

**2017 STANDARDS ALIGNMENT  
FLORIDA DEPARTMENT OF EDUCATION  
INSTRUCTIONAL MATERIALS  
COURSE STANDARDS/BENCHMARKS (Form IM7)**

**SUBJECT:** Science  
**GRADE:** 7  
**LEVEL:** 2  
**COURSE TITLE:** M/J Life Science  
**COURSE CODE:** 2000010  
**SUBMISSION TITLE:** *Issues and Life Science, Second Edition*  
**BID ID:** 3359  
**PUBLISHER:** Lab-Aids  
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\* \* \* **USERNAME:** SEPULife **PASSWORD:** Florida - the first time you link to the activity you will need to login to access the material \* \* \*

BENCHMARK CODE	BENCHMARK	LESSONS WHERE BENCHMARK IS DIRECTLY ADDRESSED IN-DEPTH IN MAJOR TOOL (Include the student edition and teacher edition with the page numbers of lesson, a link to lesson, or other identifier for easy lookup by reviewers.)
Select references to evidence of alignment have been linked. Non-linked activities may also be referenced if needed.		
SC.6.L.14.1	Describe and identify patterns in the hierarchical organization of organisms from atoms to molecules and cells to tissues to organs to organ systems to organisms.	IALS <a href="#">12</a> <sup>1</sup> , <a href="#">42</a> (see for example, <a href="#">C-57</a> ).
SC.6.L.14.2	Investigate and explain the components of the scientific theory of cells (cell theory): all organisms are composed of cells (single-celled or multicellular), all cells come from preexisting cells, and cells are the basic unit of life.	IALS <a href="#">37</a> , <a href="#">42</a>

<sup>1</sup> Activity references are linked to the *Teacher's Edition* unless otherwise specified. While specific evidence of alignment may be *within* the activity, links are connected to the first page of the lesson to provide context. Reviewers may find it helpful to simultaneously reference the same activity number in the [Student Book](#).

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SC.6.L.14.3	Recognize and explore how cells of all organisms undergo similar processes to maintain homeostasis, including extracting energy from food, getting rid of waste, and reproducing.	IALS 39, 41, <a href="#">42</a>
SC.6.L.14.4	Compare and contrast the structure and function of major organelles of plant and animal cells, including cell wall, cell membrane, nucleus, cytoplasm, chloroplasts, mitochondria, and vacuoles.	IALS 40, <a href="#">42</a>
SC.6.L.14.5	Identify and investigate the general functions of the major systems of the human body (digestive, respiratory, circulatory, reproductive, excretory, immune, nervous, and musculoskeletal) and describe ways these systems interact with each other to maintain homeostasis.	IALS 5, <a href="#">6</a> , 11, <a href="#">12</a> , <a href="#">13-15</a> , <a href="#">16-18</a> , <a href="#">21-23</a> , 24, 27, 28.
SC.6.L.14.6	Compare and contrast types of infectious agents that may infect the human body, including viruses, bacteria, fungi, and parasites.	IALS 30, <a href="#">31</a> (see for example SS 31.1, 31.2), 32-34, 37, 38, <a href="#">43</a> , <a href="#">45 (SS 45.1)</a> , 47-52.
SC.6.L.15.1	Analyze and describe how and why organisms are classified according to shared characteristics with emphasis on the Linnaean system combined with the concept of Domains.	IALS 44, <a href="#">45</a> , <a href="#">75</a>
SC.7.L.15.1	Recognize that fossil evidence is consistent with the scientific theory of evolution that living things evolved from earlier species.	IALS <a href="#">98</a> , <a href="#">99</a>
SC.7.L.15.2	Explore the scientific theory of evolution by recognizing and explaining ways in which genetic variation and environmental factors contribute to evolution by natural selection and diversity of organisms.	IALS <a href="#">94</a> , <a href="#">95</a> , <a href="#">96</a> , <a href="#">97</a> , 100
SC.7.L.15.3	Explore the scientific theory of evolution by relating how the inability of a species to adapt within a changing environment may contribute to the extinction	IALS <a href="#">98</a> , 99, 100, <a href="#">101</a>

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	of that species.	
SC.7.L.16.1	Understand and explain that every organism requires a set of instructions that specifies its traits, that this hereditary information (DNA) contains genes located in the chromosomes of each cell, and that heredity is the passage of these instructions from one generation to another.	IALS <a href="#">58</a> , <a href="#">59</a> , 60, <a href="#">63</a> - 65.
SC.7.L.16.2	Determine the probabilities for genotype and phenotype combinations using Punnett Squares and pedigrees.	IALS 59, <a href="#">61</a> , <a href="#">66</a>
SC.7.L.16.3	Compare and contrast the general processes of sexual reproduction requiring meiosis and asexual reproduction requiring mitosis.	IALS <a href="#">57</a>
SC.7.L.16.4	Recognize and explore the impact of biotechnology (cloning, genetic engineering, artificial selection) on the individual, society and the environment.	IALS 56, <a href="#">57</a> , 64, <a href="#">67</a> , 69, 70, <a href="#">71</a>
SC.7.L.17.1	Explain and illustrate the roles of and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.	IALS 78, <a href="#">79</a> , <a href="#">80</a> , <a href="#">81</a> , 86
SC.7.L.17.2	Compare and contrast the relationships among organisms such as mutualism, predation, parasitism, competition, and commensalism.	IALS 72, <a href="#">73</a> , 77, 80, <a href="#">84</a>
SC.7.L.17.3	Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.	IALS <a href="#">72</a> , <a href="#">73</a> , 84, 85, <a href="#">87</a>
SC.8.L.18.1	Describe and investigate the process of photosynthesis, such as the roles of light, carbon dioxide, water and chlorophyll; production of food; release of oxygen.	IALS 42, <a href="#">81</a> , 82
SC.8.L.18.2	Describe and investigate how cellular respiration breaks down food to provide energy and releases	IALS <a href="#">39</a> , 41

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	carbon dioxide.	
SC.8.L.18.3	Construct a scientific model of the carbon cycle to show how matter and energy are continuously transferred within and between organisms and their physical environment.	IALS <a href="#">79 (SS 79.2)</a> , 80
SC.8.L.18.4	Cite evidence that living systems follow the Law of Conservation of Mass and Energy.	IALS <a href="#">79 (SS 79.2)</a> , 80
SC.7.N.1.1	Define a problem from the seventh grade curriculum, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigation of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.	IALS 5, <a href="#">8</a> , 14, 48, 62, <a href="#">64</a> , <a href="#">81</a> , 83
SC.7.N.1.2	Differentiate replication (by others) from repetition (multiple trials).	IALS 3, <a href="#">5</a> , <a href="#">8</a> , 59, 62
SC.7.N.1.3	Distinguish between an experiment (which must involve the identification and control of variables) and other forms of scientific investigation and explain that not all scientific knowledge is derived from experimentation.	IALS <a href="#">37 (SS 37.2)</a> , 58, 69, See also <a href="#">Student Science Skills Sheet 8, What is Science?</a>
SC.7.N.1.4	Identify test variables (independent variables) and outcome variables (dependent variables) in an experiment.	IALS 3, 5, 8, <sup>2</sup> 14, 22, 27, 32, <a href="#">37</a> (see also <a href="#">SS 37.2</a> ), 48, 62, 77, 96 See also TR - <a href="#">Science Skill Sheet 4c, Interpreting Graphs</a>
SC.7.N.1.5	Describe the methods used in the pursuit of a scientific explanation as seen in different fields of science such as biology, geology, and physics.	See TR - <a href="#">Science Skills Student Sheet 8, IALS 108</a> See also IALS <a href="#">16</a> and <a href="#">93</a>

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SC.7.N.1.6	Explain that empirical evidence is the cumulative body of observations of a natural phenomenon on which scientific explanations are based.	IALS <a href="#">37</a> , <a href="#">50</a> (see AQ 2), 94  See also TR- <a href="#">Student Science Skills Sheet 8, What is Science?</a>
SC.7.N.1.7	Explain that scientific knowledge is the result of a great deal of debate and confirmation within the science community.	IALS <a href="#">37</a> , 60, <a href="#">94</a> , 97
SC.7.N.2.1	Identify an instance from the history of science in which scientific knowledge has changed when new evidence or new interpretations are encountered.	IALS <a href="#">37</a> , 60, <a href="#">94</a> , 97
SC.7.N.3.1	Recognize and explain the difference between theories and laws and give several examples of scientific theories and the evidence that supports them.	IALS <a href="#">37</a> (see also <a href="#">Student Sheet 37.1</a> ), <a href="#">94</a> . See also <a href="#">Student Science Skills Sheet 8, What is Science?</a>
SC.7.N.3.2	Identify the benefits and limitations of the use of scientific models.	SEPUP has several modeling type activities in IALS, most of which call for students to evaluate the use of the model in terms of its strengths and weaknesses. See for example 18, <a href="#">24</a> , <a href="#">30</a> , 40, 41, 51, 58, 69, 84, <a href="#">95</a> , <a href="#">96</a>
LAFS.6.SL.1.2	Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.	See for example Media Literacy, <a href="#">Student Sheet 1e</a> in the TR <sup>3</sup> media viewing and computer simulations (e.g., <a href="#">2</a> , 33, <a href="#">50</a> , 56).
LAFS.6.SL.1.3	Delineate a speaker’s argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.	Student progress in this area is assessed using the Recognizing Evidence (RE) scoring guide ( <a href="#">TR pg. 136</a> ) and the Organizing Scientific Ideas (SI) scoring guide ( <a href="#">TR pg. 137</a> ).  Activities that show this skill include IALS <a href="#">2 (AQ2b<sup>4</sup>)</a> , 3, 4, 5, 9, 10, 18, 24, <a href="#">32 (AQ 2)</a> , 34, 36, 39, 47, 49, 53, <a href="#">70 (AQ 2)</a> , 71, 74, 79, 86, 88, 106, 109.

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<sup>4</sup> These activities specifically reference the Analysis Questions (AQ) located near the end of the activity set. The link connects to the first page in the lesson but the additional AQ references should be noted.

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		See also Media Literacy, <a href="#">Student Sheet 1e in the TR</a> .
LAFS.6.SL.1.1a	Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.	<p>SEPUP supports these student behaviors with activities and assessment procedures that support claims w/evidence arguments, recognizing evidence versus opinion and using evidence to make educated decisions that require trade-offs. These are described in more detail in <a href="#">TR<sup>5</sup> pg. 133</a>, the Recognizing Evidence (RE) and Evidence and Trade-offs (ET) scoring guides can be found on <a href="#">TR pg. 136</a>. Analysis questions (AQ) for each lesson begin with lower level cognitive demand items (recall, comprehend) and move to higher levels (analyze, synthesize, evaluate).</p> <p>The following activities call for students to produce writing samples scored with the RE and ET scoring guides: IALS – 2 (AQ 2b), <a href="#">3 (AQ 1)</a>, 9 (AQ 3), <a href="#">10 (AQ 3)</a>, 32 (AQ 2), 34 (AQ 4)...</p> <p>ET: IALS - 9 (AQ 3), 10 (AQ 3), 20 (AQ 5), <a href="#">29 (AQ 2)</a>, 32 (AQ 5), 34 (AQ 4).</p> <p>See also <a href="#">Issue-Oriented Science, 4-2-1 Model, SEPUP Approaches to Address Conceptual Development and Change, Facilitating Group Interaction, 71 (AQ 1-3<sup>6</sup>)</a>, 88 (AQ 1, 3).</p>
LAFS.6.SL.1.1b	Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.	SEPUP supports these student and teacher behaviors with

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		<p>clear expectations for students using the program, see for example the <a href="#">“4-2-1 approach”</a>, <a href="#">“Getting Started With SEPUP”</a>, <a href="#">“Checklist for inquiry-based science”</a> and the <a href="#">“SEPUP Implementation Continuum”</a> (provides observable criteria for low, mid, and high functioning classrooms). See also <a href="#">Develop a plan for materials management and cleanup</a>, <a href="#">Facilitating Group Discussion</a>.</p>
LAFS.6.SL.1.1c	<p>Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.</p>	<p>SEPUP’s “Talking It Over” type activities call for students to discuss the outcomes and meaning of information gained from preceding labs and investigations; see for example:</p> <ul style="list-style-type: none"> <li>● IALS <a href="#">10</a>, <a href="#">34</a>, 52, 72, 87, 89, 101, 108.</li> <li>● Activities using “Discussion Webs” (<a href="#">10</a>, <a href="#">29</a>, 34, 49, 53, 67, 71, 72, 87, 88, 89, 101).</li> <li>● <a href="#">A Consistent Approach to Individual and Cooperative Learning</a>, <a href="#">Facilitating Group Discussion</a>, <a href="#">Questions and the learning environment</a>, <a href="#">Inter-Act Discussion Strategy</a>, especially for Activities <a href="#">9</a>, <a href="#">49</a>, and <a href="#">72</a>.</li> </ul>
LAFS.6.SL.1.1d	<p>Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.</p>	<p>SEPUP’s “Listen, Stop Write” activities (see for example <a href="#">4</a> <a href="#">34</a>) gives students practice in paraphrasing. This is also typically done in end-of-unit activities, such as IALS 71, “Should We?” where students discuss perspectives of different stakeholders in South America in a decision dealing with uniting children with their biological parents.</p> <p><a href="#">Discussion Webs</a> (Student sheets <a href="#">10.2</a>, <a href="#">29.2</a>, 34.1, 49.2, 53.5) and <a href="#">Intra-Acts</a> (Student sheets <a href="#">9.2</a>, <a href="#">49.1</a>, 72.1). Most Role Play activity types have instances of paraphrasing in the scripts; see for example IALS <a href="#">11</a>, <a href="#">49</a>, 94). See also <i>Walking Debates</i> for the following Activities: <a href="#">67</a>, <a href="#">71</a>, and 89. Paraphrasing is found</p>

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		in Role Play Activities, see for example IALS <a href="#">20</a> , 49, and 94 and Analysis Questions for IALS <a href="#">10 (AQ<sup>7</sup> 5)</a> , <a href="#">29 (AQ 1-2)</a> , and 71 (AQ 1-3).
LAFS.6.SL.2.4	Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.	<p>SEPUP has activities and assessment scoring guides designed to support communicating scientific information, including oral speaking skills such as enunciation, projection, and eye contact, as well as the ability to logically organize arguments and evidence related to a problem.</p> <ul style="list-style-type: none"> <li>● Guidelines for <a href="#">Oral Presentations</a> (TR pg. 86).</li> <li>● “Talking it Over” activities, IALS 10, 34, <a href="#">52</a>, 67, <a href="#">71</a>, 72, 87, 89, <a href="#">101</a>.</li> <li>● Discussion Webs IALS <a href="#">Student Sheets 10.2</a>, 29.2, 34.1, <a href="#">49.2</a>, 53.5, 67.1, 71.2, <a href="#">72.2</a>, 87.2, 88.1, SS <a href="#">89.2</a>, 101.2.</li> <li>● Walking Debates, IALS <a href="#">67.1</a>.</li> <li>● <a href="#">Communication Skills</a> support for assessment on TR<sup>8</sup> pg. 137.</li> <li>● Examples of Communication Skills (CS) prompts: IALS <a href="#">71 (AQ<sup>9</sup> 2)</a>.</li> </ul>
LAFS.6.SL.2.5	Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.	Besides using print-based sources, SEPUP uses nontraditional formats such as media viewing and computer simulations (see for example IALS <a href="#">2</a> , 33, <a href="#">50</a> , 56). We also have many online videos of the labs themselves using our online LABsent <sup>®</sup> program. See for example, LABsent <a href="#">Activity 16: Support</a>

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		<a href="#">System: Bones Joints, and Muscles, Activity 35: A License to Learn</a> , and <a href="#">Activity 83: A Suitable Habitat</a> .
LAFS.68.RST.1.1	Cite specific textual evidence to support analysis of science and technical texts.	<p>SEPUP has a well-developed approach to supporting literacy that includes analysis of technical texts. See, for example, the <a href="#">SEPUP approach to literacy</a> in the TR<sup>10</sup> pg. 6, and the following strategies:</p> <ul style="list-style-type: none"> <li>● <i>Readings with embedded “stop-to think” (STT) strategy:</i> 6, 7, 15, 23, 28, <a href="#">42</a>, 45, <a href="#">57</a>, <a href="#">63</a>, 79, 85, 97, 103.</li> <li>● <i>Three level reading guides:</i> Student Sheets 11.1, <a href="#">25.2</a>, 57.1, <a href="#">83.1</a>, 89.1, 101.1</li> <li>● <i>Anticipation guides:</i> Student Sheets <a href="#">1.1</a>, 16.1, 17.1, 30.2, <a href="#">45.1</a>, 51.1, 77.2, 97.1.</li> </ul>
LAFS.68.RST.1.2	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.	<p>SEPUP has a well-developed approach to supporting literacy that includes determining central ideas and conclusions, as well as summarizing informational texts. See, for example, the <a href="#">SEPUP approach to literacy</a> (TR pg. 75), and the following strategies:</p> <p><i>Readings with embedded “stop-to think” (STT) strategy:</i> IALS – 6, 7, 15, 23, 28, <a href="#">42</a>, <a href="#">45</a>, 57, 63, <a href="#">79</a>, 85, 97, 103. Three-level Reading Guides are used to analyze literal, interpretive, and applied levels of understanding of texts: See for example, IALS Student Sheets 11.1, <a href="#">25.2</a>, 57.1, 83.1, 89.1, <a href="#">101.1</a>.</p> <p><i>Directed Activities Related to Text:</i> IALS – Student Sheets 2.2, 12.1, 23.1, 25.1, <a href="#">28.1</a>, 66.1, <a href="#">87.1</a>, <a href="#">94.1</a>, 98.1.</p>
LAFS.68.RST.1.3	Follow precisely a multistep procedure when carrying	SEPUP has ten distinct and different activity types, including

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	out experiments, taking measurements, or performing technical tasks.	labs and investigations (similar approaches but using less “wet” equipment). See for example all “laboratory” type activities: IALS – 5, 8, 14, <a href="#">16</a> , 17, 19, 22, 27, 35, <a href="#">36</a> , 38, 39, 43, 47, 55, 62, 64, 70, 78, 80-83, 90, 106.
LAFS.68.RST.2.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.	Key terms and vocabulary words and phrases are introduced in context as described in the <a href="#">TR<sup>11</sup> pg. 6</a> and <a href="#">pg. 91</a> , and in the support for literacy in TR-II, p. 75. The TR introduces new words and phrases in bold representing first time use, so teachers can plan effectively. Pedigrees and their symbols are introduced in IALS <a href="#">66</a> .
LAFS.68.RST.2.5	Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.	SEPUP has a well-developed approach to supporting literacy that includes analysis of text. See, for example, the <a href="#">SEPUP approach to literacy</a> (TR pg. 75), and the following strategies:  The Three-level Reading Guide (TLRG) is a built-in literacy strategy in SEPUP that helps students analyze the author’s intent. The Guide contains a series of statements from the three levels of understanding: <i>literal</i> , <i>interpretive</i> , and <i>applied</i> . Literal statements guide the student to look for ideas that are explicitly presented in the reading, in some cases using identical words or phrases. Interpretive statements require students to process information and recognize ideas that are often implicit. Applied statements have multiple correct interpretations and often relate the factual information in the reading to everyday life and may be used as the basis of a class discussion.

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		A template for this strategy can be found on <a href="#">Literacy Student Sheet 3</a> in the <i>Teacher’s Resources</i> <sup>12</sup> , and TLRG can be found in IALS Student Sheets 11.1, <a href="#">25.2</a> , <a href="#">57.1</a> , 83.1, 89.1, 101.1.
LAFS.68.RST.2.6	Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.	<a href="#">Three-Level Reading Guides</a> (TR pg. 81) are used to infer the author’s purpose and to predict meanings not stated explicitly. See for example: IALS Student Sheets <a href="#">11.1</a> , <a href="#">25.2</a> , 57.1, 83.1, 89.1, 101.1. See also <a href="#">Writing Review</a> (TR pg. 83) and IALS <a href="#">10</a> , 15, 32, 67, 89.
LAFS.68.RST.3.7	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).	SEPUP has a well-developed approach to supporting literacy that includes communicating scientific information with supplementary visual formats. See, for example, the <a href="#">SEPUP approach to literacy</a> (TR pg. 75), and the following strategies: <ul style="list-style-type: none"> <li>● Concept Maps: IALS – <a href="#">86</a></li> <li>● Venn Diagrams: IALS – <a href="#">23</a>, <a href="#">38</a>, 43, 45, 57, 82,</li> <li>● Talking Drawings: IALS – <a href="#">15</a>, <a href="#">55</a>, 62, 64, 79</li> <li>● Makes/interprets graphs: IALS – <a href="#">3</a>, <a href="#">14</a>, 17, 19, 30, 51, 54, 72, 77, 79, 84, 85.</li> </ul>
LAFS.68.RST.3.8	Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.	<i>Discussion Webs</i> are graphic organizers that help students arrange evidence they have gathered primarily from readings. <a href="#">Literacy Student Sheet 6</a> in the TR provides a template for this strategy. Discussion webs support students in engaging with information from text and other sources and then with each other to come to an evidence-based conclusion. Any question or issue that involves two viewpoints or more than one potentially acceptable answer can be explored using this strategy. See for example <a href="#">TR pg. 85</a> and Student Sheets 10.2, 29.2, 34.1, 49.2, 53.5, 67.1, 71.2, <a href="#">72.2</a> , 87.2, 88.1, <a href="#">89.2</a> , 101.2.

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LAFS.68.RST.3.9	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.	SEPUP features 10 different activity types to support different student learning styles. Some of these are text-based, such as readings and role plays, and some involve direct experience/hands on learning such as labs, and still others involve other modalities, such as view/reflect or discussions. All provide support for students to experience more than one way to learn. See for example, <a href="#">SEPUP Supports Multiple Learning Styles</a> . See also LABsent for Activities <a href="#">40</a> and <a href="#">41</a> .
LAFS.68.WHST.1.1	Write arguments focused on discipline-specific content. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. Establish and maintain a formal style. Provide a concluding statement or section that follows from and supports the argument presented.	SEPUP has activities and assessment procedures that support claims w/evidence arguments, recognizing evidence versus opinion and using evidence to make educated decisions that require trade-offs. These are described in more detail in <a href="#">TR pg. 142-143</a> , the Recognizing Evidence (RE) and Evidence and Trade-offs (ET) scoring guides can be found on <a href="#">TR<sup>13</sup> pg. 136</a> .  The following activities call for students to produce writing samples scored with the RE and ET scoring guides: RE: IALS <a href="#">2 (AQ 2b<sup>14</sup>)</a> , 3 (AQ 1), 9 (AQ 3), 10 (AQ 3), <a href="#">32 (AQ 2)</a> , 34 (AQ 4). ET: IALS - 9 (AQ 3), <a href="#">10 (AQ 3)</a> , 20 (AQ 5), 29 (AQ 2), 32 (AQ 5), <a href="#">34 (AQ 4)</a> .
LAFS.68.WHST.1.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. Introduce a topic	The SEPUP program requires daily writing in the student science notebook for the purpose of documenting scientific procedures and experiments. See <a href="#">TR pg. 90</a> and Literacy

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<sup>14</sup> These activities specifically reference the Analysis Questions (AQ) located near the end of the activity set. Again, the link connects to the first page in the lesson but the additional AQ references should be noted.

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	<p>clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts. Use precise language and domain-specific vocabulary to inform about or explain the topic. Establish and maintain a formal style and objective tone. Provide a concluding statement or section that follows from and supports the information or explanation presented.</p>	<p>Student Sheets <a href="#">1a</a> and <a href="#">1b</a>.</p> <p>This writing is assessed from time to time using the Communicating Skills (CS) and Organizing Scientific Skills (SI) scoring guides, described on <a href="#">TR pg. 145-147</a>. Designing Investigations (DI) activity types call for students to write their own procedures.</p> <ul style="list-style-type: none"> <li>● Examples of SI prompts: IALS <a href="#">4 (AQ 8)</a>, <a href="#">5 (AQ 7)</a>, <a href="#">18 (AQ 5b)</a>.</li> <li>● Examples of CS prompts: IALS <a href="#">29</a>, <a href="#">31</a>, <a href="#">37 (Procedures)</a>.</li> <li>● Examples of DI prompts can be seen in the Procedures for IALS <a href="#">8</a>, <a href="#">14</a>, <a href="#">48</a>, <a href="#">64</a>.</li> </ul> <p>Three types of Writing Frames are provided, see the discussion on pp. <a href="#">TR<sup>15</sup> pg. 83</a> and Literacy Student Sheets <a href="#">4a</a>, <a href="#">4b</a>, <a href="#">4c</a>.</p> <p>Note the SEPUP Vocabulary Approach on <a href="#">TR pg. 6</a> and <a href="#">pg. 91</a>.</p>
LAFS.68.WHST.2.4	<p>Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	<p>The SEPUP program requires daily writing in the student science notebook for the purpose of documenting scientific procedures and experiments. See <a href="#">TR pg. 90</a> and Literacy Student Sheets <a href="#">1a</a> and <a href="#">1b</a>.</p> <p>This writing is assessed from time to time using the Communicating Skills (CS) and Organizing Scientific Skills (SI) scoring guides, described on <a href="#">TR pg. 145-147</a>. Designing Investigations (DI) activity types call for students to write their own procedures.</p>

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		<p>Examples of SI prompts: IALS <a href="#">36 (AQ 3<sup>16</sup>)</a>, <a href="#">39 (AQ 2)</a>, <a href="#">47 (AQ 3)</a>.  Examples of CS prompts: IALS <a href="#">53</a>, <a href="#">67</a>, <a href="#">71 (Procedures)</a>.  Examples of DI prompts can be seen in the Procedures for IALS <a href="#">81</a>, <a href="#">83</a>, <a href="#">104</a>.  Three types of Writing Frames are provided, see the discussion on <a href="#">TR pg. 83</a> and <a href="#">Literacy Student Sheets 4a, 4b, 4c</a>.  Note the SEPUP Vocabulary Approach on <a href="#">TR pg. 6</a> and <a href="#">pg. 91</a>.</p>
LAFS.68.WHST.2.5	With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.	<p>SEPUP has a well-developed approach to supporting literacy that includes analysis of text. See, for example, the SEPUP approach to literacy (<a href="#">TR<sup>17</sup> pg. 75</a>) and the following strategies:</p> <p><i>Writing Frame-</i> <a href="#">Literacy Student Sheets 4a, 4b, and 4c</a> which are used in several activities including IALS 10, 11, <a href="#">14</a>, 29, <a href="#">32</a>, 34, <a href="#">48</a>.  <i>Writing Review (used for peer review of writing samples)</i> –<a href="#">Literacy Student Sheet 5</a> which is used in IALS 10, 15, 32, 67, 72, 89.</p>
LAFS.68.WHST.2.6	Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.	See for example, TR - <a href="#">Student Literacy Sheet 12</a> , “Using Classroom Science Blogs.”
LAFS.68.WHST.3.7	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.	See for example IALS 29, <a href="#">31</a> , 71, <a href="#">73</a> .

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LAFS.68.WHST.3.8	Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.	See for example IALS <a href="#">Literacy Student Sheets 1d</a> and <a href="#">1e</a> . IALS: 2, 3, 9, 10, 29, <a href="#">31</a> , 71, <a href="#">73</a> .
LAFS.68.WHST.3.9	Draw evidence from informational texts to support analysis reflection, and research.	<p>Two of the distinct SEPUP activity types involve gathering information from informational texts:</p> <p>In “Reading” type activities, students extract important science content from passages of formal science writing. The concluding analysis items ask students to describe, explain, and reflect upon the information presented. See for example, IALS 5, 6, 7, 15, 23, <a href="#">25</a>, <a href="#">29</a></p> <p>In “Talking It Over” type activities, students read less formal text related to, and extending, topics covered by and observations made in, preceding labs and investigations. Students use this additional information and the accompanying analysis items to reflect upon and help analyze their previously acquired data. See for example, IALS <a href="#">10</a>, 34, 67, <a href="#">71</a></p> <p>Additionally, Three-level Reading Guides call for students to further analyze informational text, see for example IALS student sheets 11.1, 25.2, <a href="#">57.1</a>, <a href="#">83.1</a>, 89.1, 101.1.</p>
LAFS.68.WHST.4.10	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	The built-in literacy support in SEPUP supports short- and long-form student writing. A short summary of these strategies are provided here, and more information can be found in Section III of the Teacher’s Resources.

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		<ul style="list-style-type: none"> <li>Science Notebook Writing Guidelines. (<a href="#">Literacy Student Sheets 1a</a> and <a href="#">1b</a>). As with most science classes, students keep a science notebook throughout the IALS course, making entries per the instructions in the Student Book that ask them to record data, observations, hypotheses, conclusions, and other information. Keeping a notebook helps students process ideas, keep track of data, and build scientific observation and scientific writing skills.</li> </ul> <p><i>Writing Frame-</i> <a href="#">Literacy Student Sheets 4a, 4b, and 4c</a> which are used in several activities including IALS 10, 11, <a href="#">14</a>, 29, <a href="#">32</a>, 34, <a href="#">48</a></p> <p><i>Writing Review (used for peer review of writing samples)</i> –<a href="#">Literacy Student Sheet 5</a> which is used in IALS 10, 15, 32, 67, 72, 89.</p>
HE.6.C.1.8	Examine the likelihood of injury or illness if engaging in unhealthy/risky behaviors.	IALS <a href="#">11</a> , <a href="#">13 (AQ 3<sup>18</sup>)</a> , <a href="#">28 (AQ 2 and 4)</a> , 29 (AQ 1, 2).
MAFS.6.EE.3.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the	See also <a href="#">Science Skills Student Sheets 3a and 3b</a> , “Bar Graphing Checklist” and, <a href="#">Science Skills Student Sheets 4a and 4b</a> , “Scatterplot and Line Graphing Checklist.”

<sup>18</sup> These activities specifically reference the Analysis Questions (AQ) located near the end of the activity set. Again, the link connects to the first page in the lesson but the additional AQ references should be noted.

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	equation $d = 65t$ to represent the relationship between distance and time.	
MAFS.6.SP.2.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	The IALS program calls for students to use bar, histogram, scatterplot, and line graphs; see for example IALS 3, 8, 14, 17, 19, 22, 27, 30, 31, <a href="#">49</a> , 51, 54, <a href="#">77</a> , 84, 95, 96, 98.  See also <a href="#">Science Skills Student Sheets 3a and 3b</a> , “ <a href="#">Bar Graphing Checklist</a> ”, and <a href="#">Science Skills Student Sheets 4a and 4b</a> , “ <a href="#">Scatterplot and Line Graphing Checklist</a> ”, and <a href="#">Interpreting Line Graphs, Skill Sheet 4c</a> .
MAFS.6.SP.2.5	Summarize numerical data sets in relation to their context, such as by: Reporting the number of observations. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.	IALS <a href="#">8</a> , <a href="#">17</a> , <a href="#">77</a> . See <a href="#">TR<sup>19</sup> - Additional Resources, Working With Measures of Central Tendency</a> .
HE.7.C.1.3	Analyze how environmental factors affect personal health.	IALS <a href="#">48</a> , <a href="#">53</a> , 64
HE.7.C.1.7	Describe how heredity can affect personal health.	IALS <a href="#">56</a> , <a href="#">66</a>

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<p>ELD.K12.ELL.SC.1</p>	<p>English language learners communicate information, ideas and concepts necessary for academic success in the content area of Science.</p>	<p>SEPUP provides ELL students with rich opportunities for written and oral communication for social and instructional purposes at school. This is accomplished through the use of the following strategies:</p> <ul style="list-style-type: none"> <li>● The complete student book is presented also in Spanish language format.</li> <li>● Vocabulary is introduced with operational definitions that connect concepts to learning experiences (see <a href="#">TR pg. 91</a>).</li> <li>● 4-2-1 cooperative groupings encourage student interactions in an unthreatening environment (see <a href="#">TR pg. 52</a>).</li> <li>● Strategies for facilitating Group Discussion (see <a href="#">TR pg. 52</a>). This includes informal, pair talk and formal presentations.</li> <li>● Discussion Webs (<a href="#">TR pg. 85-86</a>), graphic organizers that help students think ahead about what they want to say about what they have done or read. As seen in IALS Student Sheets 10.2, <a href="#">29.2</a>, 34.1, 49.2, 53.5, 67.1, 71.2, <a href="#">72.2</a>, 87.2, 88.1, 89.2, 101.2.</li> <li>● Oral Presentation (<a href="#">TR pg. 86</a>), guidelines for formal oral communication.</li> </ul> <p>Walking Debates (<a href="#">TR pg. 87</a>), tools that allow students to express their opinions about issues by moving from one area of the room to another. As seen in IALS <a href="#">67</a>, <a href="#">71</a>, <a href="#">89</a>.</p>
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<p>ELD.K12.ELL.SI.1</p>	<p>English language learners communicate for social and instructional purposes within the school setting.</p>	<p>SEPUP provides ELL students with rich opportunities for written and oral communication for social and instructional purposes at school. This is accomplished through the use of the following strategies:</p> <ul style="list-style-type: none"> <li>● The complete student book is presented also in Spanish language format.</li> <li>● Vocabulary is introduced with operational definitions that connect concepts to learning experiences. (See <a href="#">TR<sup>21</sup> pg. 91</a>).</li> <li>● 4-2-1 cooperative groupings encourage student interactions in an unthreatening environment (see <a href="#">TR pg. 52</a>).</li> <li>● Strategies for facilitating Group Discussion (see <a href="#">TR pg. 52</a>). This includes informal, pair talk and formal presentations.</li> <li>● Discussion Webs (<a href="#">TR pg. 85-86</a>), graphic organizers that help students think ahead about what they want to say about what they have done or read. As seen in IALS Student Sheets 10.2, <a href="#">29.2</a>, 34.1, 49.2, 53.5, 67.1, 71.2, <a href="#">72.2</a>, 87.2, 88.1, 89.2, 101.2</li> <li>● Oral Presentation (<a href="#">TR pg. 86</a>), guidelines for formal oral communication.</li> <li>● Walking Debates (<a href="#">TR pg. 87</a>), tools that allow students to express their opinions about issues by moving from one area of the room to another. As seen in IALS <a href="#">67</a>, <a href="#">71</a>, <a href="#">89</a>.</li> </ul>
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SC.6.N.1.1	Define a problem from the sixth grade curriculum, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigation of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.	See for example, IALS 5, <a href="#">8</a> , 14, 48, 62, <a href="#">64</a> , <a href="#">81</a> , 83
SC.6.N.1.2	Explain why scientific investigations should be replicable.	See for example, IALS 3, <a href="#">5</a> , <a href="#">8</a> , 59, 62
SC.6.N.1.3	Explain the difference between an experiment and other types of scientific investigation, and explain the relative benefits and limitations of each.	SEPUP has ten different activity types, including laboratory type activities (e.g., IALS 5, 8, 16, <a href="#">17</a> , <a href="#">19</a> ...) as well as investigations (“dry labs”, e.g., IAL 12, <a href="#">44</a> , <a href="#">46</a> ...) and Modeling (emphasis on developing and using models (e.g., IALS 18, 21, <a href="#">24</a> , 40...), View and Reflect (e.g., IALS <a href="#">33</a> , 50), all of which combine to show how each contributes to scientific understanding and examines the benefits and limitations of each. (See also <a href="#">Student Science Skills Sheet 8, What is Science?</a> )

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SC.6.N.1.4	Discuss, compare, and negotiate methods used, results obtained, and explanations among groups of students conducting the same investigation.	Most laboratory and modeling type activities call for students to discuss and explain similar and different results noted in conducting the same investigation. See for example (IALS 5, <a href="#">8</a> , <a href="#">17</a> , 18, 24, 40, <a href="#">51</a> ...)
SC.6.N.1.5	Recognize that science involves creativity, not just in designing experiments, but also in creating explanations that fit evidence.	IALS 8, 31, 53, <a href="#">60</a> , <a href="#">85</a> , <a href="#">102</a> , <a href="#">104</a>
SC.6.N.2.1	Distinguish science from other activities involving thought.	See <a href="#">Student Science Skills Sheet 8, What is Science?</a>
SC.6.N.2.2	Explain that scientific knowledge is durable because it is open to change as new evidence or interpretations are encountered.	IALS <a href="#">37</a> , <a href="#">60</a> , <a href="#">94</a> See also <a href="#">Student Science Skills Sheet 8, What is Science?</a>
SC.6.N.2.3	Recognize that scientists who make contributions to scientific knowledge come from all kinds of backgrounds and possess varied talents, interests, and goals.	IALS <a href="#">102</a> , <a href="#">108</a> , and online support at <a href="http://www.sepuplhs.org/middle/ials/students/index.html#unitG">http://www.sepuplhs.org/middle/ials/students/index.html#unitG</a>

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SC.6.N.3.1	Recognize and explain that a scientific theory is a well-supported and widely accepted explanation of nature and is not simply a claim posed by an individual. Thus, the use of the term theory in science is very different than how it is used in everyday life.	IALS 1 ( <a href="#">SS 1.1</a> ), <a href="#">2</a> , 9, 36, <a href="#">37</a> , 50, 60, 89
SC.6.N.3.2	Recognize and explain that a scientific law is a description of a specific relationship under given conditions in the natural world. Thus, scientific laws are different from societal laws.	IALS <a href="#">60</a> , <a href="#">93</a>  See also <a href="#">Student Science Skills Sheet 8, What is Science?</a>
SC.6.N.3.3	Give several examples of scientific laws.	IALS <a href="#">60</a> (laws of inheritance) <a href="#">93</a> (law of superposition)
SC.6.N.3.4	Identify the role of models in the context of the sixth grade science benchmarks.	IALS 18, 21, <a href="#">40</a> , <a href="#">51</a> , 95, See also Statement on Teaching Evolution discussion of the role of models (TR 247-250)

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SC.8.N.1.1	Define a problem from the eighth grade curriculum using appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.	IALS 5, <a href="#">8</a> , 14, 48, 62, <a href="#">64</a> , <a href="#">81</a> , 83
SC.8.N.1.2	Design and conduct a study using repeated trials and replication.	IALS 1, ( <a href="#">SS 1.1b</a> ), 5, <a href="#">8</a> , <a href="#">17</a>
SC.8.N.1.3	Use phrases such as "results support" or "fail to support" in science, understanding that science does not offer conclusive 'proof' of a knowledge claim.	IALS 1 ( <a href="#">SS 1.1</a> ), <a href="#">2</a> , 4, <a href="#">62</a> , 69, 71, 77
SC.8.N.1.4	Explain how hypotheses are valuable if they lead to further investigations, even if they turn out not to be supported by the data.	IALS 1 (see for example <a href="#">SS 1.1b</a> ), 2, 5, <a href="#">7</a> , 83, 86, <a href="#">91</a> , <a href="#">95</a> , 97,

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SC.8.N.1.5	Analyze the methods used to develop a scientific explanation as seen in different fields of science.	IALS <a href="#">37</a> , 50
SC.8.N.1.6	Understand that scientific investigations involve the collection of relevant empirical evidence, the use of logical reasoning, and the application of imagination in devising hypotheses, predictions, explanations and models to make sense of the collected evidence.	<p>In all “Designing Investigation” activity types, students collect evidence, use logic and creativity to devise and test predictions and hypotheses, and make sense of the evidence. See for example, IALS <a href="#">5</a>, 14, 48, <a href="#">81</a>, <a href="#">83</a>, 104-105.</p> <p>SEPUP has ten different activity types, including MODELING, where students make and use models to understand results of their investigations. See for example, IALS 21, <a href="#">24</a>, 40, <a href="#">41</a>, <a href="#">51</a>, 92.</p>
SC.8.N.2.1	Distinguish between scientific and pseudoscientific ideas	See <a href="#">Student Science Skills Sheet 8, What is Science?</a>
SC.8.N.2.2	Discuss what characterizes science and its methods.	<p>IALS 1 (<a href="#">SS 1.1b</a>), <a href="#">2</a>, 3, 5, 7, 8, 9, <a href="#">10</a></p> <p>See also <a href="#">Student Science Skills Sheet 8, What is Science?</a></p>

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SC.8.N.3.1	Select models useful in relating the results of their own investigations	SEPUP has ten different activity types, including MODELING, where students make and use models to understand results of their investigations. See for example, IALS 21, <a href="#">24</a> , 40, <a href="#">41</a> , <a href="#">51</a> , 92.
SC.8.N.3.2	Explain why theories may be modified but are rarely discarded	IALS 1 ( <a href="#">SS 1.1</a> ), <a href="#">2</a> , 9, 36, <a href="#">37</a> , 50, 60, 89  See also <a href="#">Student Science Skills Sheet 8, What is Science?</a>
SC.8.N.4.1	Explain that science is one of the processes that can be used to inform decision making at the community, state, national, and international levels.	IALS <a href="#">29</a> , 53, 70-71, <a href="#">72</a> , 87, 89, <a href="#">103-105</a>
SC.8.N.4.2	Explain how political, social, and economic concerns can affect science, and vice versa.	IALS 29, 53, <a href="#">70-71</a> , 72, 73, 87, <a href="#">89</a> , 103-105