. Biological change over time is the consequence of the interactions of (1) the potential for a species to increase its numbers, (2) the genetic variability of offspring due to mutation and recombination of genes, (3) a finite supply of the resources required for life, and (4) natural selection. The consequences of change over time provide a scientific explanation for the fossil record of ancient life forms and for the striking molecular similarities observed among the diverse species of living organisms.</p>	<p><b>Student Edition:</b> 200-207  <b>Teacher’s Edition:</b> 200, 201, 202, 203, 204, 205, 206</p>

## ACADEMIC EXPECTATIONS

Academic Expectations	ACCESS Science
<p><b>2.1</b> Students understand scientific ways of thinking and working and use those methods to solve real-life problems.</p>	<p><b>Student Edition:</b> 16-27, 31, 38, 39, 43, 50, 51, 55, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 103, 110, 111, 115, 122, 123, 127, 134, 135, 139, 146, 147, 151, 158, 159, 163, 170, 171, 175, 182, 183, 187, 194, 195, 206, 207, 211, 218, 219, 230, 231, 235, 242, 243, 247, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p> <p><b>Teacher’s Edition:</b> 16-27, 31, 35, 38, 39, 41, 43, 47, 50, 51, 55, 60, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 101, 103, 110, 111, 115, 122, 123, 125, 127, 133, 134, 135, 139, 142, 146, 147, 151, 156, 158, 159, 163, 168, 170, 171, 175, 178, 182, 183, 187, 194, 195, 206, 207, 211, 216, 218, 219, 221, 222, 226, 228, 230, 231, 234, 235, 237, 242, 243, 244, 247, 248, 254, 255, 259, 262, 266, 267, 268, 271, 275, 278, 279, 281, 282, 283, 290, 291, 295, 302, 303</p>
<p><b>2.2</b> Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p><b>Student Edition:</b> 23, 49, 67, 70, 72, 77, 78-85, 118-119, 173, 187</p> <p><b>Teacher’s Edition:</b> 23, 49, 67, 70, 77, 78, 79, 80, 81, 82, 83, 84, 85, 118, 119, 187</p>
<p><b>2.3</b> Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p><b>Student Edition:</b> 117, 120, 121, 150, 161-169, 174-182, 246, 252, 259, 263, 282-283, 289</p> <p><b>Teacher’s Edition:</b> 117, 120, 121, 150, 161, 162, 164, 165, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 181, 182, 246, 252, 259, 263, 282, 283, 289</p>

Academic Expectations	ACCESS Science
<p><b>2.4</b> Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p><b>Student Edition:</b> 18-19, 20-21, 22-25, 29-37, 55, 91, 120, 121, 151, 211-218</p> <p><b>Teacher’s Edition:</b> 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b>2.5</b> Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p><b>Student Edition:</b> 17-21, 29-38, 77-85, 174-182, 225, 248-251</p> <p><b>Teacher’s Edition:</b> 17, 18, 19, 20, 21, 30, 31, 33, 34, 35, 36, 37, 38, 77, 78, 79, 80, 81, 82, 83, 84, 85, 174, 175, 177</p>
<p><b>2.6</b> Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p><b>Student Edition:</b> 30-31, 33, 197, 198, 199, 200-201, 202, 203, 204, 205, 206-207</p> <p><b>Teacher’s Edition:</b> 30, 31, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>

## PROGRAM OF STUDIES

### Scientific Inquiry

#### Scientific Ways of Thinking and Working (2.1)

Content/Process, Grade 8	ACCESS Science
<p><b>Students will</b></p> <p><b>S-8-SI-1</b></p> <ul style="list-style-type: none"> <li>identify and refine questions that can be answered through scientific investigations combined with scientific information.</li> </ul>	<p><b>Student Edition:</b> 16-27, 38-39, 50-51, 62-63, 74-75, 86-87, 98-99, 110-111, 122-123, 134-135, 146-147, 158-159, 170-171, 182-183, 194-195, 206-207, 218-219, 230-231, 242-243, 254-255, 259, 266-267, 271, 278-279, 283, 290-291, 295, 302-303</p> <p><b>Teacher’s Edition:</b> 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 50, 74, 75, 87, 98, 110, 122, 123, 134, 146, 147, 158, 159, 170, 171, 182, 183, 194, 195, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p>
<p><b>S-8-SI-2</b></p> <ul style="list-style-type: none"> <li>use appropriate equipment (e.g., barometers), tools (e.g., meter sticks), techniques (e.g., computer skills), technology (e.g., computers), and mathematics in scientific investigations.</li> </ul>	<p><b>Student Edition:</b> 19, 27, 38-39, 50-51, 62-63, 74-75, 86-87, 91, 98-99, 110-111, 122-123, 134-135, 146-147, 158-159, 163, 170-171, 182-183, 194-195, 202, 206-207, 218-219, 230-231, 242-243, 254-255, 266-267, 271, 278-279, 283, 290-291, 295, 296, 302-303</p> <p><b>Teacher’s Edition:</b> 19, 38, 62, 74, 87, 91, 98, 110, 122, 146, 147, 158, 159, 163, 170, 171, 182, 183, 194, 195, 202, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p>

Content/Process, Grade 8	ACCESS Science
<p><b>S-8-SI-3</b></p> <ul style="list-style-type: none"> <li>use evidence (e.g., computer models), logic, and scientific knowledge to develop scientific explanations.</li> </ul>	<p><b>Student Edition:</b> 26-27, 38-39, 50-51, 62-63, 74-75, 86-87, 98-99, 110-111, 122-123, 134-135, 146-147, 158-159, 170-171, 182-183, 194-195, 206-207, 218-219, 230-231, 242-243, 254-255, 266-267, 271, 278-279, 283, 290-291, 295, 302-303</p> <p><b>Teacher’s Edition:</b> 26, 27, 38, 39, 50, 51, 62, 74, 75, 87, 98, 99, 110, 111, 122, 123, 134, 135, 146, 147, 158, 159, 170, 171, 182, 183, 194, 195, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p>
<p><b>S-8-SI-4</b></p> <ul style="list-style-type: none"> <li>design and conduct different kinds of scientific investigations to answer different kinds of questions.</li> </ul>	<p><b>Student Edition:</b> 26-27, 38-39, 50-51, 62-63, 74-75, 86-87, 98-99, 110-111, 122-123, 134-135, 146-147, 158-159, 170-171, 182-183, 194-195, 206-207, 218-219, 230-231, 242-243, 254-255, 266-267, 271, 278-279, 283, 290-291, 295, 302-303</p> <p><b>Teacher’s Edition:</b> 26, 27, 38, 39, 50, 51, 62, 74, 75, 87, 98, 99, 110, 111, 122, 123, 134, 135, 146, 147, 158, 159, 170, 171, 182, 183, 194, 195, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p>
<p><b>S-8-SI-5</b></p> <ul style="list-style-type: none"> <li>communicate (e.g., write, graph) designs, procedures, and results of scientific investigations.</li> </ul>	<p><b>Student Edition:</b> 24, 25, 26-27, 31, 38-39, 43, 47, 50-51, 55, 62-63, 67, 74-75, 86-87, 98-99, 103, 110-111, 122-123, 127, 134-135, 146-147, 151, 158-159, 170-171, 175, 182-183, 194-195, 206-207, 214, 218-219, 229, 230-231, 235, 237, 242-243, 249, 253, 254-255, 259, 266-267, 271, 278-279, 283, 290-291, 295, 297, 301, 302-303</p> <p><b>Teacher’s Edition:</b> 24, 25, 26, 27,31, 38, 39, 43, 47, 50, 51, 55, 62, 63, 67, 74, 75, 86, 87, 98, 99, 103, 110, 111, 122, 123, 134, 135, 146, 147, 151, 158, 159, 170, 171, 175, 182, 183, 194, 195, 206, 207, 214, 218, 219, 229, 230, 231,235, 237, 242, 243, 253, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 301, 302, 303</p>
<p><b>S-8-SI-6</b></p> <ul style="list-style-type: none"> <li>review and analyze scientific investigations and explanations of other students.</li> </ul>	<p><b>Student Edition:</b> 27, 62-63, 98-99, 123, 159, 194-195, 254, 266, 271, 279, 283</p> <p><b>Teacher’s Edition:</b> 27, 62, 98, 194, 254, 266, 283</p>

## Conceptual Understandings

### Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.2-2.6)

## Physical Science

Content/Process, Grade 8	ACCESS Science
<p><b>Students will</b></p> <p><b>S-8-PS-1</b></p> <ul style="list-style-type: none"> <li>analyze properties (e.g., boiling point, solubility) and changes of properties in matter.</li> </ul>	<p><b>Student Edition:</b> 222-223, 227, 228-229, 234, 236, 245, 250-255</p> <p><b>Teacher’s Edition:</b> 222, 223, 227, 228, 229, 234, 236, 245, 250, 251, 252, 254, 255</p>
<p><b>S-8-PS-2</b></p> <ul style="list-style-type: none"> <li>measure and represent (e.g., graph) forces on objects and motions (e.g., constant speed, changing speed) of objects.</li> </ul>	<p><b>Student Edition:</b> 270, 275</p> <p><b>Teacher’s Edition:</b> 270, 275</p>
<p><b>S-8-PS-3</b></p> <ul style="list-style-type: none"> <li>investigate transfer of energy (e.g., heat, light, electricity, mechanical motion, sound).</li> </ul>	<p><b>Student Edition:</b> 225, 263, 265, 280-287, 288-289, 290, 291</p> <p><b>Teacher’s Edition:</b> 225, 263, 265, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291</p>

## Earth/Space Science

Content/Process, Grade 8	ACCESS Science
<p><b>Students will</b></p> <p><b>S-8-ESS-1</b></p> <ul style="list-style-type: none"> <li>investigate the structure of the Earth system (e.g., lithosphere, rock cycle, water cycle, weather, climate).</li> </ul>	<p><b>Student Edition:</b> 29-38, 44-45, 48-49</p> <p><b>Teacher’s Edition:</b> 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 44, 45, 48, 49</p>
<p><b>S-8-ESS-2</b></p> <ul style="list-style-type: none"> <li>analyze Earth's history (e.g., Earth processes, catastrophes, evidence for changes).</li> </ul>	<p><b>Student Edition:</b> 29-38, 42-49, 54-61</p> <p><b>Teacher’s Edition:</b> 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 42, 44, 45, 46, 47, 48, 49, 54, 55, 56, 57, 58, 59, 60, 61</p>
<p><b>S-8-ESS-3</b></p> <ul style="list-style-type: none"> <li>investigate the Earth as a component of the solar system (e.g., Sun, planets, motion).</li> </ul>	<p><b>Student Edition:</b> 294, 299-303</p> <p><b>Teacher’s Edition:</b> 294, 299, 300, 301, 302, 303</p>

## Life Science

Content/Process, Grade 8	ACCESS Science
<p><b>Students will</b></p> <p><b>S-8-LS-1</b></p> <ul style="list-style-type: none"> <li>investigate structure (e.g., cells, tissues, organs) and function (e.g., growth, muscular function, digestion) in living systems.</li> </ul>	<p><b>Student Edition:</b> 114-115, 129-133, 136-145, 148-157, 160-169</p> <p><b>Teacher’s Edition:</b> 114, 115, 129, 130, 131, 132, 133, 136, 137, 138, 140, 141, 142, 143, 144, 145, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169</p>
<p><b>S-8-LS-2</b></p> <ul style="list-style-type: none"> <li>analyze reproduction (e.g., asexual, sexual) and heredity (e.g., genetic information, inherited traits).</li> </ul>	<p><b>Student Edition:</b> 188, 189, 191</p> <p><b>Teacher’s Edition:</b> 188, 189, 191</p>
<p><b>S-8-LS-3</b></p> <ul style="list-style-type: none"> <li>analyze regulation (changing physiological activities) and behavior (a set of responses).</li> </ul>	<p><b>Student Edition:</b> 200, 201</p> <p><b>Teacher’s Edition:</b> 200, 201</p>
<p><b>S-8-LS-4</b></p> <ul style="list-style-type: none"> <li>investigate and analyze populations and ecosystems.</li> </ul>	<p><b>Student Edition:</b> 120-121</p> <p><b>Teacher’s Edition:</b> 120, 121</p>
<p><b>S-8-LS-5</b></p> <ul style="list-style-type: none"> <li>analyze diversity and adaptations (e.g., changes in structure, behaviors, or physiology).</li> </ul>	<p><b>Student Edition:</b> 201, 203, 205</p> <p><b>Teacher’s Edition:</b> 201, 203, 205</p>

## Applications/Connections

### Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.2-2.6)

Content/Process, Grade 8	ACCESS Science
<p><b>Students will</b></p> <p><b>S-8-AC-1</b></p> <ul style="list-style-type: none"> <li>use scientific inquiry and conceptual understandings to design technological solutions (e.g., zippers, ballpoint pens) to problems.</li> </ul>	<p><b>Student Edition:</b> 22, 75, 235</p> <p><b>Teacher’s Edition:</b> 22, 75</p>
<p><b>S-8-AC-2</b></p> <ul style="list-style-type: none"> <li>examine the interaction between science and technology.</li> </ul>	<p><b>Student Edition:</b> 22, 36, 94, 144, 156, 180, 202, 214, 229, 252, 264, 277, 287, 297</p> <p><b>Teacher’s Edition:</b> 22, 36, 48, 57, 68, 83, 94, 106, 117, 132, 144, 156, 168, 180, 192, 202, 214, 229, 240, 252, 264, 277</p>

Content/Process, Grade 8	ACCESS Science
<p><b>S-8-AC-3</b></p> <ul style="list-style-type: none"> <li>recognize how science is used to understand changes in populations, issues related to resources, and changes in environments.</li> </ul>	<p><b>Student Edition:</b> 44, 94, 102-103, 105, 106, 117, 122, 192, 202</p> <p><b>Teacher’s Edition:</b> 44, 94, 102, 103, 105, 106, 117, 192, 202</p>
<p><b>S-8-AC-4</b></p> <ul style="list-style-type: none"> <li>examine the role of science in explaining and predicting natural events (e.g., floods, earthquakes, volcanoes).</li> </ul>	<p><b>Student Edition:</b> 37, 38, 62, 74, 175</p> <p><b>Teacher’s Edition:</b> 37, 38, 62, 74</p>
<p><b>S-8-AC-5</b></p> <ul style="list-style-type: none"> <li>use science to evaluate the risks and benefits to society for common activities (e.g., riding on airplanes, choice of habitation).</li> </ul>	<p><b>Student Edition:</b> 51, 96, 104</p>
<p><b>S-8-AC-6</b></p> <ul style="list-style-type: none"> <li>describe the effects of science and technology (e.g., television, computers) on society.</li> </ul>	<p><b>Student Edition:</b> 22, 96, 102-103, 210, 229, 234, 240, 252, 258-259, 262, 264, 283, 287, 296-297</p> <p><b>Teacher’s Edition:</b> 22, 96, 252, 258, 259, 262, 264, 287, 296, 297</p>
<p><b>S-8-AC-7</b></p> <ul style="list-style-type: none"> <li>demonstrate the role science plays in everyday life and explore different careers in science.</li> </ul>	<p><b>Student Edition:</b> 75, 117,128, 131, 180, 187, 203, 144, 202, 204, 205, 210, 215, 235, 237, 240, 264, 295, 296, 297</p> <p><b>Teacher’s Edition:</b> 75, 117, 128, 131, 180, 187, 203, 144, 202, 204, 215, 235, 237, 240, 264, 295, 296, 297</p>
<p><b>S-8-AC-8</b></p> <ul style="list-style-type: none"> <li>recognize that science is a process that generates conceptual understandings and solves problems.</li> </ul>	<p><b>Student Edition:</b> 16-27, 38-39, 50-51, 62-63, 74-75, 86-87, 98-99, 110-111, 122-123, 134-135, 146-147, 158-159, 170-171, 182-183, 194-195, 206-207, 218-219, 230-231, 242-243, 254-255, 259, 266-267, 271, 278-279, 283, 290-291, 295, 302-303</p> <p><b>Teacher’s Edition:</b> 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 38, 50, 62, 74, 86, 99, 110, 122, 123, 134, 135, 146, 147, 158, 159, 182, 183, 194, 195, 207, 218, 230, 242, 243, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 295, 302, 303</p>
<p><b>S-8-AC-9</b></p> <ul style="list-style-type: none"> <li>explore the importance of scientific discoveries in world history (e.g., new drugs, weapons, transportation).</li> </ul>	<p><b>Student Edition:</b> 22, 144, 156, 180, 210, 214, 202, 229, 234, 240, 253, 276-277, 287, 296-297</p> <p><b>Teacher’s Edition:</b> 22, 156, 180, 202, 214, 276, 277, 287, 296, 297</p>

# CORE CONTENT FOR ASSESSMENT

## Conceptual Understandings: Physical Science

### Academic Expectations

2.2 Patterns of Change, 2.3 Systems, 2.4 Scale and Models, 2.5 Constancy, and 2.6 Change Over Time

### Structure of Atoms

Core Content Statement, Grades 8-11	ACCESS Science
<p><b>SC-H-1.1.1</b> Matter is made of minute particles called atoms, and atoms are composed of even smaller components. The components of an atom have measurable properties such as mass and electrical charge. Each atom has a positively charged nucleus surrounded by negatively charged electrons. The electric force between the nucleus and the electrons holds the atom together.</p>	<p><b>Student Edition:</b> 117, 208-219</p> <p><b>Teacher's Edition:</b> 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p><b>SC-H-1.1.2</b> The atom's nucleus is composed of protons and neutrons that are much more massive than electrons. When an element has atoms that differ in the number of neutrons, these atoms are called different isotopes of the element.</p>	<p><b>Student Edition:</b> 213</p> <p><b>Teacher's Edition:</b> 213</p>
<p><b>SC-H- 1.1.3</b> The forces that hold the nucleus together, at nuclear distances, are usually stronger than the forces that would make it fly apart. Nuclear reactions convert a fraction of the mass of interacting particles into energy, and they can release much greater amounts of energy than atomic interactions. Fission is the splitting of a large nucleus into smaller pieces. Fusion is the joining of two nuclei at extremely high temperature and pressure. Fusion is the process responsible for the energy of the Sun and other stars.</p>	<p><b>Student Edition:</b> 95, 214, 298</p> <p><b>Teacher's Edition:</b> 214, 298</p>

## Structure and Properties of Matter

Core Content Statement, Grades 8-11	ACCESS Science
<p><b>SC-H-1.2.1</b> Atoms interact with each other by transferring or sharing outermost electrons. These outer electrons govern the chemical properties of the element.</p>	<p><b>Student Edition:</b> 245-255 <b>Teacher's Edition:</b> 245, 246, 247, 248, 249, 250, 251, 252, 253, 254</p>
<p><b>SC-H-1.2.2</b> An element is composed of a single type of atom. When elements are listed according to the number of protons, repeating patterns of physical and chemical properties identify families of elements with similar properties. The periodic table is a consequence of the repeating pattern of outermost electrons.</p>	<p><b>Student Edition:</b> 215-216, 229, 233-243 <b>Teacher's Edition:</b> 215, 229, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242</p>
<p><b>SC-H-1.2.3</b> Bonds between atoms are created when outer electrons are paired by being transferred or shared. A compound is formed when two or more kinds of atoms bind together chemically.</p>	<p><b>Student Edition:</b> 245, 246, 248, 249 <b>Teacher's Edition:</b> 245, 246, 248, 249</p>
<p><b>SC-H-1.2.4</b> The physical properties of compounds reflect the nature of the interactions among molecules. These interactions are determined by the structure of the molecule including the constituent atoms.</p>	<p><b>Student Edition:</b> 228-229, 234, 236 <b>Teacher's Edition:</b> 228, 229, 234, 236</p>
<p><b>SC-H-1.2.5</b> Solids, liquids, and gases differ in the distances between molecules or atoms and therefore the energy that binds them together. In solids, the structure is nearly rigid; in liquids, molecules or atoms move around each other but do not move apart; and in gases, molecules or atoms move almost independently of each other and are relatively far apart.</p>	<p><b>Student Edition:</b> 220-231, 289 <b>Teacher's Edition:</b> 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230</p>
<p><b>SC-H-1.2.6</b> In conducting materials, electrons flow easily; whereas, in insulating materials, they can hardly flow at all. Semiconducting materials have intermediate behavior. At low temperatures, some materials become superconductors and offer no resistance to the flow of electrons.</p>	<p><b>Student Edition:</b> 238, 239</p>

## Chemical Reactions

Core Content Statement, Grades 8-11	ACCESS Science
<p><b>SC-H-1.3.1</b> Chemical reactions occur all around us and in every cell in our bodies. These reactions may release or consume energy. Rates of chemical reactions vary. Reaction rates depend on concentration, temperature, and properties of reactants. Catalysts speed up chemical reactions.</p>	<p><b>Student Edition:</b> 217, 245, 250-255 <b>Teacher's Edition:</b> 250, 251, 252, 253, 254, 255</p>

## Motion and Forces

Core Content Statement, Grades 8-11	ACCESS Science
<p><b>SC-H-1.4.1</b> Objects change their motion only when a net force is applied. Laws of motion are used to describe the effects of forces on the motion of objects.</p>	<p><b>Student Edition:</b> 272-279 <b>Teacher's Edition:</b> 272, 273, 274, 275, 276, 277, 278, 279</p>
<p><b>SC-H-1.4.2</b> Gravity is a universal force that each mass exerts on every other mass.</p>	<p><b>Student Edition:</b> 59, 84, 274, 316 <b>Teacher's Edition:</b> 84, 274, T39</p>
<p><b>SC-H-1.4.3</b> The electric force is a universal force that exists between any two charged objects. Opposite charges attract while like charges repel.</p>	<p><b>Student Edition:</b> 210-211, 213 <b>Teacher's Edition:</b> 213, 214</p>

## Conservation of Energy and Increase in Disorder

Core Content Statement, Grades 8-11	ACCESS Science
<p><b>SC-H-1.5.1</b> The total energy of the universe is constant. Energy can be transferred in many ways, but it can neither be created nor destroyed.</p>	<p><b>Student Edition:</b> 253 <b>Teacher's Edition:</b> 253</p>
<p><b>SC-H-1.5.2</b> All energy can be considered to be either kinetic energy, potential energy, or energy contained by a field (e.g., electric, magnetic, gravitational).</p>	<p><b>Student Edition:</b> 257-263 <b>Teacher's Edition:</b> 257, 258, 259, 260, 261, 262, 263</p>
<p><b>SC-H-1.5.3</b> Heat is the manifestation of the random motion and vibrations of atoms, molecules, and ions. The greater the atomic or molecular motion, the higher the temperature.</p>	<p><b>Student Edition:</b> 265 <b>Teacher's Edition:</b> 265</p>

## Interactions of Energy and Matter

Core Content Statement, Grades 8-11	ACCESS Science
<p><b>SC-H-1.6.1</b> Waves, including sound and seismic waves, waves on water, and electromagnetic waves, can transfer energy when they interact with matter. Apparent changes in frequency can provide information about relative motion.</p>	<p><b>Student Edition:</b> 281-290 <b>Teacher's Edition:</b> 281, 282, 283, 284, 285, 286, 287, 288, 289</p>
<p><b>SC-H-1.6.2</b> Electromagnetic waves, including radio waves, microwaves, infrared radiation, visible light, ultraviolet radiation, x-rays, and gamma rays, result when a charged object is accelerated.</p>	<p><b>Student Edition:</b> 286 <b>Teacher's Edition:</b> 286</p>

## Conceptual Understandings: Earth and Space Science

### Academic Expectations

**2.2 Patterns of Change, 2.3 Systems, 2.4 Scale and Models, 2.5 Constancy, and 2.6 Change Over Time**

### Energy in the Earth System

Core Content Statement, Grades 8-11	ACCESS Science
<p><b>SC-H-2.1.1</b> Earth systems have sources of energy that are internal and external to the Earth. The Sun is the major external source of energy. Two primary sources of internal energy are the decay of radioactive isotopes and the gravitational energy from Earth's original formation.</p>	<p><b>Student Edition:</b> 68 <b>Teacher's Edition:</b> 68</p>
<p><b>SC-H-2.1.2</b> The outward transfer of Earth's internal heat drives convection circulation in the mantle. This causes the crustal plates to move on the face of the Earth.</p>	<p><b>Student Edition:</b> 34-35 <b>Teacher's Edition:</b> 34</p>
<p><b>SC-H-2.1.3</b> Heating of Earth's surface and atmosphere by the Sun drives convection within the atmosphere and oceans, producing winds and ocean currents.</p>	<p><b>Student Edition:</b> 65</p>
<p><b>SC-H-2.1.4</b> Global climate is determined by energy transfer from the Sun at and near Earth's surface. This energy transfer is influenced by dynamic processes such as cloud cover and the Earth's rotation and static conditions such as the position of mountain ranges and oceans.</p>	<p><b>Student Edition:</b> 65-75 <b>Teacher's Edition:</b> 65, 66, 67, 68, 69, 70, 71, 72, 73, 74</p>

## The Formation and Ongoing Changes of the Earth System

Core Content Statement, Grades 8-11	ACCESS Science
<p><b>SC-H-2.3.2</b> Techniques used to estimate geological time include using radioactive dating, observing rock sequences, and comparing fossils to correlate the rock sequences at various locations.</p>	<p><b>Student Edition:</b> 204-205 <b>Teacher’s Edition:</b> 204-205</p>
<p><b>SC-H-2.3.3</b> Interactions among the solid Earth, the oceans, the atmosphere, and living things have resulted in the ongoing development of a changing Earth system. Earthquakes and volcanic eruptions can be observed on a human time scale, but many processes, such as mountain building and plate movements, take place over hundreds of millions of years.</p>	<p><b>Student Edition:</b> 36-37, 53-63 <b>Teacher’s Edition:</b> 36, 37, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62</p>

## The Formation and Ongoing Changes of the Universe

Core Content Statement, Grades 8-11	ACCESS Science
<p><b>SC-H-2.4.1</b> The big bang theory and observational measurements that support it place the origin of the universe at a time between 10 and 20 billion years ago, when the universe began in a hot dense state. According to this theory, the universe has been expanding since then.</p>	<p><b>Student Edition:</b> 296</p>
<p><b>SC-H-2.4.2</b> Early in the history of the universe, the first atoms to form were mainly hydrogen and helium. Over time, these elements clump together by gravitational attraction to form trillions of stars.</p>	<p><b>Student Edition:</b> 296, 298</p>

## Conceptual Understandings: Life Science

### Academic Expectations

#### 2.2 Patterns of Change, 2.3 Systems, 2.4 Scale and Models, 2.5 Constancy, and 2.6 Change Over Time

#### The Cell

Core Content Statement, Grades 8-11	ACCESS Science
<p><b>SC-H-3.1.1</b> Cells have particular structures that underlie their function. Every cell is surrounded by a membrane that separates it from the outside world. Inside the cell is a concentrated mixture of thousands of different molecules that form a variety of specialized structures. These structures carry out specific cell functions.</p>	<p><b>Student Edition:</b> 137, 140-143, 153 <b>Teacher’s Edition:</b> 140, 141, 142, 143</p>
<p><b>SC-H-3.1.2</b> Most cell functions involve chemical reactions. Food molecules taken into cells react to provide the chemical constituents needed to synthesize other molecules. Both breakdown and synthesis are made possible by a large set of protein catalysts, called enzymes. The breakdown of some of the food molecules enables the cell to store energy in specific chemicals that are used to carry out the many functions of the cell.</p>	<p><b>Student Edition:</b> 160-171 <b>Teacher’s Edition:</b> 160-171</p>
<p><b>SC-H-3.1.3</b> Cells store and use information to guide their functions. The genetic information stored in DNA directs the synthesis of the thousands of proteins that each cell requires.</p>	<p><b>Student Edition:</b> 190 <b>Teacher’s Edition:</b> 190</p>
<p><b>SC-H-3.1.4</b> Cell functions are regulated. Regulation occurs both through changes in the activity of the functions performed by proteins and through selective expression of individual genes. This regulation allows cells to respond to their internal and external environments and to control and coordinate cell growth and division.</p>	<p><b>Student Edition:</b> 144-145 <b>Teacher’s Edition:</b> 144, 145</p>
<p><b>SC-H-3.1.5</b> Plant cells contain chloroplasts, the site of photosynthesis. Plants and many microorganisms (e.g., <i>Euglena</i>) use solar energy to combine molecules of carbon dioxide and water into complex, energy-rich organic compounds and release oxygen to the environment. This process of photosynthesis provides a vital link between the Sun and energy needs of living systems.</p>	<p><b>Student Edition:</b> 141 <b>Teacher’s Edition:</b> 141</p>

<b>Core Content Statement, Grades 8-11</b>	<b>ACCESS Science</b>
<p><b>SC-H-3.1.6</b> In the development of multicellular organisms, cells multiply and differentiate to form many specialized cells, tissues, and organs. This differentiation is regulated through the expression of different genes.</p>	<p><b>Student Edition:</b> 149-157 <b>Teacher's Edition:</b> 137, 149, 150, 151, 152, 153, 154, 155, 157</p>

## **The Behavior of Organisms**

<b>Core Content Statement, Grades 8-11</b>	<b>ACCESS Science</b>
<p><b>SC-H-3.2.1</b> Multicellular animals have nervous systems that generate behavior. Nerve cells communicate with each other by secreting specific molecules. Specialized cells in sense organs detect light, sound, and specific chemicals enabling animals to monitor what is going on in the world around them.</p>	<p><b>Student Edition:</b> 155, 178-179 <b>Teacher's Edition:</b> 179</p>
<p><b>SC-H-3.2.2</b> Behavioral responses to internal changes and external stimuli can be innate or learned. Responses to external stimuli can result from interactions with the organism's own species and/or other species, as well as environmental changes.</p>	<p><b>Student Edition:</b> 176-177, 178-179 <b>Teacher's Edition:</b> 176, 177, 178, 179</p>
<p><b>SC-H-3.2.3</b> The broad patterns of behavior exhibited by organisms have changed over time through natural selection to ensure reproductive success. Organisms often live in unpredictable environments, so their behavioral responses must be flexible enough to deal with uncertainty and change. Behaviors often have an adaptive logic.</p>	<p><b>Student Edition:</b> 197-203 <b>Teacher's Edition:</b> 197, 198, 199, 200, 201, 202, 203</p>

## **The Molecular Basis of Heredity**

<b>Core Content Statement, Grades 8-11</b>	<b>ACCESS Science</b>
<p><b>SC-H-3.3.1</b> In all organisms and viruses, the instructions for specifying the characteristics are carried in nucleic acids. The chemical and structural properties of nucleic acids determine how the genetic information that underlies heredity is both encoded in genes and replicated.</p>	<p><b>Student Edition:</b> 190 <b>Teacher's Edition:</b> 190</p>

<b>Core Content Statement, Grades 8-11</b>	<b>ACCESS Science</b>
<p><b>SC-H-3.3.2</b> Multicellular organisms, including humans, form from cells that contain two copies of each chromosome. This explains many features of heredity. Transmission of genetic information through sexual reproduction to offspring occurs when male and female gametes that contain only one representative from each chromosome pair unite.</p>	<p><b>Student Edition:</b> 188-194 <b>Teacher’s Edition:</b> 188, 189, 190, 191, 192, 193, 194</p>

## Biological Change

<b>Core Content Statement, Grades 8-11</b>	<b>ACCESS Science</b>
<p><b>SC-H-3.4.1</b> Species change over time. Biological change over time is the consequence of the interactions of (1) the potential for a species to increase its numbers, (2) the genetic variability of offspring due to mutation and recombination of genes, (3) a finite supply of the resources required for life, and (4) natural selection. The consequences of change over time provide a scientific explanation for the fossil record of ancient life forms and for the striking molecular similarities observed among the diverse species of living organisms.</p>	<p><b>Student Edition:</b> 200-207 <b>Teacher’s Edition:</b> 200, 201, 202, 203, 204, 205, 206</p>
<p><b>SC-H-3.4.2</b> The great diversity of organisms is the result of more than 3.5 billion years of biological change over time that has filled every available niche with life forms. The millions of different species of plants, animals, and microorganisms that live on Earth today are related by descent from common ancestors.</p>	<p><b>Student Edition:</b> 128, 204-205 <b>Teacher’s Edition:</b> 204, 205</p>
<p><b>SC-H-3.4.3</b> Biological classifications are based on how organisms are related. Organisms are classified into a hierarchy of groups and subgroups based on similarities that reflect their relationships. Species is the most fundamental unit of classification. Different species are classified by the comparison and analysis of their internal and external structures and the similarity of their chemical processes.</p>	<p><b>Student Edition:</b> 125-135 <b>Teacher’s Edition:</b> 125, 126, 127, 128, 129, 130, 131, 132, 133, 134</p>

## The Interdependence of Organisms

<b>Core Content Statement, Grades 8-11</b>	<b>ACCESS Science</b>
<p><b>SC-H-3.5.1</b> Atoms (e.g., carbon, nitrogen) and molecules (e.g., water) cycle among the living and nonliving components of the biosphere.</p>	<p><b>Student Edition:</b> 117, 118-119 <b>Teacher’s Edition:</b> 118, 119</p>

<b>Core Content Statement, Grades 8-11</b>	<b>ACCESS Science</b>
<p><b>SC-H-3.5.2</b> Energy flows through ecosystems in one direction from photosynthetic organisms to herbivores to carnivores and decomposers.</p>	<p><b>Student Edition:</b> 114, 115, 116-117 <b>Teacher’s Edition:</b> 114, 115, 116, 117</p>
<p><b>SC-H-3.5.3</b> Organisms both cooperate and compete in ecosystems. Often changes in one component of an ecosystem will have effects on the entire system that are difficult to predict. The interrelationships and interdependencies of these organisms may generate ecosystems that are stable for hundreds or thousands of years.</p>	<p><b>Student Edition:</b> 113-122 <b>Teacher’s Edition:</b> 113, 114, 115, 116, 117, 118, 119, 120, 121, 122</p>
<p><b>SC-H-3.5.4</b> Living organisms have the capacity to produce populations of infinite size. However, behaviors, environments, and resources influence the size of populations. Models (e.g., mathematical, physical, conceptual) can be used to make predictions about changes in the size or rate of growth of a population.</p>	<p><b>Student Edition:</b> 117, 120-121, 196-207 <b>Teacher’s Edition:</b> 117, 120-121, 196-207</p>
<p><b>SC-H-3.5.5</b> Human beings live within the world’s ecosystems. Human activities can deliberately or inadvertently alter the dynamics in ecosystems. These activities can threaten current and future global stability and, if not addressed, ecosystems can be irreversibly affected.</p>	<p><b>Student Edition:</b> 106-110 <b>Teacher’s Edition:</b> 106, 107, 108, 109, 110</p>

## Matter, Energy, and Organization in Living Systems

<b>Core Content Statement, Grades 8-11</b>	<b>ACCESS Science</b>
<p><b>SC-H-3.6.1</b> Living systems require a continuous input of energy to maintain their chemical and physical organization since the universal tendency is toward more disorganized states. The energy for life primarily derives from the Sun. Plants capture energy by absorbing light and using it to form strong (covalent) chemical bonds between the atoms of carbon-containing molecules. These molecules can be used to assemble larger molecules (e.g., DNA, proteins, sugars, fats). In addition, the energy stored in the bonds between the atoms can be used as sources of energy for life processes.</p>	<p><b>Student Edition:</b> 117 <b>Teacher’s Edition:</b> 117</p>
<p><b>SC-H-3.6.2</b> The chemical bonds of food molecules contain energy. Energy is released when the bonds of food molecules are broken and new compounds with lower energy bonds are formed. Cells usually store this energy temporarily in the phosphate bonds of ATP. During the process of cellular respiration, some energy is lost as heat.</p>	<p><b>Student Edition:</b> 166 <b>Teacher’s Edition:</b> 166, 167</p>

<b>Core Content Statement, Grades 8-11</b>	<b>ACCESS Science</b>
<p><b>SC-H-3.6.3</b> As matter and energy flow through different organizational levels (e.g., cells, organs, organisms, communities) and between living systems and the physical environment, chemical elements are recombined in different ways. Each recombination results in storage and dissipation of energy into the environment as heat. Matter and energy are conserved in each change.</p>	<p><b>Student Edition:</b> 112-121, 136-147, 148-159, 161, 164-166</p> <p><b>Teacher’s Edition:</b> 112-121, 136-147, 148-159, 161, 164-166</p>

## Scientific Inquiry

**Inquiry skills will be assessed only in the context of physical, Earth/space, and life sciences content.**

## Academic Expectation

### 2.1 Scientific Ways of Thinking and Working

<b>Core Content Statement, Grades 8-11</b>	<b>ACCESS Science</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>formulate testable hypotheses and demonstrate the logical connections between the scientific concepts guiding a hypothesis and the design of an experiment.</li> </ul>	<p><b>Student Edition:</b> 17-25, 175, 235, 243, 271, 279</p> <p><b>Teacher’s Edition:</b> 17-25, 175, 235, 243, 271, 279</p>
<ul style="list-style-type: none"> <li>use equipment, tools, techniques, technology, and mathematics to improve scientific investigations and communications.</li> </ul>	<p><b>Student Edition:</b> 16-27, 31, 38, 39, 43, 50, 51, 55, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 103, 110, 111, 115, 122, 123, 127, 134, 135, 139, 146, 147, 151, 158, 159, 163, 170, 171, 175, 182, 183, 187, 194, 195, 206, 207, 211, 218, 219, 230, 231, 235, 242, 243, 247, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p> <p><b>Teacher’s Edition:</b> 16-27, 31, 35, 38, 39, 41, 43, 47, 50, 51, 55, 60, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 101, 103, 110, 111, 115, 122, 123, 125, 127, 133, 134, 135, 139, 142, 146, 147, 151, 156, 158, 159, 163, 168, 170, 171, 175, 178, 182, 183, 187, 194, 195, 206, 207, 211, 216, 218, 219, 221, 222, 226, 228, 230, 231, 234, 235, 237, 242, 243, 244, 247, 248, 254, 255, 259, 262, 266, 267, 268, 271, 275, 278, 279, 281, 282, 283, 290, 291, 295, 302, 303</p>
<ul style="list-style-type: none"> <li>use evidence, logic, and scientific knowledge to develop and revise scientific explanations and models.</li> </ul>	<p><b>Student Book:</b> 20-21, 24, 25, 26, 27, 31, 34-35, 38-39, 50, 51, 74-75, 103, 110-111, 127, 135, 199, 206, 247, 255, 278, 303</p> <p><b>Teacher’s Edition:</b> 20, 21, 24, 25, 26, 27, 31, 34, 35, 38, 39, 50, 51, 74, 75, 103, 110, 111, 127, 135, 199, 206, 247, 255, 278, 303</p>

Core Content Statement, Grades 8-11	ACCESS Science
<ul style="list-style-type: none"> <li>design and conduct different kinds of scientific investigations.</li> </ul>	<p><b>Student Book:</b> 19, 22, 23, 24, 25, 26, 27, 31, 38, 39, 50, 87, 99, 110, 123, 134, 175, 182, 206, 219, 231, 242, 271, 279, 295</p> <p><b>Teacher’s Edition:</b> 19, 22, 23, 24, 25, 26, 27, 31, 38, 39, 50, 87, 99, 110, 123, 134, 175, 182, 206, 219, 231, 242, 271, 279, 295</p>
<ul style="list-style-type: none"> <li>communicate and defend the designs, procedures, observations, and results of scientific investigations.</li> </ul>	<p><b>Student Edition:</b> 16-27, 31, 38, 39, 43, 50, 51, 55, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 103, 110, 111, 115, 122, 123, 127, 134, 135, 139, 146, 147, 151, 158, 159, 163, 170, 171, 175, 182, 183, 187, 194, 195, 206, 207, 211, 218, 219, 230, 231, 235, 242, 243, 247, 254, 255, 259, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p> <p><b>Teacher’s Edition:</b> 16-27, 31, 35, 38, 39, 41, 43, 47, 50, 51, 55, 60, 62, 63, 67, 74, 75, 79, 86, 87, 91, 98, 99, 101, 103, 110, 111, 115, 122, 123, 125, 127, 133, 134, 135, 139, 142, 146, 147, 151, 156, 158, 159, 163, 168, 170, 171, 175, 178, 182, 183, 187, 194, 195, 206, 207, 211, 216, 218, 219, 221, 222, 226, 228, 230, 231, 234, 235, 237, 242, 243, 244, 247, 248, 254, 255, 259, 262, 266, 267, 268, 271, 275, 278, 279, 281, 282, 283, 290, 291, 295, 302, 303</p>
<ul style="list-style-type: none"> <li>review and analyze scientific investigations and explanations of other investigators, including peers.</li> </ul>	<p><b>Student Book:</b> 24, 25, 31, 39, 67, 74, 99, 103, 111, 195, 247, 255, 295</p> <p><b>Teacher’s Edition:</b> 24, 25, 31, 39, 67, 74, 99, 103, 111, 195, 247, 255, 295</p>

## Applications/Connections

Applications/Connections skills will be assessed only in the context of physical, Earth/space, and life sciences content.

## Academic Expectations

**2.2 Patterns of Change, 2.3 Systems, 2.4 Scale and Models, 2.5 Constancy, and 2.6 Change Over Time**

Core Content Statement, Grades 8-11	ACCESS Science
<p><b>Students will</b></p> <p><b>Science and Technology</b></p> <ul style="list-style-type: none"> <li>apply scientific theory and conceptual understandings to solve problems of technological design and examine the interaction between science and technology.</li> </ul>	<p><b>Student Edition:</b> 22, 36, 48, 57, 68, 83, 94, 106, 117, 132, 144, 156, 168, 180, 192, 202, 214, 229, 240, 252, 264, 277, 287, 297</p> <p><b>Teacher’s Edition:</b> 22, 36, 48, 57, 68, 83, 94, 106, 117, 132, 144, 156, 168, 180, 192, 202, 214, 229, 240, 252, 264, 277, 287, 297</p>
<p><b>Science in Personal and Social Perspectives</b></p> <ul style="list-style-type: none"> <li>explore the impact of scientific knowledge and discoveries on personal and community health; recognize how science influences human population growth, use science to analyze the use of natural resources by an increasing human population; investigate how science can be used to solve environmental quality problems, use science to investigate natural and human-induced hazards; and analyze how science and technology are necessary but not sufficient for solving local, national, and global issues.</li> </ul>	<p><b>Student Edition:</b> 97, 99, 100-111, 117</p> <p><b>Teacher’s Edition:</b> 97, 99, 100-111, 117</p>
<p><b>History and Nature of Science</b></p> <ul style="list-style-type: none"> <li>analyze the role science plays in everyday life and compare different careers in science; recognize that scientific knowledge comes from empirical standards, logical arguments, and skepticism, and is subject to change as new evidence becomes available; and investigate advances in science and technology that have important and long-lasting effects on science and society.</li> </ul>	<p><b>Student Book:</b> 17-27, 31, 83, 132, 144, 156, 240, 269, 276, 287, 297</p> <p><b>Teacher’s Edition:</b> 17-27, 31, 35, 83, 132, 144, 156, 240, 269, 276, 287, 297</p>



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