**Lab-Aids Correlations for**
**Florida State Academic Standards for Science**
**Course 2003010 Physical Science**

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This document is intended to show how the SEPUP *Issues and Science, 3rd edition* materials align with the Florida State Academic Standards for Science for the following Florida course: 2003010 Physical Science.

ABOUT OUR PROGRAMS
Lab-Aids has maintained its home offices and operations in Ronkonkoma, NY, since 1963. We publish over 200 kits and core curriculum programs to support science teaching and learning, grades 6-12. All core curricula support an inquiry-driven pedagogy, with support for literacy skill development and with assessment programs that clearly show what students know and are able to do as a result of program use. All programs have extensive support for technology and feature comprehensive teacher support. For more information please visit www.lab-aids.com .

SEPUP
Materials from the Science Education for Public Understanding Program (SEPUP) are developed at the Lawrence Hall of Science, at the University of California, Berkeley, and distributed nationally by LAB-AIDS, Inc. Since 1987, development of SEPUP materials has been supported by grants from the National Science Foundation and other public and private sources. SEPUP programs include student books, equipment kits, teacher materials, and online digital content, and are available as full year courses, or separately, as 17 units, each taking 3-8 weeks to complete, as listed below.

This correlation is intended to show selected locations in the *Issues and Science, 3rd edition* units that support the Florida State Academic Standards for Science. It is not an exhaustive list; other locations may exist that are not listed here.

Middle School Suggested Scope and Sequence (this course highlighted)

| **Earth Science Units Course: 2001010** | **Life Science Units Course: 2000010** | **Physical Science Units Course: 2003010** |
|---|---|---|
| Land, Water, and Human Interactions | Biomedical Engineering | Chemistry of Materials |
| Geological Processes | Body Systems | Chemical Reactions |
| Earth's Resources | Ecology | Energy |
| Weather and Climate | From Cells to Organisms | Force and Motion |
| Solar System and Beyond | Evolution | Fields and Interactions |
| | Reproduction | Waves |

**FLORIDA COURSE TITLE: Physical Science**
**COURSE CODE: 2003010**

**Please note: Direct links to the lessons will not work if you have the Adobe Acrobat extension in your browser.**

| BENCHMARK CODE | PHYSICAL SCIENCE BENCHMARK | LESSON(S) WHERE BENCHMARK IS DIRECTLY ADDRESSED IN MAJOR TOOL<br>See the Student Book, Teacher Edition (TE), and Teacher Resources books for activities referenced. |
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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, collectand organize data, interpret data in charts, tables, andgraphics, analyze information, make predictions, and defend conclusions. | SEPUP "Planning and Carrying Out Investigations (PCI)" activity types call for students to state hypotheses or predictions clearly, design a procedure, collect and analyze data, identify variables, state and defend conclusions. Examples of PCI prompts can be seen in the Procedures for Waves 8, TE, 9, 14; Force and Motion 4, TE, 13; Fields and Interactions 9, TE; Energy 2, TE, 8.<br><br>Examples can also be found in the 6th grade curriculum in Earth's Resources 3; Geological Processes 9; Weather and Climate 6, 12. Note: PCI activities can be found throughout the *Issues and Science* course. This citation mentions only a few examples. |
| SC.6.N.1.2 | Explain why scientific investigations should be replicable. | Energy 2, TE<br>Waves 10, TE<br><br>See "Scientific inquiry" in Appendix A of all Student Books.<br><br>See "What is Science?" Skills Sheet |
| 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 laboratory type (Chemical Reactions 2, TE, 6, 9, 12, 13) as well as investigation (Fields and Interactions 4, TE, 5, 8, 12) and Problem Solving (Force and Motion 12, TE, 14) activities that highlight the differences in each line of inquiry.<br><br>See "The Nature of Science and Engineering," found in Appendix A of all unit Student Books.<br><br>See "What is Science?" Skills Sheet |

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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. | SEPUP's "Planning and Carrying Out Investigations (PCI)" activity types callfor students to design a procedure, collect and analyzedata, identify variables, state and defend conclusions. Examples of PCI prompts can be seen in the Procedures for Waves 8, TE, 9, 14; Force and Motion 4, TE, 13; Fields and Interactions 9, TE; Energy 2, TE, 8. |
| SC.6.N.1.5 | Recognize that science involves creativity, not just in designing experiments, but also in creating explanations that fit evidence. | Chemistry of Materials 8, 9, 12<br>Chemical Reactions 3, TE, 4, 7, 10, 11<br>Fields and Interactions 6, TE, 13<br>Energy 10, TE, 13<br><br>See "What is Science?" Skills Sheet |
| SC.6.N.2.1 | Distinguish science from other activities involving thought. | See "The Nature of Science and Engineering," found in Appendix A of all unit Student Books.<br><br>See "What is Science?" Skills Sheet |
| SC.6.N.2.2 | Explain that scientific knowledge is durable because it is open to change as new evidence or interpretations are encountered. | Force and Motion 9, TE<br>Fields and Interactions 2, TE |
| 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. | Force and Motion 9, TE, 11<br>Fields and Interactions 2, TE<br>See also "Science as a Human Endeavor," found on the SEPUP website. |
| 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. | Energy 5, TE<br>Waves 12, TE<br><br>See "The Nature of Science and Engineering," found in Appendix A of all unit Student Books.<br><br>See "What is Science?" Skills Sheet |
| 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 lawsare different from societal laws. | Energy 3, TE, 5, 6<br>Force and Motion 9, TE, 11<br>Waves 13, TE |

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| SC.6.N.3.3 | Give several examples of scientific laws. | Energy 3, TE, 5<br>Force and Motion 9, TE, 11<br>Waves 13, TE |
| SC.6.N.3.4 | Identify the role of models in the context of the sixth grade science benchmarks. | Modeling, and the use and development of models, are key components to all SEPUP curricula. One of SEPUP's 12 different activity types is "Modeling" and another is "Computer Simulation." Both focus on the use of different types of models in the science classroom.<br><br>Physical Science examples:<br>Chemical Reactions 4, TE, 7<br>Chemistry of Materials 6, TE, 12<br>Fields and Interactions 11, TE<br>Force and Motion 11, TE<br><br>Earth Science examples:<br>Land, Water, and Human Interactions 7, 8, 12<br>Geological Processes 5, 9, 10<br>Solar System and Beyond 3, 4, 7, 8, 11<br><br>In addition, other activities also involve the use of models and "Talking Drawings." See Chemistry of Materials 8, TE, Fields and Interactions 5, TE and 10. |
| SC.6.P.11.1 | Explore the Law of Conservation of Energy by differentiating between potential and kinetic energy. Identify situations where kinetic energy is transformed into potential energy and vice versa. | Energy 2, TE, 3, 5, 6 |
| SC.6.P.12.1 | Measure and graph distance versus time for an object moving at a constant speed. Interpret this relationship. | Force and Motion 2, TE, 3 |

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| SC.6.P.13.1 | Investigate and describe types of forces including contact forces and forces acting at a distance, such aselectrical, magnetic, and gravitational. | Force and Motion 3, TE, 4, 9, 10, 11, 12<br>Fields and Interactions 3, TE, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 |
| SC.6.P.13.2 | Explore the Law of Gravity by recognizing that every object exerts gravitational force on every other objectand that the force depends on how much mass the objects have and how far apart they are. | Fields and Interactions 3, TE, 4<br>Solar System and Beyond 14, TE, 15, 16 |
| SC.6.P.13.3 | Investigate and describe that an unbalanced force acting on an object changes its speed, or direction ofmotion, or both. | Force and Motion 7, TE, 8, 9, 10, 11 |
| 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, andgraphics, analyze information, make predictions, and defend conclusions. | SEPUP's "Planning and Carrying Out Investigations (PCI)" activity types callfor students to state hypotheses or predictions clearly,design a procedure, collect and analyze data, identify variables, state and defend conclusions. Examples of PCI prompts can be seen in the Procedures for Waves 8, TE, 9, 14; Force and Motion 4, TE, 13; Fields and Interactions 9, TE; Energy 2, TE, 8.<br><br>Life Science examples include:<br>Body Systems 7<br>Reproduction 7<br>From Cells to Organisms 3, 9, 13<br>Ecology 4, 5 |
| SC.7.N.1.2 | Differentiate replication (by others) from repetition (multiple trials). | Force and Motion 2, TE, 3, 4, 13<br>Energy 2, TE<br><br>See "Elements of Good Experimental Design," in the Student Book appendices and in the Teacher Resource book. |
| SC.7.N.1.3 | Distinguish between an experiment (which must involve the identification and control of variables) andother forms of scientific investigation and explain that not all scientific knowledge is derived from experimentation. | Students have multiple experiences with designing laboratory investigations and with using other learning modes, such as computer-based simulations and investigations.<br>Examples: Force and Motion 2, TE, 3, 4, 8, 15; Waves 15, TE |

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| | | See "Elements of Good Experimental Design," found in the Teacher Resources book.<br><br>See "What is Science?" Skills Sheet |
| SC.7.N.1.4 | Identify test variables (independent variables) andoutcome variables (dependent variables) in an experiment. | Force and Motion 3, TE, 5, 6, 7, 8, 9, 11, 13<br>Energy 2, TE, 7, 8 |
| 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 "Science as a Human Endeavor," found on the SEPUP website, to review how different methods are used by different scientists and engineers pursuing scientific explanation.<br><br>See "The Nature of Science and Engineering," found in Appendix A of all unit Student Books and found in the Teacher Resources book.<br><br>See "Crosscutting Concepts" found in Appendix G of all unit Student Books.<br><br>See "What is Science?" Skills Sheet |
| 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. | See "What is Science?" Skills Sheet |
| SC.7.N.1.7 | Explain that scientific knowledge is the result of a great deal of debate and confirmation within the science community. | Force and Motion 9, TE<br><br>See "The Nature of Science and Engineering," found in Appendix A of all unit Student Books and found in the Teacher Resources book. |
| 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. | See Appendix A, "The Nature of Science and Engineering?" found in the Teacher Resources book. |

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| | | See "What is Science?" Skills Sheet<br>See "Crosscutting Concepts" found in Appendix G of all unit Student Books. |
| 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. | Theories: Waves 12, TE<br>Laws: Force and Motion 9, TE, 11; Chemical Reactions 7, TE, Energy 5, TE<br><br>See Appendix A, "The Nature of Science and Engineering" found in the Teacher Resources book. |
| SC.7.N.3.2 | Identify the benefits and limitations of the use of scientific models. | SEPUP has specific activity types dealing with the development and use of models, and each time students create or use a model they are encouraged to consider the benefits and limitations of the models.<br><br>Examples: Chemistry of Materials 6, TE, 12; Force and Motion 11, TE; Chemical Reactions 4, TE, 7; Fields and Interactions 11, TE |
| SC.7.P.10.1 | Illustrate that the sun's energy arrives as radiation with a wide range of wavelengths, including infrared, visible, and ultraviolet, and that white light is made upof a spectrum of many different colors. | Waves 12, TE |
| SC.7.P.10.2 | Observe and explain that light can be reflected,refracted, and/or absorbed. | Energy 15, TE<br>Waves 11, TE |
| SC.7.P.10.3 | Recognize that light waves, sound waves, and other waves move at different speeds in different materials. | Waves 3, TE, 9 |
| SC.7.P.11.1 | Recognize that adding heat to or removing heat froma system may result in a temperature change and possibly a change of state. | Energy 7, TE, 10 |
| SC.7.P.11.2 | Investigate and describe the transformation of energyfrom one form to another. | Energy 2, TE, 3, 4 |

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| SC.7.P.11.3 | Cite evidence to explain that energy cannot be created nor destroyed, only changed from one formto another. | Energy 5, TE |
| SC.7.P.11.4 | Observe and describe that heat flows in predictableways, moving from warmer objects to cooler ones until they reach the same temperature. | Energy 10, TE |
| 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. | Fields and Interactions 6, TE<br>Energy 4, ,TE, 7<br>SEPUP's "Planning and Carrying Out Investigations (PCI)" activity types call for students to state hypotheses or predictions clearly,design a procedure, collect and analyze data, identify variables, and state and defend conclusions.<br>Examples: Fields and Interactions 9, TE, Waves 8, TE, 9, 14; Energy 2, TE, 8; Force and Motion 4, TE, 13<br>See also "Keeping a Science Notebook," and Writing Frames for PCI, both found in the Teacher Resources book. |
| SC.8.N.1.2 | Design and conduct a study using repeated trials and replication. | Force and Motion 3, TE, 4<br>Energy 10, TE, 13<br>Fields and Interactions 3, TE, 6, 13<br>"Planning and Carrying Out Investigations" (PCI) type activities model designing and conducting studies using repeated trials. |
| 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. | See "Developing Communication Skills" Student Sheet, found in the Teacher Resources book, which contains examples and prompts of these and other types of statements designed to encourage more scientific communication in class.<br>Examples of where this can be used: Chemical Reactions 1, TE, 5; Energy 2, TE, 4, 5; Fields and Interactions 1, TE, 6, 9, 13; Force and Motion 6, TE; Waves 2, TE, 7,1 3 |

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| 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. | See "The Nature of Science and Engineering," found in Appendix A of all unit Student Books and found in the Teacher Resources book.<br>See "Scientific Inquiry," in the Teacher Resources book.<br>See "What is Science?" Skills Sheet |
| SC.8.N.1.5 | Analyze the methods used to develop a scientific explanation as seen in different fields of science. | Crosscutting Concept are intentionally embedded in all units as a means to help students connect the different disciplines and to bridge phenomena across disciplines. See Appendix G "Crosscutting Concepts," found in the Teacher Resources book.<br>See "What is Science?" Skills Sheet |
| 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, andmodels to make sense of the collected evidence. | SEPUP's "Planning and Carrying Out Investigations (PCI)" and "Modeling" activity types call for students to state hypotheses or predictions clearly, design a procedure, collect and analyze data, identify variables, state and defend conclusions.<br>Chemical Reactions 4, TE, 7<br>Waves 8,TE, 9, 14<br>Energy 2, TE, 8<br>Force and Motion 4,, TE 11, 13<br>Fields and Interactions 9, TE, 11<br>See "The Nature of Science and Engineering," found in Appendix A of all unit Student Books and found in the Teacher Resources book. |
| SC.8.N.2.1 | Distinguish between scientific and pseudoscientificideas. | See "What is Science?" Skills Sheet |
| SC.8.N.2.2 | Discuss what characterizes science and its methods. | See "The Nature of Science and Engineering," found in Appendix A of all unit Student Books and found in the Teacher Resources book.<br>See "What is Science?" Skills Sheet |

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| SC.8.N.3.1 | Select models useful in relating the results of their own investigations. | Chemistry of Materials 6, TE, 7, 8, 9, 10, 12<br>Chemical Reactions 4, TE, 7<br>Waves 2, TE, 12, 13<br>Fields and Interactions 3, TE, 6, 11<br>Force and Motion 10, TE, 11 |
| SC.8.N.3.2 | Explain why theories may be modified but are rarely discarded. | Force and Motion 9, TE<br>Chemical Reactions 9, TE<br><br>See "The Nature of Science and Engineering," found in Appendix A of all unit Student Books and found in the Teacher Resources books.<br><br>See "What is Science?" Skills Sheet |
| 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. | This can also be explored using the "Evidence and Tradeoffs" (ET) scoring guide. See also the discussion in "Evidence and Trade-offs: A Key Element of Decision Making in SEPUP," found in the Teacher Resources book.<br><br>Energy 1, TE, 14, 15<br>Waves 14, TE<br>Force and Motion 1, TE, 12, 15<br>Chemistry of Materials 1,TE, 13<br>Chemical Reactions 12, TE, 13<br><br>See also Appendix A, "The Nature of Science and Engineering," found in the Teacher Resources book. |
| SC.8.N.4.2 | Explain how political, social, and economic concernscan affect science, and vice versa. | Energy 1, TE, 14, 15<br>Chemical Reactions 12, TE, 13<br>Chemistry of Materials 1,TE, 13<br>Fields and Interactions 2, TE, 14, 15<br>Force and Motion 1, TE, 12, 15<br>Waves 10, TE, 15 |

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| | | Students' ideas about tradeoffs – in this case the political and social implications of science-related policies -- are explored and can be assessed using the Evidence and Trade-Offs (ET) scoring guide, which is used throughout the units.<br><br>See also Appendix A, "The Nature of Science and Engineering," and the discussion in "Evidence and Trade-offs: A Key Element of Decision Making in SEPUP," both found in the Teacher Resources book. |
| SC.8.P.8.1 | Explore the scientific theory of atoms (also known as atomic theory) by using models to explain the motion of particles in solids, liquids, and gases. | Chemistry of Materials 8, 10 |
| SC.8.P.8.2 | Differentiate between weight and mass recognizing that weight is the amount of gravitational pull on an object and is distinct from, though proportional to, mass. | Fields and Interactions 4, TE, 7 (partial coverage)<br><br>Focus Lesson: How Much Do You Weigh? It's All Relative. |
| SC.8.P.8.3 | Explore and describe the densities of various materials through measurement of their masses and volumes. | Chemistry of Materials 4, TE |
| SC.8.P.8.4 | Classify and compare substances on the basis of characteristic physical properties that can be demonstrated or measured; for example, density, thermal or electrical conductivity, solubility, magnetic properties, melting and boiling points, and know that these properties are independent of the amount of the sample. | Chemistry of Materials 1, TE, 3 |
| SC.8.P.8.5 | Recognize that there are a finite number of elements and that their atoms combine in a multitude of ways to produce compounds that make up all of the living and nonliving things that we encounter. | Chemistry of Materials 6, TE |
| SC.8.P.8.6 | Recognize that elements are grouped in the periodic table according to similarities of their properties. | Focus Lesson: Elements and the Periodic Table |

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| SC.8.P.8.7 | Explore the scientific theory of atoms (also known as atomic theory) by recognizing that atoms are the smallest unit of an element and are composed of subatomic particles (electrons surrounding a nucleus containing protons and neutrons). | Chemistry of Materials 2, TE, 7 |
| SC.8.P.8.8 | Identify basic examples of and compare and classify the properties of compounds, including acids, bases,and salts. | Chemistry of Materials 3, TE |
| SC.8.P.8.9 | Distinguish among mixtures (including solutions) and pure substances. | Focus Lesson: Substances, Mixtures, and Solutions |
| SC.8.P.9.1 | Explore the Law of Conservation of Mass by demonstrating and concluding that mass is conserved when substances undergo physical and chemical changes. | Chemical Reactions 6, TE, 7, 12 |
| SC.8.P.9.2 | Differentiate between physical changes and chemical changes. | Chemistry of Materials 3, TE, 10, 11<br>Chemical Reactions 2, TE, 3, 5 |
| SC.8.P.9.3 | Investigate and describe how temperature influences chemical changes. | Chemistry of Materials 3, TE<br>Chemical Reactions 9, TE |
| MA.K12.MTR.1.1 | Actively participate in effortful learning both individually and collectively. | Force and Motion 1, TE, 2, 4, 5, 6, 8, Force and Motion 11, TE, 12, 13, 15<br><br>Note: There are many activities in the *Issues and Science* units in this grade level that address this benchmark, but for this correlation we have limited our citations to a single unit. |
| MA.K12.MTR.2.1 | Demonstrate understanding by representing problems in multiple ways. | Force and Motion 2, TE, 3, 4, 5, 6, 7, 8, 9, 11, 12, 14, 15<br><br>Note: There are many activities in the *Issues and Science* units in this grade level that address this benchmark, but for this correlation we have limited our citations to a single unit. |

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| MA.K12.MTR.3.1 | Complete tasks with mathematical fluency. | Force and Motion 2, TE, 3, 4, 7, 8, 9, 13, 14<br>Note: There are many activities in the *Issues and Science* units in this grade level that address this benchmark, but for this correlation we have limited our citations to a single unit. |
| MA.K12.MTR.4.1 | Engage in discussions that reflect on the mathematical thinking of self and others. | Force and Motion 3, TE, 4, 7, 8, 9, 13, 14, 15<br>Note: There are many activities in the *Issues and Science* units in this grade level that address this benchmark, but for this correlation we have limited our citations to a single unit. |
| MA.K12.MTR.5.1 | Use patterns and structure to help understand and connect mathematical concepts. | Force and Motion 3, TE, 4, 7, 8, 9, 13, 14<br>Note: There are many activities in the *Issues and Science* units in this grade level that address this benchmark, but for this correlation we have limited our citations to a single unit. |
| MA.K12.MTR.6.1 | Assess the reasonableness of solutions. | Embedded in the *Issues and Science* units are several opportunities for students to *Analyze and Interpret Data* and *Engineer Design Solutions.*<br>Examples:<br>Chemical Reactions 2, TE, 3, 5, 9, 11<br>Energy 4, TE 10, 11, 13<br>Fields and Interactions 3, TE, 6, 9, 11, 13, 15<br>Force and Motion 2, TE, 3, 4, 5, 14<br>Waves 3, TE, 7, 9, 11 |
| MA.K12.MTR.7.1 | Apply mathematics to real-world contexts. | Force and Motion 13, TE, 14, 15<br>Note: There are many activities in the *Issues and Science* units in this grade level that address this benchmark, but for this correlation we have limited our citations to a single unit. |
| ELA.K12.EE.1.1 | Cite evidence to explain and justify reasoning. | Embedded in the *Issues and Science* units are several opportunities for students to *Engage in Argument from Evidence* and make decisions with supporting *Evidence and Trade-Offs.*<br>Examples: |

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| | | Chemical Reactions 12, TE, 13<br>Chemistry of Materials 1, TE, 13<br>Energy 1, TE, 5, 6, 14, 15<br>Fields and Interactions 2, TE, 4, 7, 14, 15<br>Force and Motion 1, TE, 6, 12, 13, 15<br>Waves 10, TE, 15 |
| ELA.K12.EE.2.1 | Read and comprehend grade-level complex texts proficiently. | The *Issues and Science* program offers many opportunities for students to read and comprehend grade-level complex texts.<br><br>Chemical Reactions 3, TE<br>Chemistry of Materials 7<br>Energy 3, TE, 5, 9, 12<br>Fields and Interactions 2, TE, 7, 14<br>Force and Motion 9, TE<br>Waves 3, TE, 6, 12<br><br>Readings are accompanied with embedded literacy strategies, helping students effectively comprehend the content. Examples of embedded Literacy Strategies are: Anticipation Guide; Directed Activity Related to Text; Listen, Stop, Write; Stop to Think Questions; Three-level Reading Guide; Writing Frames and Reviews; Discussion Web; Intra-Acts; Walking Debates. See Appendix E in all Student Books for examples. |
| ELA.K12.EE.3.1 | Make inferences to support comprehension. | Embedded in the *Issues and Science* units are several opportunities for students to *Analyze and Interpret Data* and *Construct Explanations.* These opportunities help students make inferences to support content and idea comprehension. Examples:<br><br>Chemical Reactions 2, TE, 3, 5, 9<br>Energy 3, TE, , 4, 7, 11, 12<br>Fields and Interactions 3, TE, 4, 9, 10, 13<br>Force and Motion 2, TE, 3, 4, 5, 7, 8, 12, 14<br>Waves 3, TE, , 7, 9, 11 |

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| ELA.K12.EE.4.1 | Use appropriate collaborative techniques and active listening skills when engaging in discussions in a variety of situations. | The *Issues and Science* units embed multiple opportunities for students to practice active listening skills within different situations. Students work collaboratively, using a 4-2-1 model of cooperative group work, on a daily basis. See Teacher Resource book "4–2–1 Collaborative Learning Model." Specific activities are designed around student discussion, including the activities with *Talking it* Over as their instructional design. Specific examples include:<br><br>Chemical Reactions 5, TE<br>Chemistry of Materials 1, TE, 5, 8, 13<br>Fields and Interactions 15, TE<br>Force and Motion 1, TE<br>Waves 15, TE |
| ELA.K12.EE.5.1 | Use the accepted rules governing a specific format to create quality work. | Appendix E, "Literacy Strategies," found in all unit Student Books, shows examples of embedded strategies that assist students with writing, reading, and communicating scientific ideas to produce quality work. See also the Teacher Resource book, "Literacy and Scientific Literacy." |
| ELA.K12.EE.6.1 | Use appropriate voice and tone when speaking or writing. | The *Issues and Science* units scoring guides that help students reach efficient levels of writing and speaking in science. The *Communicating Concepts and Ideas* scoring guide assesses students on how well they can communicate what they have learned about a phenomenon or problem, whether communicating that information in orally or in writing. Several opportunities are given to students to practice this communication.<br><br>Examples:<br>Energy 9, TE<br>Fields and Interactions 5, TE, 6, 8, 9, 12, 13<br>Force and Motion 9, TE 15<br>Waves 5, 6, 7, 12, 13<br><br>See also Appendix E, "Literacy Strategies," found in all Student Books. |

| BENCHMARK CODE | PHYSICAL SCIENCE BENCHMARK | LESSON(S) WHERE BENCHMARK IS DIRECTLY ADDRESSED IN MAJOR TOOL<br>See the Student Book, Teacher Edition (TE), and Teacher Resources books for activities referenced. |
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| ELD.K12.ELL.SC.1 | English language learners communicate information, ideas and concepts necessary for academic success in the content area of Science. | SEPUP provides EL 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:<br>• The Student Books for all units are also presented in Spanish language format.<br>• Vocabulary is introduced with operational definitions that connect concepts to learning experiences (See the Teacher Resources book).<br>• 4-2-1 cooperative groupings encourage student interactions in an unthreatening environment (See the Teacher Resources book).<br>• Strategies for facilitating Group Discussion which includes informal, pair talk, and formal presentations. (See the Teacher Resources book).<br>• Discussion Webs are graphic organizers that help students think ahead about what they want to say about what they have done or read. (See the Teacher Resources book).<br>• Oral Presentation provides guidelines for formal oral communication. (See the Teacher Resources book)<br>• Walking Debates are tools that allow students to express their opinions about issues by moving from one area of the room to another. (See the Teacher Resources book).<br>Example: Chemistry of Materials 5, TE, 13 |
| ELD.K12.ELL.SI.1 | English language learners communicate for social and instructional purposes within the school setting. | 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:<br>• The Student Books for all units are also presented in Spanish language format.<br>• Vocabulary is introduced with operational definitions that connect concepts to learning experiences (See the Teacher Resources book).<br>• 4-2-1 cooperative groupings encourage student interactions in an unthreatening environment (See the Teacher Resources book).<br>• Strategies for facilitating Group Discussion which includes informal, pair talk, and formal presentations. (See the Teacher Resources book).<br>• Discussion Webs are graphic organizers that help students think |

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| | | ahead about what they want to say about what they have done or read. (See the Teacher Resources book).<br>● Oral Presentation provides guidelines for formal oral communication. (See the Teacher Resources book)<br>● Walking Debates are tools that allow students to express their opinions about issues by moving from one area of the room to another. (See the Teacher Resources book).<br>Example: Chemistry of Materials 5, TE, 13 |