



# Science Curriculum Improvement Study SCIS 3+ Grades K-6

Correlation to

# Colorado Model Content Standards For Science



# **Science Curriculum Improvement Study SCIS 3+ Grades K-6**

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## **Colorado Model Content Standards For Science**

### **Grades K-4 and 5-8**

The Science Improvement Curriculum Study (SCIS 3 +) is a K-6 inquiry-based science program. The fundamental of scientific investigation is imbedded at all levels through life, Earth and space and physical science. *Interrelationships among science, technology and human activity* are found consistently within the context of physical, Earth/space, and life sciences content, activities and extensions. Opportunities for students to apply *Science and Technology, Science in Personal and Social Perspectives* and the *History and Nature of Science* are provided through the investigative activities.

Examples of activities for each of the Colorado Model Content Standards for Science (11/9/96) are on the following pages.

# Colorado Model Content Standards for Science Levels K-4

**Standard One:**

Students understand the process of scientific investigation and design, conduct, communicate about, and evaluate such investigation.

<i><b>In grades K-4, what students know and are able to do includes:</b></i>	<b>SCIS 3+</b>
<p>Asking questions and stating predictions (hypotheses) that can be addressed through scientific investigation;</p>	<p>Asking questions and stating predictions that can be addressed through scientific investigations is part of the nature of the SCIS 3+ program. Some examples at each level include:</p> <p><b>Beginnings, Kindergarten</b> Section One, Chapter 6, Pages 22-23; Chapter 17, Pages 76-77; Section 7, Chapter 42, Pages 120-121,</p> <p><b>Organisms, Level One:</b> Section Four, Chapters 10 &amp; 11, Pages 105-111; Section Two, Chapters 7, Pages 70-78; Section Six, Chapters 14 &amp; 15, Pages 151-168; Section 4, Chapter 10 Student Journal page 10; Section 5, Chapter 12, Student Journal Page 12,</p> <p><b>Material Objects, Level One:</b> Section Four, Chapter 15, 125-134, Section 5, Chapter 18, Pages 161-166, Chapter 20, Pages 175-184;</p> <p><b>Life Cycles, Level Two:</b> Section 2, Chapter 5, Pages 59-66; Section 2, Chapter 7, Pages 81-90, Student Journal Pages 15 &amp; 16</p> <p><b>Interactions and Systems, Level Two:</b> Section 2, Chapter 4, Pages 35-38; Chapter 5, Pages 39-42, Student Journal Page 3</p>

**Populations, Level Three:** Section 1, Chapter 1, Pages 13-22, Student Journal Pages 1-2 ; Section 2, Chapter 6, Pages 63-70, Student Journal Page 7; Chapter 7, Pages 71-78, Student Journal Page 8

**Subsystems and Variables, Level Three:** Section 1, Chapter 1, Pages 11-20, Student Journal Page 1, Chapter 2, Pages 21-30, Student Journal Pages 2-6; Section 2, Chapter 4, Pages 47-56, Student Journal Pages 10-12, Chapter 6, Pages 67-74, Student Journal Page 15; Section 3, Chapter 7, Pages 85-94, Student Journal Pages 18-20, Chapter 9, Pages 105-112, Student Journal Pages 24-25, Chapter 11, Pages 121-128, Student Journal Page 28, Section 5, Chapter 16, Pages 181-186, Student Journal Page 35, Chapter 17, Pages 187-192, Student Journal Page 36, Chapter 19, Pages 203-214, Student Journal Pages 39-43, Section 6, Chapter 21, Pages 227-234, Student Journal Pages 47-48

**Environments, Level Four:** Section 1, Chapter 2, Pages 19-28, Student Journal Pages 2-3; Section 3, Chapter 8, Pages 85-94, Student Journal Page 16-17; Section 3, Chapter 9, Pages 95-104, Student Journal Page 18, Chapter 10, Pages 105-112, Student Journal Page 19, Chapter 11, Pages 113-120, Student Journal Page 20; Section 4, Chapter 13, Pages 139-146, Student Journal Pages 24-25, Chapter 14, Pages 147-156, Student Journal Pages 26-7, Chapter 15, Pages 157-168, Student Journal Pages 29-30, Chapter 16, Pages 169-180, Student Journal Pages 32-34, Section 5, Chapter 17, Pages 187-194, Student Journal Page 39;

**Relative Position and Motion, Level Four:** Section 1, Chapter 1, Pages 13-20,

	Section 4, Chapter 11, Pages 125-132, Student Journal Page 35;
<b>Substandard</b>	<b>SCIS 3+</b>
Selecting and using simple devices to gather data related to an investigation ( <i>for example length, volume, and mass measuring instruments, thermometers, watches, magnifiers, microscopes, calculators, and computers</i> )	<p>Multiple simple devices to gather data in science investigations are included in the kits at every grade level. Some of the following devices are used at the subsequent grade levels:</p> <p><b>Kindergarten (<i>Beginnings</i>):</b> colored lenses, planter cups and bases, fruit extracts, Parquetry stickers and blocks, magnifiers (Chapter 47, Pages 134-135), 7 &amp; 13 dram vials;</p> <p><b>Level One (<i>Organisms and Material Objects</i>):</b> Plant water scheduling chart, Parquetry blocks, Dropper bottles, Grouping and subgrouping chart, Magnifiers, Thermometer, vials (13 &amp; 40 dram), balloon/ syringe system;</p> <p><b>Level Two (<i>Life Cycles and Interactions and Systems</i>):</b> Magnifiers, Rulers (Metric), Measuring spoons, Thermometers (Celsius), Dropper bottles, Chart (“Keeping Track”), Magnetic Compass, Magnifiers, Spoon (1/4 Teaspoon, and Thermicon Card.</p> <p><b>Level Three (<i>Populations and Subsystems and Variables</i>):</b> Aphid Graph, Daphnia Graph, Daphnia Counter square, Droppers, (plastic, 3”) Magnifiers, Vials (13 dram); Simple spring scale, Bottle droppers, Color Cards (Low Temp, &amp; Med Temp), Droppers, Number Line Strips (0-35 &amp; 0-99) Thermometers (Demo, Celsius, Fahrenheit and Temperature Strip) and Vials (7 dram).</p> <p><b>Level Four (<i>Environments and Relative Position and Motion</i>):</b> Charts (Crab Responses to Temperature Histogram, Evaluating Melon Plant Growth Graph, Isopods Responses to Light Histogram</p>

	<p>Isopods Responses to Temperature Histogram, Isopods Responses to Water Histogram, Lettuce and Tomato Response to Light Histogram, Measuring Melon Plant Growth Graph, Outdoor Changes Record, Sunflower Responses to Light Graph, Temperature and Plant Development Chart, Droppers, Rain Gauge, Rulers, Spring Scale, Celsius Thermometer stems and backs; Degree Cards, Direction Chart, Washington D.C. Chart, Polar Grid and Rectangular Grid Chart and overlays, Magnetic Compass, and Map (Washington D. C.).</p>
<b><i>Substandard</i></b>	<b><i>SCIS 3+</i></b>
<p>Using data based on observations to construct a reasonable explanation;</p>	<p>Using data based on observations to construct reasonable explanations is a common practice for students using the SCIS 3+ program. Some examples at each level include:</p> <p><b>Beginnings, Kindergarten:</b> Section Chapter 6, Pages 22-23, Chapter 27, Pages 76-77, Chapter 33, Pages 92-93; Section 6, Chapter 37, Pages 106-107; Section 7, Chapter 40, Pages 116-117; Section 8, Chapter 46, Pages 132-133;</p> <p><b>Organisms, Level One:</b> Section 1, Chapter 2, Student Journal Page 2, Section Two, Chapters 7, Pages 70-78; Section 4, Chapter 10 Student Journal page 10;</p> <p><b>Material Objects, Level One:</b> Section 1, Chapter 4, Pages 29-34, Section 2, Chapter 6, pages 53-58, Section 3, Chapter 13, Pages 105-110, Section 4, Chapter 16, Pages 135-142, Section 5 Chapter 18, Pages 161-166, &amp; Chapter 20, Pages 175-184; Student Journal pages 8, 9, 10, 16, 19, &amp; 20</p> <p><b>Life Cycles, Level Two:</b> Section 2, Chapter 7, Pages 81-90; Section 2, Chapter 8, Pages 91-99; Section 4,</p>

Chapter 16, Pages 191-203, Student Journal Pages 33 & 34;

**Interactions and Systems, Level Two:** Section 2, Chapter 5, Pages 39-42, Student Journal Page 3; Chapter 6, Pages 43-48, Student Journal Pages 4-5; Section 3, Chapter 10, Pages 85-96, Student Journal Page 12; Chapter 11, Pages 97-102, Student Journal Pages 13-15; Section 4, Chapter 12, Pages 111-118, Student Journal Pages 18-20; Chapter 14, Pages 129-136, Student Journal Pages 24-26

**Populations, Level Three:** Section 2, Chapter 7, Pages 71-78, Student Journal Page 8; Section 3, Chapter 9, Pages 97-102, Student Journal Page 12; Chapter 10, Pages 103-108, Student Journal Page 13;

**Subsystems and Variables, Level Three:** Section 1, Chapter 1, Pages 11-20, Student Journal Page 1, Chapter 2, Pages 21-30, Student Journal Pages 2-6; Section 2, Chapter 4, Pages 47-56, Student Journal Pages 10-12, Chapter 6, Pages 67-74, Student Journal Page 15; Section 3, Chapter 7, Pages 85-94, Student Journal Pages 18-20, Chapter 9, Pages 105-112, Student Journal Pages 24-25, Chapter 11, Pages 121-128, Student Journal Page 28, Section 5, Chapter 16, Pages 181-186, Student Journal Page 35, Chapter 17, Pages 187-192, Student Journal Page 36, Chapter 19, Pages 203-214, Student Journal Pages 39-43, Section 6, Chapter 21, Pages 227-234, Student Journal Pages 47-48

**Environments, Level Four:** Section 1, Chapter 2, Pages 19-28, Student Journal Pages 2-3; Section 3, Chapter 8, Pages 85-94, Student Journal Page 16-17;

	<p>Section 3, Chapter 9, Pages 95-104, Student Journal Page 18, Chapter 10, Pages 105-112, Student Journal Page 19, Chapter 11, Pages 113-120, Student Journal Page 20; Section 4, Chapter 13, Pages 139-146, Student Journal Pages 24-25, Chapter 14, Pages 147-156, Student Journal Pages 26-7, Chapter 15, Pages 157-168, Student Journal Pages 29-30, Chapter 16, Pages 169-180, Student Journal Pages 32-34, Section 5, Chapter 17, Pages 187-194, Student Journal Page 39;</p> <p><b>Relative Position and Motion, Level Four:</b> Section 1, Chapter 2, Pages 21-28, Student Journal Pages 1-3; Section 3, Chapter 8, Pages 87-96, Student Journal Pages 23-25;</p>
<b>Substandard</b>	<b>SCIS 3+</b>
<p>Communicating about investigations and explanations.</p>	<p>Communicating about investigations and explanations is embedded in the design of the SCIS 3+ program. Most evident would be the Student Journal Pages. Some examples at each level include:</p> <p><b>Beginnings, Kindergarten:</b> Section 1, Chapter 8, Pages 25-26; Section 2, Chapter 17, Pages 46-47; Section 3, Chapter 24, Pages 66-67; Section 4, Chapter 30, Pages 82-83; Section 5, Chapter 34, Pages 94-95; Section 6, Chapter 38, Pages 108-109; Section 7, Chapter 43, Page 122; Section 8, Chapter 48, Pages 136-137; Section 9, Chapter 52, Pages 148-149; Section 10, Chapter 56, Page 159;</p> <p><b>Organisms, Level One:</b> Section 1, Chapter 2, Student Journal Page 2, Section 3, Chapter 8, Student Journal Pages 7 &amp; 8;</p> <p><b>Material Objects, Level One:</b> Section 3, Chapter 13, Pages 105-110, Section 4, Chapter 16, Pages 135-142, Section 5</p>

Chapter 18, Pages 161-166, & Chapter 20, Pages 175-184; Student Journal pages 8, 9, 10, 16, 19, & 20

**Life Cycles, Level Two:** Section 2, Chapter 6, Pages 67-80, Student Journal Pages 13 & 14; Section 2, Chapter 7, Pages 81-90, Student Journal Pages 15 & 16; Section 3, Chapter 9, Pages 109-120, Student Journal Page 20 & 21; Section 3, Chapter 10, Pages 121-132, Student Journal Page 22 and 23; Section 4, Chapter 13, Pages 161-171, Student Journal Page 28; Section 4, Chapter 14, Pages 173-181, Student Journal Pages 29 & 30; Section 4, Chapter 16, Pages 191-203, Student Journal Page 32 – 34;

**Interactions and Systems, Level Two:** Section 2, Chapter 5, Pages 39-42, Student Journal Page 3; Chapter 6, Pages 43-48, Student Journal Pages 4-5; Section 3, Chapter 10, Pages 85-96, Student Journal Page 12; Chapter 11, Pages 97-102, Student Journal Pages 13-15; Section 4, Chapter 12, Pages 111-118, Student Journal Pages 18-20; Chapter 14, Pages 129-136, Student Journal Pages 24-26

**Populations, Level Three:** Section 2, Chapter 6, Pages 63-70, Student Journal Page 7; Chapter 7, Pages 71-78, Student Journal Page 8; Section 5, Chapter 19, Pages 177-186, Student Journal Page 24

**Subsystems and Variables, Level Three:** Section 1, Chapter 1, Pages 11-20, Student Journal Page 1, Chapter 2, Pages 21-30, Student Journal Pages 2-6; Section 2, Chapter 4, Pages 47-56, Student Journal Pages 10-12, Chapter 6, Pages 67-74, Student Journal Page 15; Section 3, Chapter 7, Pages 85-94, Student Journal Pages 18-20, Chapter 9, Pages 105-112, Student Journal Pages

	<p>24-25, Chapter 11, Pages 121-128, Student Journal Page 28, Section 5, Chapter 16, Pages 181-186, Student Journal Page 35, Chapter 17, Pages 187-192, Student Journal Page 36, Chapter 19, Pages 203-214, Student Journal Pages 39-43, Section 6, Chapter 21, Pages 227-234, Student Journal Pages 47-48</p> <p><b>Environments, Level Four:</b> Section 1, Chapter 2, Pages 19-28, Student Journal Pages 2-3; Section 3, Chapter 8, Pages 85-94, Student Journal Page 16-17; Section 3, Chapter 9, Pages 95-104, Student Journal Page 18, Chapter 10, Pages 105-112, Student Journal Page 19, Chapter 11, Pages 113-120, Student Journal Page 20; Section 4, Chapter 13, Pages 139-146, Student Journal Pages 24-25, Chapter 14, Pages 147-156, Student Journal Pages 26-7, Chapter 15, Pages 157-168, Student Journal Pages 29-30, Chapter 16, Pages 169-180, Student Journal Pages 32-34, Section 5, Chapter 17, Pages 187-194, Student Journal Page 39;</p> <p><b>Relative Position and Motion, Level Four:</b> Section 1, Chapter 2, Pages 21-28, Student Journal Pages 1-3; Section 3, Chapter 8, Pages 87-96, Student Journal Pages 23-25;</p>
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**Standard Two:**

Physical Science: Students know and understand common properties, forms, and changes in matter and energy. (*Focus: Physics and Chemistry*)

<p><b>Substandard 2.1</b> <b>Students know that matter has characteristic properties, which are related to its composition and structure.</b></p>	<p><b>SCIS 3+</b></p>
<p>Examining, describing, classifying, and comparing tangible objects in terms of common physical properties. (<i>for example, states of matter, size, shape, texture, flexibility, color</i>);</p>	<p><b>Beginnings, Kindergarten:</b> Section 2, Chapter 9, Pages 30-31, Chapter 10, Pages 32-33, Chapter 11, Pages, 34-45, Chapter 12, Pages 36-37, Chapter 13, Pages 38-39, Chapter 14, Pages, 40-41, Chapter 15, Pages 42-43, Chapter 16, Pages 44-45 and Chapter 17, Pages 46-67; Section 3, Chapter 18, Pages 54-55, Chapter 21, Pages 60-61, Chapter 22, Pages 62-63, Chapter 23, Pages 64-65; Section 2, Chapter 25, Pages 72-73, Chapter 27, Pages 76-77, Chapter 29, Pages 80-81; Section 5, Chapter 32, Pages 90-91, Chapter 33, Pages 92-93; Section 7, Chapter 40, Pages 116-117, Chapter 41, Pages 118-119; Section 8, Chapter 45, Pages 130-131, Chapter 46, Pages 132-133; Section 10, Chapter 53, Pages 154-155, Chapter 55, Pages 159-160</p> <p><b>Material Objects, Level One:</b> Section 1, Chapters 1-5, Pages 6-43, Section 2, Chapters 6-10, Pages 46-85, Section 3, Chapters 11-13, Pages 88-111, Section 4, Chapter 14, Pages 119-124</p> <p><b>Interactions and Systems, Level Two:</b> Section 1, Chapter 1, Pages 11-16; Chapter 2, Pages 17-20, Chapter 3, Pages 21-26; Section 3, Chapter 8, Pages 71-76; Section 5, Chapter 16, Pages 153-162, Student Journal Page 28; Chapter 17, Pages 163-172, Section 6; Chapter 19, Pages 191-200, Student Journal Pages 31-33;</p> <p><b>Subsystems and Variables, Level</b></p>

	<p><b>Three:</b> Section 1, Chapter 2, Pages 21-30, Student Journal Pages 2-6; Section 2, Chapter 6, Pages 67-74, Student Journal Page 15; Section 3, Chapter 7, Pages 85-94, Student Journal Pages 18-20, Chapter 10, Pages 113-120, Student Journal Pages 26-27, Chapter 11, Pages 121-128, Student Journal Page 28; Section 6, Chapter 21, Pages 227-234, Student Journal Pages 47-48</p> <p><b>Relative Position and Motion, Level Four:</b> Section 1, Chapter 1, Pages 13-20, Section 6, Chapter 17, Pages 197-208, Student Journal Page 57; Chapter 19, Pages 223-234, Student Journal Pages 60-61, Chapter 20, Pages 235-246, Student Journal Pages 64-65</p>
<p>Measuring common physical properties (<i>for example, length, mass, volume, temperature</i>)</p>	<p><b>Beginnings, Kindergarten:</b> Section 8, Chapter 44, Pages 128-129, Chapter 45, Pages 130-131, Chapter 46, Pages 132-133, Chapter 48, Pages, 134-135; Section 9, Chapter 49, Pages 142-143; Chapter 50, Pages 144-145; Chapter 51, Pages 146-147, Chapter 52, Pages 148-149;</p> <p><b>Material Objects, Level One:</b> Section 3, Chapter 13, Pages 105-110, Section 5, Chapter 17, Pages 153-160, Student Journal Page 12</p> <p><b>Life Cycles, Level Two:</b> Section 3, Chapter 11, Pages 133-140, Student Journal Page 24</p> <p><b>Interactions and Systems, Level Two:</b> Section 1, Chapter 2, Pages 17-20; Section 2, Chapter 6, Pages 43-48, Student Journal Pages 4-5;</p> <p><b>Subsystems and Variables, Level Three:</b> Section 4, Chapter 12, Pages 139-146, Student Journal Page 31, Chapter 14, Pages 155-162, Student Journal Page 32, Chapter 15, Pages 163-</p>

	<p>170, Student Journal Page 32, Section 6, Chapter 21, Pages 227-234, Student Journal Pages 47-48</p> <p><b>Relative Position and Motion, Level Four:</b> Section 2, Chapter 7, Pages 69-78, Student Journal Page 20; Section 4, Chapter 12, Pages 133-142, Student Journal Page 37; Section 5, Chapter 13, Pages 151-160, Student Journal Pages 41-43, Chapter 14, Pages 161-168, Student Journal Pages 44-47; Chapter 15, Pages 169-176, Student Journal Pages 48-49, Chapter 16, Pages 177-184, Student Journal Pages 50-53;</p> <p><b>Environments, Level Four:</b> Section 2, Chapter 7, Pages 67-76, Student Journal Page 13; Section 3, Chapter 8, Pages 85-94, Student Journal Page 16-17 Chapter 9, Pages 95-104, Student Journal Page 18; Section 4, Chapter 13, Pages 139-146, Student Journal Pages 24-25;</p>
<p>Creating mixtures and separating them based on differences in properties (<i>for example, salt and sand, iron filings and soil, oil and water</i>);</p>	<p><b>Beginnings, Kindergarten:</b> Section 2, Chapter 12, Pages 36-37</p> <p><b>Material Objects, Level One:</b> Section 2, Chapter 10, Pages 70-84, Section 4, Chapters 15 &amp; 16, Pages 135-142,</p> <p><b>Interactions and Systems, Level Two:</b> Section 5, Chapter 15, Pages 145-152, Student Journal Page 27; Chapter 16, Pages 153-162, Student Journal Page 28;</p> <p><b>Subsystems &amp; Variables, Level Three:</b> Section 3, Chapter 10, Pages 113-120, Student Journal Pages 26-27;</p>

<p align="center"><b>Substandard 2.2</b>  <b>Students know that energy appears in different forms, and can move (be transferred) and change (be transformed).</b></p>	<p align="center"><b>SCIS 3+</b></p>
<p>Recognizing that energy (<i>for example, light, heat, motion, sound, mechanical</i>) can affect common objects and is involved in common events.</p>	<p><b>Beginnings, Kindergarten:</b> Section 7, Chapters 40-41, Pages 116-119;</p> <p><b>Material Objects, Level One:</b> Section Five, Chapter 17, Pages 153-160,</p> <p><b>Interactions and Systems, Level Two:</b> Section 6, Chapter 18, Pages 179-190; Chapter 19, Pages 191-200, Student Journal Pages 31-33; Section 7, Chapter 20, Pages 209-218, Student Journal Pages 36-37; Chapter 21, Pages 219-226, Student Journal Page 38;</p> <p><b>Subsystems and Variables, Level Three:</b> Section 1, Chapter 1, Pages 11-20, Student Journal Page 1; Section 2, Chapter 3, Pages 41-46, Student Journal Page 9, Chapter 4, Pages 47-56, Student Journal Pages 10-12, Chapter 5, Pages 57-66, Student Journal Pages 13-14, Chapter 6, Pages 67-74, Student Journal Page 15</p> <p><b>Relative Position and Motion, Level Four:</b> Section 6, Chapter 19, Pages 223-234, Student Journal Pages 60-61, Chapter 20, Pages 235-246, Student Journal Pages 64-65</p>
<p>Making observations and gathering data on quantities associated with energy, movement, and change (<i>for example, distances for a bean-launcher, time for a melting ice cube</i>);</p>	<p><b>Beginnings, Kindergarten:</b> Section 8, Chapter 46, Pages 132-133;</p> <p><b>Material Objects, Level One:</b> Section Five, Chapter 17, Pages 153-160,</p> <p><b>Subsystems and Variables, Level Three:</b> Section 1, Chapter 1, Pages 11-20, Student Journal Page 1; Section 2, Chapter 3, Pages 41-46, Student Journal Page 9, Chapter 6, Pages 67-74, Student Journal Page 15; Section 4, Chapter 14,</p>

	<p>Pages 155-162, Student Journal Page 32, Chapter 15, Pages 163-170, Student Journal Page 32; Section 5, Chapter 16, Pages 181-186, Student Journal Page 35; Section 6, Chapter 20, Pages 223-226, Student Journal Page 46</p> <p><b>Relative Position and Motion, Level Four:</b> Section 1, Chapter 1, Pages 13-20, Chapter 2, Pages 21-28, Student Journal Pages 1-3</p>
<p>Comparing quantities associated with energy movement and change by constructing simple diagrams or charts (<i>for example, graph of launch distances, chart of melting time</i>);</p>	<p><b>Subsystems and Variables, Level Three:</b> Section 4, Chapter 14, Pages 155-162, Student Journal Page 32, Chapter 15, Pages 163-170, Student Journal Page 32; Section 5, Chapter 17, Pages 187-192, Student Journal Page 36, Chapter 18, Pages 193-202, Student Journal Pages 37-38, Chapter 19, Pages 203-214, Student Journal Pages 39-43; Section 6, Chapter 20, Pages 223-226, Student Journal Page 46, ;</p> <p><i>Relative Position and Motion, Level Four:</i> <b>Section 1, Chapter 2, Pages 21-28, Student Journal Pages 1-3</b></p>
<p><b>Substandard 2.3</b> <b>Students understand that interactions can produce changes in a system, although the total qualities of matter and energy remain unchanged</b></p>	<p><b>SCIS 3+</b></p>
<p>Observing and describing parts of system (<i>for example, water in a closed jar, water in an open jar, a plant terrarium</i>);</p>	<p><b>Beginnings, Kindergarten:</b> Section 1, Chapter 1, Pages 12-13; Section 6, Chapters 36-37, Pages 104-107</p> <p><b>Interactions and Systems, Level Two:</b> Section 3, Chapter 8, Pages 71-76; Chapter 9, Pages 77-84; Chapter 10, Pages 85-96, Student Journal Page 12; Chapter 11, Pages 97-102, Student Journal Pages 13-15; Section 4, Chapter 14, Pages 129-136, Student Journal Pages 24-26; Section 5, Chapter 17, Pages 163-172; Section 7, Chapter 20, Pages 209-218, Student Journal</p>

	<p>Pages 36-37; Chapter 21, Pages 219-226, Student Journal Page 38;</p> <p><b>Subsystems and Variables, Level Three:</b> Section 1, Chapter 1, Pages 11-20, Student Journal Page; Chapter 2, Pages 21-30, Student Journal Pages 2-6; Section 2, Chapter 3, Pages 41-46, Student Journal Page 9, Chapter 4, Pages 47-56, Student Journal Pages 10-12, Chapter 5, Pages 57-66, Student Journal Pages 13-14, Chapter 6, Pages 67-74, Student Journal Page 15; Section 3, Chapter 8, Pages 95-104, Student Journal Pages 22-23, Chapter 9, Pages 105-112, Student Journal Pages 24-25, Chapter 10, Pages 113-120, Student Journal Pages 26-27, Chapter 11, Pages 121-128, Student Journal Page 28; Section 4, Chapter 12, Pages 139-146, Student Journal Page 31; Section 5, Chapter 16, Pages 181-186, Student Journal Page 35;</p> <p><b>Relative Position and Motion, Level Four:</b> Section 1, Chapter 1, Pages 13-20, Chapter 2, Pages 21-28, Student Journal Pages 1-3; Section 6, Chapter 17, Pages 197-208, Student Journal Pages 56-57, Chapter 20, Pages 235-246, Student Journal Pages 64-68;</p>
<p>Describing an observed change (<i>for example, a melting ice cube, crystal growth, burning candle, physical breakage</i>) in terms of starting conditions, type of change, and ending conditions, using words, diagram, or graphics; and</p>	<p><b>Beginnings, Kindergarten:</b> Section 8, Chapter 46, Pages 132-133;</p> <p><b>Material Objects, Level One:</b> Section 4, Chapter 14, Pages 114-118, Section 5, Chapter 17, Pages 153-160; Chapter 16, Pages 135-142</p> <p><b>Interactions and Systems, Level Two:</b> Section 2, Chapter 6, Pages 43-48, Student Journal Pages 4-5; Chapter 7, Pages 49-60, Student Journal Pages 6-9; Section 3, Chapter 8, Pages 71-76; Chapter 9, Pages 77-84; Section 4, Chapter 12, Pages 111-118, Student</p>

	<p>Journal Pages 18-20; Chapter 13, Pages 119-128, Student Journal Pages 21-23; Chapter 14, Pages 129-136, Student Journal Pages 24-26; Section 5, Chapter 16, Pages 153-162, Student Journal Page 28; Chapter 17, Pages 163-172;</p> <p><b>Subsystems and Variables, Level Three:</b> Section 4, Chapter 14, Pages 155-162, Student Journal Page 32, Chapter 15, Pages 163-170, Student Journal Page 32; Section 5, Chapter 17, Pages 187-192, Student Journal Page 36, Chapter 18, Pages 193-202, Student Journal Pages 37-38, Chapter 19, Pages 203-214, Student Journal Pages 39-43; Section 6, Chapter 20, Pages 223-226, Student Journal Page 46;</p> <p><b>Relative Position and Motion, Level Four:</b> Section 1, Chapter 2, Pages 21-28, Student Journal Pages 1-3; Section 3, Chapter 9, Pages 97-106, Student Journal Pages 26-28; Section 6, Chapter 18, Pages 209-222, Student Journal Pages 58-59, Chapter 19, Pages 223-234, Student Journal Pages 60-61</p>
<p>Predicting what changes and what remains unchanged when matter experiences an external influence (<i>for example, a push or pull, additional or removal of heat, division of clay into pieces, melting an ice cube, changing a ball of clay into a flattened shape</i>).</p>	<p><b>Beginnings, Kindergarten:</b> Section 1, Chapter 3, Pages 16-17, Section 2, Chapter 6, Pages 43-48, Student Journal Pages 4-5; Chapter 12, Pages 36-37, Section 8, Chapter 46, Pages 132-133</p> <p><b>Material Objects, Level One:</b> Section 4, Chapter 14, Pages 114-118, Section 5, Chapter 17, Pages 153-160, Chapter 20, Pages 175-184</p> <p><b>Interactions and Systems, Level Two:</b> Section 2, Chapter 6, Pages 43-48, Student Journal Pages 4-5; Chapter 7, Pages 49-60, Student Journal Pages 6-9 Section 3, Chapter 10, Pages 85-96, Student Journal Page 12; Section 4, Chapter 12, Pages 111-118, Student Journal Pages 18-20; Section 5, Chapter</p>

17, Pages 163-172; Section 6, Chapter 18, Pages 179-190; Chapter 19, Pages 191-200, Student Journal Pages 31-33;

**Subsystems and Variables, Level**

**Three:** Section 1, Chapter 2, Pages 21-30, Student Journal Pages 2-5; Section 2, Chapter 4, Pages 47-56, Student Journal Pages 10-12; Section 3, Chapter 7, Pages 85-94, Student Journal Pages 18-20, Chapter 9, Pages 105-112, Student Journal Pages 24-25, Chapter 10, Pages 113-120, Student Journal Pages 26-27, Chapter 11, Pages 121-128, Student Journal Page 28

**Relative Position and Motion, Level**

**Four:** Section 3, Chapter 8, Pages 87-96, Student Journal Pages 23-25, Chapter 9, Pages 97-106, Student Journal Pages 26-28, Chapter 10, Pages 107-116, Student Journal Pages 29-31.

**Standard Three:**

Life Science: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment. (*Focus: Biology—Anatomy, Physiology, Botany, Zoology, Ecology*)

<p align="center"><b>Substandard 3.1</b>  <b>Students know and understand the characteristics of living things, the diversity of life, and how living things interact with each other and with the environment.</b></p>	<p align="center"><b>SCIS 3+</b></p>
<p>Distinguishing living from nonliving things.</p>	<p><b>Beginnings, Kindergarten</b>, Section 1, Pages 12-25 and Section 6, Pages 102-109;</p> <p><b>Organisms, Level One</b>, Section 2, Chapter 7, Pages 71-78 Student Journal Page 6; Section 6, Chapter 14-16, Pages 151-175;</p> <p><b>Life Cycles, Level Two</b>, Section 1, Chapter 2, Pages 23-30, Student Journal Pages 4 &amp; 5; Section 1, Chapter 3, Pages 31-38 Student Journal Pages 6-8;</p> <p><b>Environments, Level Four</b>, Section 1, Chapter 3, Pages 29-34</p>
<p>Classify a variety of organisms according to selected characteristics (<i>for example, backbone vs. no backbone</i>);</p>	<p><b>Organisms, Level One</b>, Section 2, Chapter 5, Pages 57-64 Student Journal Page 4; Section 3, Chapters 8 &amp; 9, Pages 87-98;</p> <p><b>Life Cycles, Level Two</b>, Section 1, Chapter 3, Pages 31-38, Assessment; Section 2, Chapter 4, Pages 51-57 Section 2, Chapter 5, Pages 57-64, Student Journal Page 4; Section 3, Chapter 9, Pages 109-120;</p> <p><b>Populations, Level Three</b>, Section 1, Chapter 1, Pages 13-22 Student Journal Pages 1 &amp; 2; Section 4, Chapter 13, Pages 131-140, Student Journal Pages 16-18</p>
<p>Describing the basic needs (<i>for example,</i></p>	<p><b>Organisms, Level One</b>, Section 3,</p>

<p><i>food, water, air, shelter, space</i>) of an organism;</p>	<p>Chapters 8 &amp; 9, Pages 87-98; Section 2, Chapter 4, Pages 49-56, Student Journal Page 3;</p> <p><b>Life Cycles, Level Two</b>, Section 1, Chapter 1, Pages 13-2, Student Journal Pages 1 -3; Section 2, Chapter 5, Pages 59-66; Section 4, Chapters 12-15, Pages 151-190;</p> <p><b>Populations, Level Three</b>, Section 2, Chapter 7, Pages 71-78; Section 3, Chapters 9 &amp; 10, Pages 97-108;</p> <p><b>Environments, Level Four</b>, Section 1, Chapter 1, Pages 13-18, Student Journal Page 1, Chapter 2, Pages 19-28, Student Journal Pages 2-3; Section 3, Chapter 8, Pages 85-94, Student Journal Page 16-17, Chapter 9, Pages 95-104, Student Journal Page 18 , Chapter 10, Pages 105-112, Student Journal Page 19; Section 4, Chapter 12, Pages 129-138, Student Journal Page 23, Chapter 13, Pages 139-146, Student Journal Pages 24-25, , Chapter 14, Pages 147-156, Student Journal Pages 26-2, Chapter 15, Pages 157-168, Student Journal Pages 29-31, Chapter 16, Pages 169-180, Student Journal Pages 32-35, 37; Section 5, Chapter 17, Pages 187-194, Student Journal Pages 38-39, Chapter 18, Pages 195-202, Student Journal Page 40;</p>
<p>Giving examples of how organisms interact with each other and with nonliving parts of their habitat.</p>	<p><b>Organisms, Level One</b>, Section 1, Chapter 2, Pages 21-30; Section 2, Chapters 3-4, Pages 41-50, Student Journal Page 3; Chapter 6, Pages 65-70, Student Journal Page 5</p> <p><b>Life Cycles, Level Two</b>, Section 1, Chapter 1, Pages 13-21, Student Journal Page 1; Section 3, Chapter 10, Pages 121-132, Student Journal Pages 7 &amp; 8;</p> <p><b>Populations, Level Three</b>, Section 2,</p>

	<p>Chapters 6-8, Pages 63-88; Section 3 Chapters 9&amp; 10, Pages 97-108; Section 4, Chapters 11 &amp; 12, Pages 117-130; Section 5, Chapter 18, Pages 171-176, Chapter 19, Pages 177-186, Student Journal Page 24</p> <p><b>Environments, Level Four</b> Section 1, Chapter 1, Pages 13-18, Student Journal Page 1, Chapter 2, Pages 19-28, Student Journal Pages 2-3, Chapter 3, Pages 29-34, Student Journal Page 4, Chapter 4, Pages 35-42, Student Journal Pages 5-6; Section 3, Section 2, Chapter 6, Pages 59-66, Student Journal Page 10-12; Chapter 8, Pages 85-94, Student Journal Page 16-17, Chapter 9, Pages 95-104, Student Journal Page 18 , Chapter 10, Pages 105-112, Student Journal Page 19; Section 4, Chapter 12, Pages 129-138, Student Journal Page 23, Chapter 13, Pages 139-146, Student Journal Pages 24-25, , Chapter 14, Pages 147-156, Student Journal Pages 26-2, Chapter 15, Pages 157-168, Student Journal Pages 29-31, Chapter 16, Pages 169-180, Student Journal Pages 32-35, 37; Section 5, Chapter 17, Pages 187-194, Student Journal Pages 38-39, Chapter 18, Pages 195-202, Student Journal Page 40;</p>
<p align="center"><b>Substandard 3.2</b> <b><i>Students know and understand interrelationships of matter and energy in living systems.</i></b></p>	<p align="center"><b>SCIS 3+</b></p>
<p>Recognizing that green plants need energy from sunlight and various raw materials to live, and animals consume plants and other organisms to live; and</p>	<p><b>Beginnings, Kindergarten</b>, Section 1, Chapter 6, Pages 22-23;</p> <p><b>Organisms, Level One</b>, Section 1, Chapter 2, Pages 21-30; Section 4, Chapters 10 &amp; 11, Pages 105-120; Section 5, Chapters 12 &amp; 13,</p> <p><b>Organisms, Level One cont'd.</b> Pages 129-137; Section Six, Pages 159-174, Student Journal Pages 13 &amp; 14</p>

	<p><b>Life Cycles, Level Two</b>, Section 1, Chapter 1, Pages 13-21, Student Journal Page 1; Section 2, Chapters 5-81, Pages 59-90;</p> <p><b>Populations, Level Three</b>, Section 4, Chapters 11-15, Pages 117-158, Student Journal Pages 16-18, Assessment, Page 159; Section 5, Chapters 17-19, Pages 165-186 Student Journal Pages 23 &amp; 24;</p> <p><b>Environments, Level Four</b>, Section 1, Chapter 2, Pages 19-28, Student Journal Pages 2-3; Section 3, Chapter 8, Pages 85-94, Student Journal Page 16-17</p>
<p>Recognizing the interrelationships of organisms by tracing the flow of matter and energy in a food chain.</p>	<p><b>Organisms, Level One</b>, Section 5, Chapters 12 &amp; 13, Pages 129-144, Student Journal Pages 12-14;</p> <p><b>Life Cycles, Level Two</b>: Section 1, Chapter 1, Pages 13-21, Student Journal Page 1;</p> <p><b>Populations, Level Three</b>, Section 4, Chapters 11-15, Pages 117-158, Student Journal Pages 16-18, Assessment, Page 159; Section 5, Chapters 17-19, Pages 165-186, Student Journal Pages 23 &amp; 24; Section 4, Chapter 15, Pages 147-152, "Science Extensions"</p> <p><b>Environments, Level Four</b>: Section 1, Chapter 1, Pages 13-18, Student Journal Page 1</p>
<p><b>Substandard 3.3</b> <b><i>Students know and understand how the human body functions, factors that influence its structures and functions, and how these structures and functions compare with those of other organisms.</i></b></p>	<p><b>SCIS 3+</b></p>
<p>Describing human body systems (for example, digestive, respiratory, circulatory, skeletal, muscular);</p>	
<p>Describing the basic food requirements for humans as summarized in the nutrition pyramid.</p>	

<p>Describing life cycles of selected organisms (for example, frog, chicken, butterfly, radish, bean plant.)</p>	<p><b>Organisms, Level One</b>, Section 1, Pages 13-20; Section 2, Chapter 6, Pages 65-70, Student Journal Page 5;</p> <p><b>Life Cycles, Level Two</b>, Section 2, Chapter 4, Pages 51-58, Student Journal Page 1; Section 3, Chapter 10, Pages 121-132 Student Journal Pages 21, 22, 23; Section 4, Chapters 12-16, Pages 151-191; Assessment Pg. 203, Student Journal Pages 27, 28, 29, 30, 31, 32, 33, 34, 35, 36 &amp; 37</p> <p><b>Populations, Level Three:</b> Section 1, Chapter 1, Pages 13-22, Student Journal Pages 1-2; Chapter 2, Pages 23-27; Chapter 3, Pages 29-34, Student Journal Page 3</p>
<p style="text-align: center;"><b>Substandard 3.4</b> <b><i>Students know and understand how organisms change over time in terms of biological evolution and genetics.</i></b></p>	<p style="text-align: center;"><b>SCIS 3+</b></p>
<p>Identify characteristics that are common to all individuals of a species (for example, offspring resemble their parents);</p>	<p><b>Beginnings, Kindergarten</b>, Section 1, Chapter 3, Pages 16-17, Chapter 6, Pages 22-23</p> <p><b>Organisms, Level One</b>, Section 6, Chapters, Pages 65-70, Student Journal Page 5;</p> <p><b>Life Cycles, Level Two</b>, Section 2, Chapter 6, Pages 67-80; Section 2, Chapter 8, Pages 91-99; Section 3, Chapters 10-11, Pages 121-140 &amp; Assessment, Page 141; Section 4, Chapters 12, 14, 15, &amp; 16, Pages 151-160, 173-202; Student Journal Pages 27, 28, 29, 30, 31, 32, 33, 34, 35, 36 &amp; 37</p> <p><b>Populations, Level Three:</b> Section 1, Chapter 2, Pages 23-27; Section 4, Chapter 12, Pages 123-129</p>

<p>Recognizing that there are differences in appearance among individuals of the same population group;</p>	<p><b>Beginnings, Kindergarten</b>, Section 6, Chapter 36, Pages 104-105</p> <p><b>Organisms, Level One</b>, Section Two, Chapter 5, Pages 57-64, Student Journal Page 4;</p> <p><b>Life Cycles, Level Two</b>, Section 2, Chapter 6, Pages 67-80; Section 2, Chapter 8, Pages 91-100; Section 3, Chapter 9, Pages 109-120 Section 3, Chapter 11, Pages 121-132, Student Journal pages 21-23</p> <p><b>Populations, Level Three</b>, Section 2, Chapter 5 Pages 55-62, Section 4, Chapter 12, Pages 123-129</p>
<p>Identifying characteristics of plants and animals that allow them to live in specific environments; and</p>	<p><b>Beginnings, Kindergarten</b>, Section 1, Chapter 4, Pages 18-19, Chapter 5, Pages 20-21, Chapter 6, Pages 22-23 &amp; Chapter 7, Pages 24-25; Section 6, Chapter 36, Pages 104-105, Chapter 37, Pages 106-107,</p> <p><b>Organisms, Level One</b>, Section 2, Chapter 5, Pages 57-64, Student Journal Page 4; Section 2, Chapter 8, Pages 91-99; Section 3, Chapter 9, Pages 109-120, Chapter 10, Pages 121-132</p> <p><b>Life Cycles, Level Two</b>: Section 3, Chapter 10, Pages 121-132</p> <p><b>Populations, Level Three</b>, Section 1, Chapter 2, Pages 23-27; Section 2, Chapter 6, Pages 63-70, Section 4, Chapter 12, Pages 123-129, “Science and the Arts” &amp; “Science and Language Arts”; Section 5, Chapter 18, Pages 171-176</p> <p><b>Environments, Level Four</b>, Section 3, Chapter 8, Pages 85-94, Student Journal Page 16-17, Chapter 9, Pages 95-104, Student Journal Page 18, Chapter 10,</p>

	<p>Pages 105-112, Student Journal Page 19, Chapter 11, Pages 113-120, Student Journal Page 20</p> <p>Section 4, Chapter 12, Pages 129-138, Student Journal Page 23, Chapter 13, Pages 139-146, Student Journal Pages 24-25, Chapter 14, Pages 147-156, Student Journal Pages 26-28, Chapter 15, Pages 157-168, Student Journal Pages 29-31</p>
<p>Describing examples of extinct organisms based on fossil evidence (<i>for example, dinosaurs</i>).</p>	

**Standard Four:**

Earth and Space Science: Students know and understand the processes and interactions of Earth’s systems and the structure and dynamics of Earth and other objects in space. (*Focus: Geology, Meteorology, Astronomy, and Oceanography*)

<p align="center"><b>Substandard 4.1</b> <b>Students know and understand the composition of Earth, its history, and the natural processes that shape it.</b></p>	<p align="center"><b>SCIS 3+</b></p>
<p>Describing different types and uses of Earth materials (<i>for example, rocks, soil, minerals</i>);</p>	<p><b>Material Objects</b>, Section 2, Chapters 9 &amp; 10, Pages 73-84</p> <p><b>Environments, Level Four:</b> Section 2, Chapter 7, Pages 67-76, Student Journal Page 13;</p>
<p>Recognizing that fossils are evidence of past life;</p>	
<p>Identifying major features of Earth’s surface (<i>for example, weathering, erosion, mountain building, volcanic activity</i>) and</p>	<p><b>Interactions and Systems, Level Two:</b> Section 3, Chapter 11, Pages 97-102, Student Journal Pages 13-15</p>
<p>Recognizing that humans are affected by natural events (<i>for example, earthquakes, volcanoes, floods</i>).</p>	<p><b>Subsystems and Variables, Level Three:</b> Section 6, Chapter 22, Pages 235-242, Student Journal Pages 49-50;</p> <p><b>Relative Position and Motion, Level Four:</b> Section 6, Chapter 20, Pages 235-246, Student Journal Pages 64-65</p> <p><b>Environments, Level Four:</b> Section 5, Chapter 18, Pages 195-202, Student Journal Page 40</p>
<p align="center"><b>Substandard 4.2</b> <b>Students know and understand the general characteristics of the atmosphere and fundamental processes of weather.</b></p>	<p align="center"><b>SCIS 3+</b></p>
<p>Recognizing that the Sun is a principal source of Earth’s heat and light.</p>	<p><b>Relative Position and Motion, Level Four:</b> Section 6, Chapter 17, Pages 197-208, Student Journal Page 57</p>
<p>Recognizing how our daily activities are affected by the weather (<i>for example, types of clothing, travel plans, recreational activity</i>); and</p>	
<p>Describing existing weather conditions, collecting and recording weather data (<i>for example, temperature, precipitation, amount</i>)</p>	<p><b>Interactions and Systems, Level Two:</b> Section 5, Chapter 17, Pages 163-172</p>

of cloud cover).	<b>Environments, Level Four:</b> Section 2, Chapter 5, Pages 51-58, Student Journal Page 9
<b>Substandard 4.3</b> <b>Students know major sources of water, its uses, importance, and cyclic patterns of movement through the environment.</b>	<b>SCIS 3+</b>
Identifying major sources of water (for example, oceans, glaciers, rivers, groundwater, atmosphere);	<b>Interactions and Systems, Level Two:</b> Section 5, Chapter 17, Pages 163-172;  <b>Environments, Level Four:</b> Section 2, Chapter 7, Pages 67-76, Student Journal Page 13
Identifying and describing the states ( <i>solid, liquid, gaseous</i> ) in which water can be found on Earth; and	<b>Beginnings, Kindergarten,</b> Section 8, Chapter 46, Pages 132-133;  <b>Material Objects,</b> Section 5, Chapter 17, Pages 153-160  <b>Interactions and Systems, Level Two:</b> Section 3, Chapter 11, Pages 97-102, Student Journal Pages 13-15; Section 5, Chapter 17, Pages 163-172  <b>Environments, Level Four:</b> Section 2, Chapter 7, Pages 67-76, Student Journal Page 13
Recognizing the importance and uses of water (for example, drinking, washing, irrigating).	<b>Interactions and Systems, Level Two:</b> Section 5, Chapter 16, Pages 153-162, "Science Technology & Society"
<b>Substandard 4.4</b> <b>Students know the structure of the solar system, composition and interactions of objects in the universe, and how space is explored.</b>	<b>SCIS 3+</b>
Describing what can be readily observed by the unaided eye in the daytime and nighttime sky (for example, the Sun, Moon, planets, stars, constellations);	<b>Relative Position and Motion, Level Four,</b> Section 6, Chapter 17, Pages 197-208, Student Journal Page 57, Chapter 18, Pages 209-222, Student Journal Pages 58-5, Chapter 19, Pages 223-234, Student Journal Pages 60-61, Chapter 20, Pages 235-246, Student Journal Pages 64-65
Describing the motion of Earth in relation to the Sun, including the concepts of day, night, and year;	<b>Relative Position and Motion, Level Four:</b> Section 6, Chapter 17, Pages 197-208, Student Journal Page 57, Chapter

	18, Pages 209-222, Student Journal Pages 58-5, Chapter 19, Pages 223-234, Student Journal Pages 60-61, Chapter 20, Pages 235-246, Student Journal Pages 64-65
Recognizing the characteristics of seasons;	<b>Relative Position and Motion, Level Four:</b> Section 6, Chapter 17, Pages 197-208, Student Journal Page 57  <b>Environments, Level Four:</b> Section 2, Chapter 5, Pages 51-58, Student Journal Page 9
Identifying basic components of the solar system ( <i>for example, Sun, planets, moons</i> ); <i>and</i>	<b>Relative Position and Motion, Level Four:</b> Section 6, Chapter 19, Pages 223-234, Student Journal Pages 60-61; Chapter 20, Pages 235-246, Student Journal Pages 64-65
Describing a space exploration event such as a manned or unmanned space mission.	

**Standard Five:**

Students know and understand the interrelationships among science, technology, and human activity and how they can affect the world:

<b><i>In grades K-4, what students know and are able to do includes:</i></b>	<b>SCIS 3+</b>
Recognizing the diversity of resources provided by the Earth and Sun ( <i>for example, soil, fuels, minerals, medicines, food</i> );	<b>Material Objects, Level One:</b> Section 2, Chapters 9 & 10, Pages 73-84 <b>Interactions and Systems;</b> Section 5, Chapter 17, Pages 163-172; <b>Environments, Level Four:</b> Section 2, Chapter 7, Pages 67-76, Student Journal Page 13
Inventing a device that addresses an everyday problem (or task), and communicating the problem (or task), design, and solution;	<b>Subsystems and Variables, Level Three:</b> Section 6, Chapter 22, Pages 235-242, Student Journal Pages 49-50
Describing resource-related activities in which they could participate that can benefit their communities ( <i>for example, recycling, water conservation</i> ); and	<b>Organisms, Level One:</b> Section 6, Chapters 14-16, Pages 151-181, Student Journal Pages 15-16 <b>Interactions and Systems, Level Two:</b> Section 5, Chapter 16, Pages 153-162, "Science Technology and Society"
Identifying careers that use science and technology.	

**Standard Six:**

Students understand that science involves a particular way of knowing and understand common connections among scientific disciplines.

<b><i>In grades K-4, what students know and are able to do includes</i></b>	<b>SCIS 3+</b>
Recognizing that when a science experiment is repeated with the same conditions, the experiment generally works the same way;	<p>In the SCIS Program as students experiment with different phenomena, they work individually or in groups. They base their conclusions on compared and contrasted class data to determine if the results are the same or vary. Examples of these experiences include:</p> <p><b>Life Cycles, Level Two:</b> Section 2, Chapter 8, Pages 91-99, Student Journal Page 19</p> <p><b>Interactions and Systems, Level Two:</b> Section 2, Chapter 4, Pages 35-38; Chapter 5, Pages 39-42, Student Journal Page 3</p> <p><b>Populations, Level Three:</b> Section 4, Chapter 13, Pages 119-128, Student Journal Pages 21-23, &amp; “Applications and Extensions” Section 2, Chapter 6, Pages 43-48, Student Journal Pages 4-5; Chapter 7, Pages 49-60, Student Journal Pages 6-9</p> <p><b>Subsystems and Variables, Level Three:</b> Section 1, Chapter 1, Pages 11-20, Student Journal Page 1, Chapter 2, Pages 21-30, Student Journal Pages 2-6; Section 2, Chapter 4, Pages 47-56, Student Journal Pages 10-12, Chapter 6, Pages 67-74, Student Journal Page 15; Section 3, Chapter 7, Pages 85-94, Student Journal Pages 18-20, Chapter 9, Pages 105-112, Student Journal Pages 24-25, Chapter 11, Pages 121-128, Student Journal Page 28, Section 5, Chapter 16, Pages 181-186, Student Journal Page 35, Chapter 17, Pages 187-</p>

	<p>192, Student Journal Page 36, Chapter 19, Pages 203-214, Student Journal Pages 39-43, Section 6, Chapter 21, Pages 227-234, Student Journal Pages 47-48</p> <p><b>Environments, Level Four:</b> Section 1, Chapter 2, Pages 19-28, Student Journal Pages 2-3; Section 3, Chapter 8, Pages 85-94, Student Journal Page 16-17; Section 3, Chapter 9, Pages 95-104, Student Journal Page 18, Chapter 10, Pages 105-112, Student Journal Page 19, Chapter 11, Pages 113-120, Student Journal Page 20; Section 4, Chapter 13, Pages 139-146, Student Journal Pages 24-25, Chapter 14, Pages 147-156, Student Journal Pages 26-7, Chapter 15, Pages 157-168, Student Journal Pages 29-30, Chapter 16, Pages 169-180, Student Journal Pages 32-34, Section 5, Chapter 17, Pages 187-194, Student Journal Page 39</p> <p><b>Relative Position and Motion, Level Four:</b> Section 1, Chapter 1, Pages 13-20, Section 4, Chapter 11, Pages 125-132, Student Journal Page 35;</p>
<p>Comparing knowledge gained from direct experience to knowledge gained indirectly <i>(for example, collecting data about students heights in their class and comparing the results to similar data collected in another class or school);</i></p>	<p><b>Beginnings, Kindergarten,</b> Section 8, Chapter 44, Pages 128-129</p> <p><b>Organisms, Level One:</b> Section 4, Chapter 11 Student Journal Page 11</p> <p><b>Material Objects, Level One:</b> Section 2, Chapter 8, Pages 91-99, Student Journal Page 19;</p> <p><b>Life Cycles, Level Two:</b> Section 2, Chapter 5, Pages 59-66; Section 4, Chapter 16, Pages 191-203, Student Journal Page 35</p> <p><b>Interactions and Systems, Level Two:</b> Section 2, Chapter 7, Pages 49-60, Student Journal Pages 6-9; Section 5,</p>

	<p>Chapter 17, Pages 163-172;</p> <p><b>Populations, Level Three:</b> Section 2, Chapter 7, Pages 49-60, Student Journal Pages 6-9; Section 3, Chapter 8, Pages 71-76, Student Journal Page 9; Section 3, Chapter 9, Pages 97-102, Student Journal Page 12; Chapter 10, Pages 103-108, Student Journal Page 13</p> <p><b>Subsystems and Variables, Level Three:</b> Section 1, Chapter 2, Pages 21-30, Student Journal Pages 2-6; Section 2, Chapter 6, Pages 67-74, Student Journal Page 15; Section 3, Chapter 8, Pages 95-104, Student Journal Page 22;</p> <p><b>Environments, Level Four:</b> Section 3, Chapter 8, Pages 85-94, Student Journal Page 17, Section 3, Chapter 10, Pages 105-112, Student Journal Page 19; Section 4, Chapter 13, Pages 139-146, Student Journal Page 25, Chapter 14, Pages 147-156, Student Journal Page 28, Chapter 15, Pages 157-168, Student Journal Page 31, Chapter 16, Pages 169-180, Student Journal Page 35; Section 5, Chapter 17, Pages 187-194, Student Journal Page 38;</p> <p><b>Relative Position and Motion, Level Four:</b> Section 6, Chapter 19, Pages 223-234, Student Journal Pages 60-61, Chapter 20, Pages 235-246, Student Journal Pages 64-65</p>
<p>Identifying observable patterns and changes in their lives and predicting future events based on those patterns (<i>for example, seasonal weather patterns</i>);</p>	<p><b>Organisms, Level One:</b> Section 3, Chapter 9, Pages 93-98, Student Journal Page 9; Section 5, Chapter 12, Pages 129-136, Student Journal Page 12;</p> <p><b>Life Cycles, Level Two:</b> Section 4, Chapter 16, Pages 191-203, Student Journal Page 35</p> <p><b>Interactions and Systems, Level Two:</b> Section 5, Chapter 16, Pages 153-162,</p>

	<p>Student Journal Page 28</p> <p><b>Populations, Level Three</b> Section 4, Chapter 16, Pages 153-158, Student Journal Pages 19-20</p> <p><b>Subsystems and Variables, Level Three:</b> Section 5, Chapter 18, Pages 193-202, Student Journal Pages 37-38</p> <p><b>Environments, Level Four:</b> Section 2, Chapter 5, Pages 51-58, Student Journal Page 9; Section 5, Chapter 18, Pages 195-202, Student Journal Page 4</p> <p><b>Relative Position and Motion, Level Four:</b> Section 6, Chapter 18, Pages 209-222, Student Journal Pages 58-59, Chapter 19, Pages 223-234, Student Journal Pages 60-61</p>
<p>Describing and comparing the components and interrelationships of simple system <i>(for example, tracing the continuous flow of water through an aquarium, filter, and pump)</i>; and</p>	<p><b>Beginnings, Kindergarten,</b> Section 1, Chapter 4, Pages 18-19, Chapter 5, Pages 20-21, Section 6, Chapter 36, Pages 104-105, Chapter 37, Pages 106-107;</p> <p><b>Material Objects:</b> Section 5, Chapter 20, Pages 175-184</p> <p><b>Organisms, Level One:</b> Section 5, Chapter 13, Pages 137-144, Student Journal Page 5</p> <p><b>Life Cycles, Level Two:</b> Section 1, Chapter 1, Pages 13-21, Student Journal Page 1;</p> <p><b>Interactions and Systems, Level Two:</b> Section 3, Chapter 8, Pages 71-76; Chapter 9, Pages 77-84; Chapter 10, Pages 85-96, Student Journal Page 12; Chapter 11, Pages 97-102, Student Journal Pages 13-15; Section 4, Chapter 14, Pages 129-136, Student Journal Pages 24-26; Section 5, Chapter 17, Pages 163-172; Section 7, Chapter 20,</p>

Pages 209-218, Student Journal  
Pages 36-37; Chapter 21, Pages 219-226,  
Student Journal Page 38;

**Populations, Level Three:** Section 2,  
Chapter 4, Pages 43-53, Student Journal  
Page 6; Section 3, Chapter 9, Pages 97-  
102, Student Journal Page 12; Chapter  
10, Pages 103-108, Student Journal  
Page 13; Section 4, Chapter 12, Pages  
123-129, Chapter 13, Pages 131-140,  
Student Journal Pages 16-18,  
Chapter 14, Pages 141-146; Section 5,  
Chapter 17, Pages 165-170, Student  
Journal Page 23, Chapter 18, Pages 171-  
176,  
Chapter 19, Pages 177-186, Student  
Journal Page 24;

**Subsystems and Variables, Level  
Three:** Section 1, Chapter 1, Pages 11-  
20, Student Journal Page 1; Chapter 2,  
Pages 21-30, Student Journal Pages 2-6;  
Chapter 3, Pages 41-46, Student Journal  
Page 9; Section 2, Chapter 4, Pages 47-  
56, Student Journal Pages 10-12,  
Chapter 5, Pages 57-66, Student Journal  
Pages 13-14, Chapter 6, Pages 67-74,  
Student Journal Page 15; Section 3,  
Chapter 8, Pages 95-104, Student  
Journal Pages 22-23; Chapter 10, Pages  
113-120, Student Journal Pages 26-27,  
Chapter 11, Pages 121-128, Student  
Journal Page 28; Chapter 12, Pages 139-  
146, Student Journal Page 3; Section 4,  
Chapter 14, Pages 155-162, Student  
Journal Page 32; Section 5, Chapter 19,  
Pages 203-214, Student Journal Page 43;

**Environments, Level Four:** Section 4,  
Chapter 14, Pages 147-156, Student  
Journal Pages 26-28; Chapter 16, Pages  
169-180, Student Journal Pages 32-35,  
37,

**Relative Position and Motion, Level**

<p>Comparing a model with what it represents (for example, comparing a map of the school to the actual school; a model of the Earth to the Earth itself)</p>	<p><b>Four:</b> Section 1, Chapter 1, Pages 13-20</p> <p><b>Beginnings, Kindergarten,</b> Section 1, Chapter 1, Pages 12-13, Chapter 7, Pages 24-25, Section 6, Chapter 36, Page 104-105</p> <p><b>Organisms, Level One:</b> Section 5, Chapter 13, Pages 137-144, Student Journal Page 5</p> <p><b>Life Cycles, Level Two:</b> Section 1, Chapter 1, Pages 13-21, Student Journal Pages 1 &amp; 3</p> <p><b>Interactions and Systems, Level Two:</b> Section 7, Chapter 21, Pages 219-226, Student Journal Page 38; Section 5, Chapter 17, Pages 163-172, "Science Technology and Society";</p> <p><b>Populations, Level Three:</b> Section 4, Chapter 11, Pages 117-121, Chapter 12, Pages 123-129; Section 5, Chapter 15, Pages 145-152, Student Journal Page 27;</p> <p><b>Subsystems and Variables, Level Three:</b> Section 2, Chapter 5, Pages 57-66, Student Journal Pages 13-14;</p> <p><b>Environments, Level Four:</b> Section 4, Chapter 14, Pages 147-156, Student Journal Pages 26-28; Chapter 16, Pages 169-180, Student Journal Pages 32-35, 37, Section 4, Chapter 14, Pages 147-156, Student Journal Pages 26-28; Chapter 16, Pages 169-180, Student Journal Pages 32-35, 37,</p> <p><b>Relative Position and Motion, Level Four:</b> Section 2, Chapter 6, Pages 58-68, Student Journal Pages 14-16, Chapter 7, Pages 69-78, Student Journal Pages 17-19, Chapter 8, Pages 87-96, Student Journal Pages 23-25, Chapter 10, Pages 107-116, Student Journal Pages 29-31;</p>
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	Section 5, Chapter 16, Pages 177-184, Student Journal Pages 50-53; Section 6, Chapter 17, Pages 197-208, Student Journal Page 57, Chapter 18, Pages 209-222, Student Journal Pages 58-59, Chapter 19, Pages 223-234, Student Journal Pages 60-61, Chapter 20, Pages 235-246, Student Journal Pages 64-65
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# Colorado Model Content Standards for Science Levels 5-6

**Standard One:**

Students understand the process of scientific investigation and design, conduct, communicate about, and evaluate such investigation.

<b><i>As students in grades 5-8 extend their knowledge, what they know and are able to do includes:</i></b>	<b>SCIS 3+</b>
<p>Identifying and evaluating alternative explanations and procedures;</p>	<p>Identifying and evaluating alternative explanations is a common practice for students using the SCIS 3+ program. Some specific examples are in the following levels:</p> <p><b>Energy Source, Level Five:</b> Section 2, Chapter 6, Pages 61-68, Student Journal Pages 15-16; Section 5, Chapter 18, Pages 201-205, Student Journal Page 42;</p> <p><b>Communities, Level Five:</b> Section 2, Chapter 7, Pages 69-79, Student Journal Page 15; Section 4, Chapter 14, Pages 159-168, Student Journal Page 33;</p> <p><b>Ecosystems, Level Six:</b> Section 3, Chapter 13, Pages 125-134, Student Journal Page 25, Chapter 12, Pages 117-123, Student Journal Page 22;</p> <p><b>Scientific Theories, Level Six:</b> Section 2, Chapter 6, Pages 69-78, Student Journal Pages 14-16; Section 3, Chapter 8, Pages 97-106, Student Journal Pages 23-24; Section 4, Chapter 11, Pages 137-142; Section 5, Chapter 15, Pages 181-190, Student Journal Pages 40-43; Section 6, Chapter 19, Pages 229-238, Student Journal Pages 50-53; Section 7, Chapter 21, Pages 257-264, Student</p>

<p>Using examples to demonstrate that scientific ideas are used to explain previous observations (<i>for example, experimentation, collecting specimens, constructing models, researching scientific literature</i>);</p>	<p>Journal Pages 61-63;</p> <p>Using examples to demonstrate that scientific ideas are used to explain previous observations is a common practice for students using the SCIS 3+ program. This usually appears as part of the “<i>Invention</i>” phase of the Learning Cycle. Some specific examples are in the following levels:</p> <p><b>Energy Source, Level Five:</b> Section 2, Chapter 5, Pages 49-59, Student Journal Pages 12-14; Chapter 7, Pages 69-79, Student Journal Pages 17; Section 3, Chapter 9, Pages 87-95, Student Journal Pages 24-25;</p> <p><b>Communities, Level Five:</b> Section 2, Chapter 6, Pages 61-68, Student Journal Pages 10-11; Section 3, Chapter 13, Pages 137-150, Student Journal Pages 26-29, Chapter 14, Pages 159-168, Student Journal Pages 32-33; Section 5, Chapter 15, Pages 169-177, Student Journal Page 34; Section 5, Chapter 16, Pages 188-192, Student Journal Page 37</p> <p><b>Scientific Theories, Level Six:</b> Section 2, Chapter 6, Pages 69-78, Student Journal Pages 14-16; Section 4, Chapter 11, Pages 137-142; Section 5, Chapter 15, Pages 181-190, Student Journal Pages 40-43; Section 6, Chapter 18, Pages 219-228, Student Journal Page 49;</p> <p><b>Ecosystems, Level Six:</b> Section 1, Chapter 5, Pages 51-56, Student Journal Pages 7-8; Section 2, Chapter 9, Pages 87-94, Student Journal Pages 15-18; Section 3, Chapter 14, Pages 135-144, Student Journal Pages 26-28; Section 5, Chapter 21, Pages 217-227, Student Journal Page 21;</p>
<p>Asking questions and stating hypotheses that lead to different types of scientific</p>	<p>Asking questions and stating hypotheses that lead to different types of scientific</p>

investigations (*for example, experimentation, collecting specimens, constructing models, researching scientific literature*);

investigations is a process that students use throughout the SCIS 3+ program. Some specific examples are in the following levels:

**Energy Source, Level Five:** Section 1, Chapter 2, Pages 19-26, Student Journal Pages 2-3; Section 2, Chapter 4, Pages 43-47, Student Journal Pages 10-11, Chapter 6, Pages 61-68, Student Journal Pages 15-16, Chapter 7, Pages 69-79, Student Journal Pages 17; Section 4, Chapter 14, Pages 159-168, Student Journal Pages 34-35, Chapter 15, Pages 169-177, Student Journal Page 36; Section 5, Chapter 16, Pages 188-192, Student Journal Page 39; Chapter 17, Pages 193-199, Student Journal Page 40-41, Chapter 18, Pages 201-205, Student Journal Pages 42-43

**Communities, Level Five:** Section 2, Chapter 6, Pages 61-68, Student Journal Pages 10-11, Section 2, Chapter 7, Pages 69-79, Student Journal Pages 12-15; Section 3, Chapter 10, Pages, 105-115, Student Journal Page 20, Chapter 11, Pages, 117-122, Student Journal Pages 21-22; Section 6, Chapter 19, Pages 207-214, Student Journal Pages 41-45

**Scientific Theories, Level Six:** Section 1, Chapter 2, Pages 29-36, Student Journal Pages 2-3, Chapter 3, Pages 37-46, Student Journal Pages 4-8; Section 2, Chapter 4, Pages 55-60, Student Journal Page 11; Chapter 6, Pages 69-78, Student Journal Pages 14-16; Section 4, Chapter 13, Pages 155-166, Student Journal Pages 32-35; Section 5, Chapter 14, Pages 173-180, Student Journal Pages 38-39; Section 6, Chapter 19, Pages 229-238, Student Journal Pages 50-53

	<p><b>Ecosystems, Level Six:</b> Section 2, Chapter 6, Pages 65-73, Student Journal Page 11, Chapter 7, Pages 75-80, Student Journal Page 12, Chapter 8, Pages 81-85, Student Journal Page 14, Chapter 9, Pages 87-94, Student Journal Pages 15-18; Section 3, Chapter 11, Pages 111-116, Student Journal Page 2, Chapter 14, Pages 135-144, Student Journal Pages 26-28, Chapter 15, Pages 141-152, Student Journal Pages 29-30; Chapter 15, Pages 141-152, Student Journal Pages 29-30</p>
<p>Creating a written plan for an investigation;</p>	<p>Creating a written plan for an investigation is a common practice for students using the SCIS 3+ program. These are typically found on the Student Journal Pages. Some specific examples are in the following levels:</p> <p><b>Energy Source, Level Five:</b> Section 1, Chapter 1, Pages 13-18, Student Journal Page 1, Chapter 2, Pages 19-26, Student Journal Pages 2-3, Chapter 3, Pages 27-34, Student Journal Pages 4-7, Section 2, Chapter 7, Pages 69-79, Student Journal Pages 17, Chapter 8, Pages 81-85, Student Journal Page 23; Section 3, Chapter 11, Pages 117-122, Student Journal Page 28; Section 4, Chapter 13, Pages 137-150, Student Journal Page 32, Chapter 15, Pages 169-177, Student Journal Page 36, Chapter 18, Pages 201-205, Student Journal Page 43;</p> <p><b>Communities, Level Five:</b> Section 3, Chapter 10, Pages, 105-115, Student Journal Page 20, Chapter 11, Pages, 117-122, Student Journal Pages 21-22;</p> <p><b>Scientific Theories, Level Six:</b> Section 1, Chapter 2, Pages 29-36, Student Journal Page 2; Section 4, Chapter 10, Pages 127-136, Student Journal Pages 29-30, Chapter 13, Pages 155-166, Student Journal Pages 32-34;</p>

	<p><b>Ecosystems, Level Six:</b> Section 2, Chapter 6, Pages 65-73, Student Journal Page 11, Chapter 9, Pages 87-94, Student Journal Page 15; Section 3, Chapter 11, Pages 111-116, Student Journal Page 21.</p>
<p>Using appropriate tools, technologies, and measurement units to gather and organize data;</p>	<p>Multiple <i>tools and measurement units to gather data</i> in science investigations are included at every grade level. Some of the following devices and metric measurements are used at the subsequent grade levels</p> <p><b>Level Five</b> (<i>Communities and Energy Sources</i>): Charts (Growth in the Dark Graph, Growth in the Light Graph, Growth of Seed Parts Graph) Magnifiers, 13 Dram vials, Charts (Temperature Graph, Thermometer) Low and Medium Range Color Cards, Flasks, Number Line strips (0-50) Metric Measuring Tape, Thermicon Cars, Dual Scale and Celsius Thermometers, and Calibrated vials.</p> <p><b>Level Six</b> (<i>Ecosystems and Scientific Theories</i>) Droppers, Thermometers (Celsius), Vials (13-dram) , Magnetic compasses, Electroscale Cards and Pointers, Plastic lenses, Magnifiers, Number Line Strip (0-35) and Vials (13 dram)</p>
<p>Interpreting and evaluating data in order to formulate conclusions;</p>	<p>Interpreting and evaluating data in order to formulate conclusions are processes that students follow throughout the SCIS 3+ program. Evidence of explanations is most obvious on the Student Journal pages. Some specific examples are in the following levels:</p> <p><b>Energy Source, Level Five:</b> Section 1, Chapter 1, Pages 13-18, Student Journal Page 1, Chapter 3, Pages 27-34, Student Journal Pages 4-7, Section 3, Chapter 9, Pages 87-95, Student Journal Pages 24-25 Section 4, Chapter 13, Pages 137-</p>

	<p>150, Student Journal Pages 32-33, Chapter 15, Pages 169-177, Student Journal Page 36; Section 5, Chapter 16, Pages 188-192, Student Journal Page 39, Chapter 20, Pages 215-224, Student Journal Pages 45-46.</p> <p><b>Communities, Level Five:</b> Section 1, Chapter 1, Pages 13-18, Student Journal Pages 1-2; Section 2, Chapter 7, Pages 69-79, Student Journal Pages 12-15; Section 3, Chapter 10, Pages, 105-115, Student Journal Page 20, Chapter 12, Pages 123-134, Student Journal Pages 24-25; Section 5, Chapter 15, Pages 169-177, Student Journal Page 34;</p> <p><b>Scientific Theories, Level Six:</b> Section 1, Chapter 2, Pages 29-36, Student Journal Pages 2-3; Section 2, Chapter 6, Pages 69-78, Student Journal Pages 14-16; Section 3, Chapter 8, Pages 97-106, Student Journal Pages 23-24, Chapter 10, Pages 127-136, Student Journal Page 30, Chapter 13, Pages 155-166, Student Journal Page 33; Section 5, Chapter 15, Pages 181-190, Student Journal Pages 42-43; Chapter 16, Pages 191-200, Student Journal Page 45</p> <p><b>Ecosystems, Level Six:</b> Section 1, Chapter 3, Pages 31-43, Student Journal Page 5; Section 2, Chapter 6, Pages 65-73, Student Journal Page 11, Chapter 8, Pages 81-85, Student Journal Page 14, Chapter 9, Pages 87-94, Student Journal Page 15; Section 3, Chapter 11, Pages 111-116, Student Journal Page 21, Chapter 13, Pages 125-134, Student Journal Pages 23-25, Chapter 14, Pages 135-144, Student Journal Pages 26-28.</p>
<p>Communicating results of their investigations in appropriate ways (for example, written reports, graphic displays, oral presentations);</p>	<p>Communicating results of investigations in appropriate ways is a process that students use throughout the SCIS 3+ program. Evidence of these is typically found in the Student Journal. Some</p>

specific examples are in the following levels:

**Energy Source, Level Five:** Section 1, Chapter 1, Pages 13-18, Student Journal Page 1, Chapter 3, Pages 27-34, Student Journal Pages 4-7, Section 2, Chapter 7, Pages 69-79, Student Journal Pages 17; Section 3, Chapter 9, Pages 87-95, Student Journal Pages 24-25 Section 4, Chapter 10, Pages 105-115, Student Journal Pages 26-27, Chapter 13, Pages 137-150, Student Journal Pages 32-33, Section 4, Chapter 14, Pages 159-168, Student Journal Pages 34-35, Chapter 15, Pages 169-177, Student Journal Page 36; Section 5, Chapter 16, Pages 188-192, Student Journal Page 39, Chapter 17, Pages 193-199, Student Journal Page 40-41 Chapter 20, Pages 215-224, Student Journal Pages 45-46.

**Communities, Level Five:** Section 1, Chapter 1, Pages 13-18, Student Journal Pages 1-2; Section 2, Chapter 5, Pages 49-59, Student Journal Pages 8-9, Chapter 7, Pages 69-79, Student Journal Pages 12-15; Section 3, , Chapter 9, Pages, 87-95, Student Journal Page 17, Chapter 10, Pages, 105-115, Student Journal Page 20, Chapter 11, Pages, 117-122, Student Journal Pages 21-22 , Chapter 12, Pages 123-134, Student Journal Pages 24-25; Section 5, Chapter 15, Pages 169-177, Student Journal Page 34; Section 5, Chapter 20, Pages 215-224, Student Journal Pages 46-48

**Scientific Theories, Level Six:** Section 1, Chapter 2, Pages 29-36, Student Journal Pages 2-3; Section 2, Chapter 6, Pages 69-78, Student Journal Pages 14-16; Section 3, Chapter 7, Pages 89-96, Student Journal Pages 19-22, Chapter 8, Pages 97-106, Student Journal Pages 23-24, Chapter 10, Pages 127-136,

	<p>Student Journal Page 30, Chapter 13, Pages 155-166, Student Journal Page 33; Section 4, Chapter 12, Pages 143-154, Student Journal Page 31; Chapter 13, Pages 155-166, Student Journal Pages 32-35; Section 5, Chapter 15, Pages 181-190, Student Journal Pages 42-43; Chapter 16, Pages 191-200, Student Journal Page 45; Section 6, Chapter 19, Pages 229-238, Student Journal Pages 50-53;</p> <p><b>Ecosystems, Level Six:</b> Section 1, Chapter 2, Pages 25-30, Student Journal Page 3, Chapter 3, Pages 31-43, Student Journal Page 5, Chapter 4, Pages 45-49, Student Journal Pages 7-8; Section 2, Chapter 6, Pages 65-73, Student Journal Page 11, Chapter 8, Pages 81-85, Student Journal Page 14, Chapter 9, Pages 87-94, Student Journal Page 15; Section 3, Chapter 11, Pages 111-116, Student Journal Page 21, Chapter 13, Pages 125-134, Student Journal Pages 23-25, Chapter 14, Pages 135-144, Student Journal Pages 26-28; Section 5, Chapter 19, Pages 199-208, Student Journal Page 38.</p>
<p>Using metric units in measuring, calculating, and reporting results;</p>	<p>Students use metric units in measuring, calculating and reporting results is a common procedure used by students throughout the SCIS 3+ program. Some specific examples are in the following levels:</p> <p><b>Energy Source, Level Five:</b> Section 3, Chapter 8, Pages 81-85, Student Journal Pages 20-23, Chapter 9, Pages 87-95, Student Journal Pages 24-25, Chapter 12, Pages 123-134, Student Journal Pages 29; Chapter 13, Pages 137-150, Student Journal Pages 32-33; Section 5, Chapter 16, Pages 188-192, Student Journal Page 39, Chapter 17, Pages 193-199, Student Journal Page 40-41, Chapter 18, Pages 201-205, Student</p>

	<p>Journal Pages 42-43; Section 5, Chapter 20, Pages 215-224, Student Journal Pages 45-46</p> <p><b>Communities, Level Five:</b> Section 2, Chapter 5, Pages 49-59, Student Journal Pages 8-9, Chapter 6, Pages 61-68, Student Journal Pages 10-11; Section 3, Chapter 11, Pages, 117-122, Student Journal Pages 21-22;</p> <p><b>Ecosystems, Level Six:</b> Section 2, Chapter 7, Pages 69-79, Student Journal Pages 12-15</p>
<p>Explaining that scientific investigations sometimes result in unexpected findings that lead to new questions and more investigations; and</p>	<p>Explaining that scientific investigations sometimes result in unexpected findings, which lead to new questions. At this point, Students in SCIS 3 + are encouraged to design their own investigation. Some specific examples are in the following levels:</p> <p><b>Energy Source, Level Five:</b> Section 1, Chapter 3, Pages 27-34, Student Journal Pages 4-7; Section 2, Chapter 4, Pages 43-47, Student Journal Pages 10-11</p> <p><b>Scientific Theories, Level Six:</b> Section 1, Chapter 1, Pages 17-28, Student Journal Page 1, Chapter 2, Pages 29-36, Student Journal Pages 2-3</p> <p><b>Ecosystems, Level Six:</b> Section 3, Chapter 11, Pages 111-116, Student Journal Page 21; Section 2, Chapter 6, Pages 65-73, Student Journal Page 11, Section 2, Chapter 9, Pages 87-94, Student Journal Pages 15-18</p>

Giving examples of how collaboration can be useful in solving scientific problems and sharing findings.

Collaborative groups are an integral part of investigative learning throughout the SCIS 3+ program. The most obvious examples of this practice are found in the *Materials* Section of every lesson noted as “For Each Team of Two”, “For Each Team of Four” or occasionally “For Each Team of Eight”.

**Standard Two:**

Physical Science: Students know and understand common properties, forms, and changes in matter and energy. (*Focus: Physics and Chemistry*)

<p align="center"><b>Substandard 2.1</b>  <b>Students know that matter has characteristic properties, which are related to its composition and structure.</b></p>	<p align="center"><b>SCIS 3+</b></p>
<p>Examining, describing, comparing, measuring, and classifying objects based on common physical and chemical properties (<i>for example, states of matter, mass, volume, electrical charge, temperature, density, boiling points, pH, magnetism, solubility</i>),</p>	<p><b>Energy Sources, Level Five:</b> Section 1, Chapter 1, Pages 13-18, Student Journal Page 1, and Science, Technology &amp; Society, Page, 27, Chapter 2, Pages 19-26, Student Journal Pages 2-3, Section 2, Chapter 7, Pages 69-79, Student Journal Pages 17; Section 3, Chapter 8, Pages 81-85, Student Journal Pages 20-23, Chapter 9, Pages 87-95, Student Journal Pages 24-25; Section 5, Chapter 16, Pages 188-192, Student Journal Page39; Section 5, Chapter 18, Pages 201-205, Student Journal Pages 42-43, Chapter 20, Pages 215-224, Student Journal Pages 45-46;</p> <p><b>Scientific Theories, Level Six:</b> Section 1, Chapter 1, Pages 17-28, Student Journal Page 1, Chapter 3, Pages 37-46, Student Journal Pages 4-8; Section 2, Chapter 4, Pages 55-60, Student Journal Page 11; Section 3, Chapter 7, Pages 89-96, Student Journal Pages 19-22, Chapter 8, Pages 97-106, Student Journal Pages 23-24, Chapter 9, Pages 107-114, Student Journal Pages 25-26, Chapter 10, Pages 127-136, Student Journal Pages 29-30; Section 4, Chapter 12, Pages 143-154, Student Journal Page 31, Chapter 13, Pages 155-166, Student Journal Pages 32-35; Section 5, Chapter 15, Pages 181-190, Student Journal Pages 40-43</p>
<p>Separating mixtures of substances based on their properties (<i>for example, solubility, boiling points, magnetic properties, densities</i>);</p>	
<p>Classifying and describing matter in terms of</p>	

<p>elements, compounds, mixtures, atoms, and molecules (<i>for example, copper is an element, water is a compound, air is a mixture</i>); and</p>	
<p>Developing simple models to explain observed properties of matter (<i>for example, using a particle model to account for the solubility of a substance</i>).</p>	<p><b>Energy Sources, Level Five:</b> Section 5, Chapter 20, Pages 215-224, Student Journal Pages 45-46</p> <p><b>Scientific Theories, Level Six:</b> Section 1, Chapter 3, Pages 37-46, Student Journal Pages 4-8; Section 2, Chapter 6, Pages 69-78, Student Journal Pages 14-16; Section 3, Chapter 8, Pages 97-106, Student Journal Pages 23-24; , Chapter 9, Pages 107-114, Student Journal Pages 25-26; Section 4, Chapter 13, Pages 155-166, Student Journal Pages 32-35, Chapter 14, Pages 173-180, Student Journal Pages 38-39, Chapter 16, Pages 191-200, Student Journal Pages 44-45; Section 6, Chapter 20, Pages 239-248, Student Journal Pages 54-58</p>
<p><b>Substandard 2.2</b> <b>Students know that energy appears in different forms, and can move (be transferred) and changed (be transformed).</b></p>	<p><b>SCIS 3+</b></p>
<p>Measuring quantities associated with energy forms (<i>for example, temperature, mass, speed, distance, electrical charge, current, voltage</i>); and</p>	<p><b>Energy Sources, Level Five:</b> Section 2, Chapter 4, Pages 43-47, Student Journal Pages 10-11, Chapter 5, Pages 49-59, Student Journal Pages 12-14, Chapter 6, Pages 61-68, Student Journal Pages 15-16, Chapter 7, Pages 69-79, Student Journal Pages 17; Section 2, Chapter 4, Pages 43-47, Student Journal Pages 10-11, Chapter 5, Pages 49-59, Student Journal Pages 12-14, Chapter 6, Pages 61-68, Student Journal Pages 15-16, Chapter 7, Pages 69-79, Student Journal Pages 17; Section 3, Chapter 8, Pages 81-85, Student Journal Pages 20-23, Chapter 9, Pages 87-95, Student Journal Pages 24-25, Chapter 10, Pages 105-115, Student Journal Pages 26-27, Chapter 11, Pages 117-122, Student Journal Page 28; Section 4, Chapter 13,</p>

	<p>Pages 137-150, Student Journal Pages 32-33, Chapter 14, Pages 159-168, Student Journal Pages 34-35, Chapter 15, Pages 169-177, Student Journal Page 36; Section 5, Chapter 16, Pages 188-192, Student Journal Page 39, Chapter 17, Pages 193-199, Student Journal Page 40-41;</p>
<p>Describing qualitative and quantitative relationships, using data and observations and graphs, associated with energy transfer or energy transformation (<i>for example, speed of objects vs. height of ramp; length of string vs. pitch of sound; electrical current vs. volume of gas produced in electrolysis, with length of time kept constant.</i>)</p>	<p><b>Energy Sources, Level Five:</b> Section 2, Chapter 4, Pages 43-47, Student Journal Pages 10-11, Chapter 5, Pages 49-59, Student Journal Pages 12-14, Chapter 6, Pages 61-68, Student Journal Pages 15-16, Chapter 7, Pages 69-79, Student Journal Pages 17; Section 2, Chapter 4, Pages 43-47, Student Journal Pages 10-11, Chapter 5, Pages 49-59, Student Journal Pages 12-14, Chapter 6, Pages 61-68, Student Journal Pages 15-16, Chapter 7, Pages 69-79, Student Journal Pages 17; Section 3, Chapter 8, Pages 81-85, Student Journal Pages 20-23, Chapter 9, Pages 87-95, Student Journal Pages 24-25, Chapter 10, Pages 105-115, Student Journal Pages 26-27, Chapter 11, Pages 117-122, Student Journal Page 28; Section 4, Chapter 13, Pages 137-150, Student Journal Pages 32-33, Chapter 14, Pages 159-168, Student Journal Pages 34-35, Chapter 15, Pages 169-177, Student Journal Page 36; Section 5, Chapter 16, Pages 188-192, Student Journal Page 39, Chapter 17, Pages 193-199, Student Journal Page 40-41;</p> <p><b>Scientific Theories, Level Six:</b> Section 1, Chapter 1, Pages 17-28, Student Journal Page 1; Section 2, Chapter 4, Pages 55-60, Student Journal Page 11; Section 3, Chapter 10, Pages 127-136, Student Journal Pages 29-30; Section 4, Chapter 13, Pages 155-166, Student Journal Pages 32-35; Section 5, Chapter 14, Pages 173-180, Student Journal Pages 38-39, Chapter 16, Pages 191-</p>

	200, Student Journal Pages 44-45; Section 6, Chapter 19, Pages 229-238, Student Journal Page 53.
<b>Substandard 2.3</b> <b><i>Students understand that interactions can produce changes in a system, although the total quantities of matter and energy remain unchanged.</i></b>	<b>SCIS 3+</b>
Identifying and classifying factors causing change within a system ( <i>for example, force, light heat</i> );	<p><b>Energy Sources, Level Five:</b> Section 1, Chapter 2, Pages 19-26, Student Journal Pages 2-3; Chapter 3, Pages 27-34, Student Journal Pages 4-7; Section 2, Chapter 5, Pages 49-59, Student Journal Pages 12-14, Chapter 6, Pages 61-68, Student Journal Pages 15-16, Chapter 7, Pages 69-79, Student Journal Pages 17; Section 3, Chapter 9, Pages 87-95, Student Journal Pages 24-25 Chapter 10, Pages 105-115, Student Journal Pages 26-27, Chapter 11, Pages 117-122, Student Journal Page 28; Section 4, Chapter 14, Pages 159-168, Student Journal Pages 34-35, Chapter 15, Pages 169-177, Student Journal Page 36; Section 5, Chapter 16, Pages 188-192, Student Journal Page 39, Chapter 17, Pages 193-199, Student Journal Page 40-41, Chapter 18, Pages 201-205, Student Journal Pages 42-43, Chapter 19, Pages 207-214, Student Journal Page 44</p> <p><b>Scientific Theories, Level Six:</b> Section 1, Chapter 2, Pages 29-36, Student Journal Pages 2-3; Section 2, Chapter 4, Pages 55-60, Student Journal Page 11, Chapter 6, Pages 69-78, Student Journal Pages 14-16; Section 3, Chapter 7, Pages 89-96, Student Journal Page 21, Chapter 10, Pages 127-136, Student Journal Page 29; Section 4, Chapter 13, Pages 155-166, Student Journal Pages 32-35, Chapter 14, Pages 173-180, Student Journal Pages 38-39, Chapter 16, Pages 191-200, Student Journal Page 45; Section 6, Chapter 17, Pages</p>

	211-218, Student Journal Page 48, Chapter 19, Pages 229-238, Student Journal Pages 50-52
Identifying and predicting what will change and what will remain unchanged when matter experiences an external force or energy change ( <i>for example, boiling a liquid; comparing the force, distance, and work involved in simple machines</i> );	<p><b>Energy Sources, Level Five:</b> Section 1, Chapter 2, Pages 19-26, Student Journal Pages 2-3; Section 2, Chapter 5, Pages 49-59, Student Journal Pages 12-14; Section 3, Chapter 8, Pages 81-85, Student Journal Pages 20-23;</p> <p><b>Scientific Theories, Level Six:</b> Section 1, Chapter 2, Pages 29-36, Student Journal Page 2, Chapter 3, Pages 37-46, Student Journal Pages 5-7; Section 2, Chapter 6, Pages 69-78, Student Journal Pages 15-16; Section 3, Chapter 8, Pages 97-106, Student Journal Page 24, Chapter 9, Pages 107-114, Student Journal Page 25; Section 4, Chapter 13, Pages 155-166, Student Journal Pages 33-35; Section 5, Chapter 14, Pages 173-180, Student Journal Pages 38-39, Chapter 15, Pages 181-190, Student Journal Pages 40-43</p>
Observing and gathering data to support the concept of conservation of mass within a closed system ( <i>for example, temperature, change, mass change, specific heat</i> );	<p><b>Energy Sources, Level Five:</b> Section 1, Chapter 2, Pages 19-26, Student Journal Pages 2-3; Section 3, Chapter 8, Pages 81-85, Student Journal Pages 20-23; Section 3, Chapter 9, Pages 87-95, Student Journal Pages 24-25, Chapter 10, Pages 105-115, Student Journal Pages 26-27, Chapter 11, Pages 117-122, Student Journal Page 28, Chapter 12, Pages 123-134, Student Journal Pages 29; Section 5, Chapter 16, Pages 188-192, Student Journal Page 39, Chapter 17, Pages 193-199, Student Journal Page 40-41, Chapter 18, Pages 201-205, Student Journal Pages 42-43</p> <p><b>Scientific Theories, Level Six:</b> Section 1, Chapter 2, Pages 29-36, Student Journal Pages 2-3.</p>
Describing, measuring ( <i>for example, temperature, mass, volume, melting point of a substance</i> ) and calculating quantities	<b>Energy Sources, Level Five:</b> Section 3, Chapter 9, Pages 87-95, Student Journal Pages 24-25, Chapter 10, Pages 105-

<p>before and after a chemical or physical change within a system (<i>for example, temperature change, mass change, specific heat</i>); and</p>	<p>115, Student Journal Pages 26-27, Chapter 11, Pages 117-122, Student Journal Page 28, Chapter 12, Pages 123-134, Student Journal Pages 29;</p> <p><b>Scientific Theories, Level Six:</b> Section 4, Chapter 13, Pages 155-166, Student Journal Pages 32-35; Section 5, Chapter 14, Pages 173-180, Student Journal Pages 38-39, Chapter 16, Pages 191-200, Student Journal Pages 44-45</p>
<p>Describing, measuring (<i>for example, time, distance, mass, force</i>) and calculating quantities that characterize moving objects and their interactions within a system (<i>for example, force, velocity, acceleration, potential energy, kinetic energy</i>).</p>	<p><b>Energy Sources, Level Five:</b> Section 1, Chapter 1, Pages 13-18, Student Journal Page 1, Chapter 2, Pages 19-26, Student Journal Pages 2-3, Chapter 3, Pages 27-34, Student Journal Pages 4-7; Section 4, Chapter 13, Pages 137-150, Student Journal Pages 32-33, Chapter 14, Pages 159-168, Student Journal Pages 34-35, Chapter 15, Pages 169-177, Student Journal Page 36; Section 5, Chapter 19, Pages 207-214, Student Journal Page 44</p> <p><b>Scientific Theories, Level Six:</b> Section 1, Chapter 2, Pages 29-36, Student Journal Pages 2-3</p>

**Standard Three:**

Life Science: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment. (*Focus: Biology—Anatomy, Physiology, Botany, Zoology, Ecology*)

<p><b>Substandard 3.1</b> <b>Students know and understand the characteristics of living things, the diversity of life, and how living things interact with each other and with the environment.</b></p>	<p><b>SCIS 3+</b></p>
<p>Constructing and using classification systems based on the structure of organisms;</p>	<p><b>Communities, Level Five:</b> Section 3, Chapter 13, Pages 137-150, Student Journal Pages 26-29, Science, Technology and Society, Page 13</p>
<p>Describing the importance of plant and animal adaptations, including local examples;</p>	<p><b>Communities, Level Five:</b> Section 2, Chapter 5, Pages 49-59, Student Journal Pages 8-9</p>
<p>Creating and interpreting food chains and webs;</p>	<p><b>Communities, Level Five:</b> Section 3, Chapter 10, Pages, 105-115, Student Journal Page 20, Chapter 11, Pages, 117-122, Student Journal Pages 21-22, Chapter 12, Pages 123-134, Student Journal Pages 24-25, Chapter 13, Pages 137-150, Student Journal Pages 26-29 Assessment 151, <i>Science, Technology and Society</i>, Page 150; Section 5, Chapter 17, Pages 193-199; Chapter 19, Pages 207-214, Student Journal Pages 41-45; Assessment Page 225</p> <p><b>Ecosystems, Level Six,</b> Section 1, Chapter 3, Pages 31-43, Student Journal Pages 4-6, Chapter 4, Pages 45-49, Student Journal Pages 7-8</p>
<p>Explaining the interaction and interdependence of nonliving and living components within ecosystems; and</p>	<p><b>Communities, Level Five:</b> Section 1, Chapter 1, Pages 13-18, Student Journal Pages 1-2; Section 2, Chapter 7, Pages 69-79, Student Journal Pages 12-15; Section 5, Chapter 17, Pages 193-199, Chapter 19, Pages 207-214, Student Journal Pages 41-45</p> <p><b>Ecosystems, Level Six:</b> Section 3,</p>

	Chapter 13, Pages 125-134, Student Journal Pages 23-25, Chapter 14, Pages 135-144, Student Journal Pages 26-28, Chapter 15, Pages 141-152, Student Journal Pages 29-30, Assessment Page 153; Section 4, Chapter 16, Pages 163-169, Chapter 17, Pages 171-178, Student Journal Pages 31-33, Chapter 18, Pages 179-186, Student Journal Pages 34-35, Chapters 16-18, Pages 163-186; Assessment Page 187
Describing how an environment's ability to provide food, water, space, and essential nutrients determines carrying capacity.	<b>Communities, Level Five:</b> Section 3, Chapter 12, Pages 123-134, Student Journal Pages 24-25, Chapter 13, Pages 137-150, Student Journal Pages 26-29; Section 5, Chapter 16, Pages 188-192, Student Journal Page 37  <b>Ecosystems, Level Six:</b> Section 1, Chapter 4, Pages 45-49, Student Journal Pages 7- 8
<b><i>Substandard 3.2</i></b> <b><i>Students know and understand interrelationships of matter and energy in living systems.</i></b>	<b>SCIS 3+</b>
Describing the basic processes of photosynthesis and respiration and their importance to life ( <i>for example, set up a terrarium or aquarium and make changes such as blocking out light</i> );	<b>Communities, Level Five:</b> Section 2, Chapter 6, Pages 61-68, Student Journal Pages 10-11  <b>Ecosystems, Level Six:</b> , Section 3, Chapter 13, Pages 125-134, Student Journal Pages 23-25, Chapter 14, Pages 135-144, Student Journal Pages 26-28, Chapter 15, Pages 141-152, Student Journal Pages 29-30Section 3, Assessment Page 153
Comparing and contrasting food webs within and between different ecosystems ( <i>for example, grasslands, tundra, marine</i> ) and predicting the consequences of disrupting one of the organisms in a food web;	<b>Communities, Level Five:</b> Section 3, Chapter 12, Pages 123-134, Student Journal Pages 24-25, Chapter 13, Pages 137-150, Student Journal Pages 26-29; Section 5, Chapter 15, Pages 169-177, Student Journal Page 34 Section 5, Chapter 16, Pages 188-192, Student Journal Page 37, Chapter 17, Pages 193-199, Chapter 18, Pages 201-205, Student Journal Pages 38-40,

	<p>Chapter 19, Pages 207-214, Student Journal Pages 41-45, Chapter 20, Pages 215-224, Student Journal Pages 46-48</p> <p><b>Ecosystems, Level Six:</b>, Section 1, Chapter 4, Pages 45-49, Student Journal Pages 7-8  Section 1, Chapter 5, Pages 51-56, Student Journal Pages 7; Section 5, Chapter 21, Pages 217-227, Student Journal Page 21, Chapter 22, Pages 229-137, Student Journal Page 22</p>
<p>Describing ways (<i>for example, digestion, transport of nutrients by circulatory system</i>) that multicellular organisms get food and other matter to their cells;</p>	
<p>Explaining the recycling of materials by determining a pathway of a substance that is important for life (<i>for example, trace water through an ecosystem</i>); and</p>	<p><b>Ecosystems, Level Six:</b>, Section 2, Chapter 6-9, Pages 65-94, Assessment, Page 95; Section 3, Chapters 13-15, Pages 125-152, Assessment Page 153; Section 4, Chapters 16 -18, Pages 163-186</p>
<p>Describing the role of organisms in the decomposition and recycling of dead organisms (<i>for example, bacteria's role in the decomposition and recycling of matter from a dead animal</i>).</p>	<p><b>Communities, Level Five:</b> Section 4, Chapter 14, Pages 159-168, Student Journal Pages 32-33; Section 5, Chapter 15, Pages 169-177, Student Journal Page 34, Assessment Page 179, <i>Science, Technology and Society</i>, Page 168;</p> <p><b>Ecosystems, Level Six:</b>, Section 4, Chapter 16, Pages 163-169, Chapter 17, Pages 171-178, Student Journal Pages 31-33</p>
<p><b>Substandard 3.3</b>  <b><i>Students know and understand how the human body functions, factors that influence its structures and functions, and how these structures and functions compare with those of other organisms.</i></b></p>	<p><b>SCIS 3+</b></p>
<p>Describing the observable components and functions of a cell (<i>for example, cell membrane, nucleus, cytoplasm, chloroplasts; ;movement of molecules into and out of cells</i>);</p>	
<p>Comparing and contrasting the basic</p>	

structures and functions of different types of cells ( <i>for example, single-celled organisms in pond water, Elodea, onion cell, human cheek cell</i> );	
Describing the growth and development of several organisms ( <i>for example, embryonic development of a vertebrate</i> );	<b>Communities, Level Five:</b> Section 1, Chapter 2, Pages 19-26, Student Journal Page 3; Section 2, Chapter 4, Pages 43-47, Student Journal Page 7, Chapter 5, Pages 49-59, Student Journal Pages 8-9, Chapter 6, Pages 61-68, Student Journal Pages 10-11
Describing the structures and functions of human body systems; and	
Describing and giving examples of noncommunicable diseases and communicable diseases ( <i>for example, heart disease and chicken pox</i> ).	
<b>Substandard 3.4</b> <b><i>Students know and understand how organisms change over time in terms of biological evolution and genetics.</i></b>	<b>SCIS 3+</b>
Describing the purpose of body cell division and sex cell division;	
Describing the role of chromosomes and genes in heredity ( <i>for example, genes control traits, while chromosomes are made up of many genes</i> ); and	
Describing evidence that reveals changes or constancy in groups of organisms over geologic time.	

**Standard Four:**

Earth and Space Science: Students know and understand the processes and interactions of Earth’s systems and the structure and dynamics of Earth and other objects in space. (*Focus: Geology, Meteorology, Astronomy, and Oceanography*)

<p align="center"><b>Substandard 4.1</b> <b>Students know and understand the composition of Earth, its history, and the natural processes that shape it.</b></p>	<p align="center"><b>SCIS 3+</b></p>
<p>Explaining how minerals, rocks, and soils form:</p>	<p><b>Ecosystems, Level Six:</b> Section 4, Chapter 16, Pages 163-169</p>
<p>Explaining how fossils are formed and used as evidence to indicate that life has changed through time;</p>	
<p>Modeling natural processes that shape Earth’s surface (<i>for example, weathering, erosion, mountain building, volcanic activity</i>); and</p>	<p><b>Scientific Theories Level Six::</b> Section 7, Chapter 24, Pages 285-294, Student Journal Pages 71-75</p>
<p>Explaining the distribution and causes of natural events (<i>for example, earthquakes, volcanoes, landslides</i>).</p>	<p><b>Scientific Theories, Level Six::</b> Section 7, Chapter 21, Pages 257-264, Student Journal Pages 61-63, Chapter 22, Pages 265-272, Student Journal Pages 64-68, Chapter 23, Pages 273-284, Student Journal Pages 69-70, Chapter 24, Pages 285-294, Student Journal Pages 71-75, Assessment, Page 303</p>
<p align="center"><b>Substandard 4.2</b> <b>Students know and understand the general characteristics of the atmosphere and fundamental processes of weather</b></p>	<p align="center"><b>SCIS 3+</b></p>
<p>Describing the basic composition, properties, and structure of the atmosphere (<i>for example, the range and distribution of temperature and pressure in the troposphere and stratosphere</i>);</p>	<p><b>Ecosystems, Level Six::</b> Section 2, Chapter 9, Pages 87-94, Student Journal Pages 15-18</p>
<p>Observing, measuring, and recording changes in weather conditions (<i>for example, humidity, temperature, air pressure, cloud types, wind precipitation</i>);</p>	
<p>Explaining how atmospheric circulation is driven by solar heating (<i>for example, the transfer of energy by radiation, convection, conduction</i>); and</p>	<p><b>Energy Sources, Level Five:</b> Section 5, Chapter 16, Pages 188-192, Student Journal Page 39, Chapter 17, Pages 193-199, Student Journal Page 40-41, Chapter 19, Pages 207-214, Student Journal Page 44, Chapter 20, Pages 215-</p>

	224, Student Journal Pages 45-46  <b>Ecosystems, Level Six:</b> Section 4, Chapter 17, Pages 171-178, Student Journal Pages 31-33
Describing large-scale and local weather systems ( <i>for example, fronts, air masses, storms</i> ).	
<b>Substandard 4.3</b> <b>Students know major sources of water, its uses, importance, and cyclic patterns of movement through the environment.</b>	<b>SCIS 3+</b>
Investigating and comparing the properties and behavior of water in its solid, liquid, and gaseous states;	<b>Energy Sources, Level Five:</b> Section 3, Chapter 9, Pages 87-95, Student Journal Pages 24-25, Chapter 10, Pages 105-115, Student Journal Pages 26-27, Chapter 11, Pages 117-122, Student Journal Page 28, Chapter 12, Pages 123-134, Student Journal Pages 29  <b>Ecosystems:</b> Section 4, Chapter 17, Pages 171-178, Student Journal Pages 31-33
Describing the distribution and circulation of the world's water through oceans, glaciers, rivers, groundwater, and atmosphere; and	
Describing the composition and physical characteristics of oceans <i>for example, currents, waves, features of the ocean floor, salinity</i> ).	
<b>Substandard 4.4</b> <b>Students know the structure of the solar system, composition and interactions of objects in the universe, and how space is explored.</b>	<b>SCIS 3+</b>
Describing the basic components, composition, size, and theories of origin of the solar system;	<b>See Relative Position and Motion, Level 4</b>
Explaining the effects of relative motion and positions of the Sun Earth, and Moon ( <i>for example, seasons, eclipses, moon phases, tides</i> );	<b>See Relative Position and Motion, Level 4</b>
Comparing Earth to other planets (for example, size, composition, relative distance from the sun); and	
Identifying technology needed to explore	

space (for example, telescope, spectroscopes, spacecraft, life support systems).	
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**Standard Five:**

Students know and understand the interrelationships among science, technology, and human activity and how they can affect the world:

<p><b>Substandard</b> <b>As students in grades 5-8 extend their knowledge, what they know and are able to do includes</b></p>	<p><b>SCIS 3+</b></p>
<p><i>Investigating and describing the extent of human uses of renewable and non-renewable resources (for example, forests, fossil fuels);</i></p>	<p><b>Energy Sources, Level Five:</b> Section 4, Chapter 15, Pages 169-177, Student Journal Page 36</p> <p><b>Communities, Level Five:</b> Section 1, Chapter 1, Pages 13-18, Student Journal Pages 1-2</p> <p><b>Ecosystems, Level Six:</b> Section 4, Chapter 18, Pages 179-186, Student Journal Pages 34-35</p>
<p><i>Describing advantages and disadvantages that might accompany the introduction of a new technology for example mountain bikes, cellular telephones, pagers);</i></p>	<p><b>Energy Sources, Level Five:</b> Section 5, Chapter 20, Pages 215-224, Student Journal Pages 45-46</p> <p><b>Scientific Theories, Level Six:</b> Section 4, Chapter 13, Pages 155-166, Student Journal Pages 32-35</p> <p><b>Ecosystems, Level Six:</b> Section 4, Chapter 18, Pages 179-186, Student Journal Pages 34-35</p>
<p><i>Describing how the use of technology can help solve an individual or community problem (for example, using catalytic converters on automobiles to help reduce air pollution), and</i></p>	<p><b>Energy Sources, Level Five:</b> Section 2, Chapter 5, Pages 49-59, Student Journal Pages 8-9; Section 3, Chapter 11, Pages 117-122, Student Journal Pages 21-22; Section 5, Chapter 15, Pages 169-177, Student Journal Page 34, Chapter 17, Pages 193-199, Chapter 18, Pages 201-205, Student Journal Pages 38-40, Chapter 19, Pages 207-214, Student Journal Pages 41-45, Chapter 20, Pages 215-224, Student Journal Pages 46-48</p> <p><b>Scientific Theories, Level Six:</b> Section 2, Chapter 6, Pages 69-78, Student Journal Pages 14-16; Section 4, Chapter 13, Pages 155-166, Student Journal</p>

	<p>Pages 32-35</p> <p><b>Ecosystems Level Six:</b> Section 4, Chapter 18, Pages 179-186, Student Journal Pages 34-35; Section 5, Chapter 22, Pages 229-137, Student Journal Page 22</p>
<p><i>Describing how people use science and technology in their professions.</i></p>	<p><b>Communities, Level Five:</b> Section 1, Chapter 3, Pages 27-34, Student Journal Pages 4-5; Section 5, Chapter 15, Pages 169-177, Student Journal Pages 35-36</p> <p><b>Scientific Theories, Level Six:</b> Section 2, Chapter 6, Pages 69-78, Student Journal Pages 14-16; Section 3, Chapter 9, Pages 107-114, Student Journal Pages 27-28; Section 6, Chapter 20, Pages 239-248, Student Journal Pages 59-60;</p> <p><b>Ecosystems, Level Six:</b> Section 5, Chapter 22, Pages 229-137, Student Journal Page 22</p>

**Standard Six:**

Students understand that science involves a particular way of knowing and understand common connections among scientific disciplines.

<p><b>Substandard</b> <b><i>As students in grades 5-8 extend their know-ledge, what they know and are able to do includes</i></b></p>	<p><b>SCIS 3+</b></p>
<p>Explaining why a controlled experiment must have comparable results when repeated;</p>	<p><b>Energy Sources, Level Five:</b> Section 1, Chapter 2, Pages 19-26, Student Journal Pages 2-3; Section 2, Chapter 4, Pages 43-47, Student Journal Pages 10-11; Section 3, Chapter 10, Pages 105-115, Student Journal Pages 26-27; Section 4, Chapter 15, Pages 169-177, Student Journal Page 36; Section 5, Chapter 17, Pages 193-199, Student Journal Page 40-41, Chapter 18, Pages 201-205, Student Journal Pages 42-43, Chapter 19, Pages 207-214, Student Journal Page 44</p> <p><b>Communities, Level Five:</b> Section 2, Chapter 5, Pages 49-59, Student Journal Pages 8-9</p> <p><b>Scientific Theories, Level Six:</b> Section 5, Chapter 16, Pages 191-200, Student Journal Pages 44-45</p> <p><b>Ecosystems, Level Six:</b> Section 3, Chapter 13, Pages 125-134, Student Journal Pages 23-25; Section 5, Chapter 21, Pages 217-227, Student Journal Page 21</p>
<p>Giving examples of how scientific knowledge changes as new knowledge is acquired and previous ideas are modified (<i>for example, through space exploration</i>);</p>	<p><b>Energy Sources:</b> Section 3, Chapter 11, Pages 117-122, Student Journal Page 28; Section 5, Chapter 18, Pages 201-205, Student Journal Pages 42-43, Chapter 19, Pages 207-214, Student Journal Page 44</p> <p><b>Communities, Level Five:</b> Section 1, Chapter 3, Pages 27-34, Student Journal Pages 4-5;</p>

	<p><b>Scientific Theories, Level Six:</b> Section 2, Chapter 6, Pages 69-78, Student Journal Pages 14-16; Section 6, Chapter 20, Pages 239-248, Student Journal Pages 59-60; Section 7, Chapter 22, Pages 265-272, Student Journal Pages 64-68</p>
Describing contributions to the advancement of science made by people in different cultures and at different times in history;	<p><b>Scientific Theories, Level Six:</b> Section 7, Chapter 21, Pages 257-264, Student Journal Pages 61-63, Chapter 22, Pages 265-272, Student Journal Pages 64-68</p>
Identifying, comparing, and predicting variables and conditions related to change ( <i>for example, climate, population, motion</i> );	<p><b>Energy Sources, Level Five:</b> Section 5, Chapter 17, Pages 193-199, Student Journal Page 40-41, Chapter 20, Pages 215-224, Student Journal Pages 45-46</p> <p><b>Communities, Level Five:</b> Section 3, Chapter 13, Pages 137-150, Student Journal Pages 26-29; Section 4, Chapter 14, Pages 159-168, Student Journal Pages 32-33; Section 5, Chapter 16, Pages 188-192, Student Journal Page 37; Section 5, Chapter 18, Pages 201-205, Student Journal Pages 38-40</p> <p><b>Scientific Theories, Level Six:</b> Section 1, Chapter 2, Pages 29-36, Student Journal Pages 2-3, Section 2, Chapter 6, Pages 69-78, Student Journal Pages 14-16; Section 7, Chapter 24, Pages 285-294, Student Journal Pages 71-75</p> <p><b>Ecosystems, Level Six:</b> Section 3, Chapter 10, Pages 105-110, Chapter 12, Pages 117-123, Student Journal Page 22, Chapter 13, Pages 125-134, Student Journal Pages 23-25, Chapter 14, Pages 135-144, Student Journal Pages 26-28</p>
Identifying and illustrating natural cycles within systems ( <i>for example, water, planetary motion, geological changes, climate</i> ) and	<p><b>Communities, Level Five:</b> Section 4, Chapter 14, Pages 159-168, Student Journal Pages 34-3, Chapter 15, Pages 169-177, Student Journal Page 36; Section 5, Chapter 16, Pages 188-192, Student Journal Page 3, Chapter 17, Pages 193-199, Student Journal Page 40-41</p>

	<p><b>Ecosystems, Level Five:</b> Section 2, Chapter 9, Pages 87-94, Student Journal Pages 15-18; Section 3, Chapter 14, Pages 135-144, Student Journal Pages 26-28, Chapter 15, Pages 141-152, Student Journal Pages 29-30; Section 4, Chapter 16, Pages 163-169,</p>
<p>Using a model to predict change (<i>for example, computer simulation, video sequence, stream table</i>).</p>	<p><b>Energy Sources, Level Five:</b> Section 5, Chapter 20, Pages 215-224, Student Journal Pages 45-46</p> <p><b>Communities, Level Five:</b> Section 2, Chapter 8, Pages 81-85, Student Journal Page 16; Section 3, Chapter 12, Pages 123-134, Student Journal Pages 24-25</p> <p><b>Scientific Theories, Level Six:</b> Section 5, Chapter 16, Pages 191-200, Student Journal Pages 44-45; Section 6, Chapter 20, Pages 239-248, Student Journal Pages 54-58; Section 7, Chapter 24, Pages 285-294, Student Journal Pages 71-75</p> <p><b>Ecosystems, Level Six:</b> Section 1, Chapter 1, Pages 15-23, Student Journal Pages 1-2, Chapter 4, Pages 45-49, Student Journal Pages 7-8; Section 2, Chapter 9, Pages 87-94, Student Journal Pages 15-18; Section 3, Chapter 15, Pages 141-152, Student Journal Pages 29-30;</p>