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Lab-Aids Correlations for

South Carolina College- and Career-Ready Science Standards 2021

MIDDLE SCHOOL LEVEL – GRADES 6-8

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This document is intended to show how the SEPUP 3rd edition materials align with the South Carolina College- and Career-Ready Science Standards 2021.

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 and navigate to the program of interest.

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. The suggested sequence of units for South Carolina from *Issues and Science Redesigned for the NGSS* is shown below.

Sixth Grade	Seventh Grade	Eighth Grade
Energy	Chemistry of Materials	Force and Motion
From Cells to Organisms	Chemical Reactions	Fields and Interactions
Body Systems	Ecology	Waves
Geological Processes	Earth's Resources	Reproduction
Weather and Climate	Land, Water, and Human Interactions	Evolution
		Solar System and Beyond

Physical Science, Life Science, Earth Science

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ABOUT THE LAB-AIDS CITATIONS

Citations included in the correlation document are as follows:

SEPUP Unit title   *The Chemistry of Materials*
Activity Number   2, 12, 14*

* indicates where Performance Expectation is assessed

KCCRSS/NGSS Performance Expectation	MS-PS1-2
Science and Engineering Practice	Planning and Carrying Out Investigations
Crosscutting Concept	Structure and Function
Disciplinary Core Idea	MS-PS1.A
Common Core English-Language Arts	RST.6-8.3
Common Core Mathematics	MP.2

EIGHTH GRADE

Motion and Stability: Forces and Interactions (PS2)

Performance Expectation	SEPUP Unit and Activity Number	Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts	Common Core ELA/Math
8-PS2-1. Apply Newton's third law to design a solution to a problem involving the motion of two colliding objects.	*Force and Motion:* 1, 10, 11, 12*	Asking Questions and Defining Problems Constructing Explanations and Designing Solutions Developing and Using Models Obtaining, Evaluating, and Communicating Information	MS-ETS1.A MS-PS2.A MS.PS3.A MS-PS3.C	Cause and Effect Connections to Engineering, Technology, and Applications of Science Systems and System Models	RST.6-8.1 RST.6-8.3 RST.6-8.7 MP.2
8-PS2-2. Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.	*Force and Motion:* 1, 6, 7, 8, 9, 13*	Analyzing and Interpreting Data Asking Questions and Defining Problems Connections to the Nature of Science Constructing Explanations and Designing Solutions Obtaining, Evaluating, and Communicating Information Planning and Carrying Out Investigations Using Mathematics and Computational Thinking	MS-ETS1.A MS-PS2.A MS.PS3.A MS-PS3.C	Cause and Effect Connections to Engineering, Technology, and Applications of Science Scale, Proportional, and Quantity Stability and Change	RST.6-8.1 RST.6-8.2 RST.6-8.3 RST.6-8.7 6.RP.AP.2 6. SP.B.5 7. EE.B.4 7.RP.A.2 MP.2
8-PS2-3. Analyze and interpret data to determine the factors that affect the strength of electric and magnetic forces.	*Fields and Interactions:* 7, 8, 9, 12, 13*, 14	Asking Questions and Defining Problems Developing and Using Models	MS-PS2.B MS-ETS1.B	Cause and Effect Patterns Systems and	RST.6-8.1 RST.6-8.3 WHST.6-8.7 MP.2

Performance Expectation	SEPUP Unit and Activity Number	Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts	Common Core ELA/Math
		Engaging in Argument from Evidence Connections to the Nature of Science Planning and Carrying Out Investigations		System Models	
8-PS2-4. Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.	*Fields and Interactions:* 3, 4, 7*	Analyzing and Interpreting Data Asking Questions and Defining Problems Constructing Explanations and Designing Solutions Developing and Using Models Engaging in Argument from Evidence	MS-PS2.B MS-PS3.A MS-PS3.C MS-ETS1.A MS-ETS1.B	Connections to Nature of Science Patterns Systems and System Models	RST.6.8.1 WHST.6-8.1 SL.8.5 6.EE.C.9 MP.2
8-PS2-5. Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.	*Fields and Interactions:* 5, 7, 9, 10, 12*	Analyzing and Interpreting Data Asking Questions and Defining Problems Connections to Nature of Science Constructing Explanations and Designing Solutions Developing and Using Models Engaging in Argument from Evidence Planning and Carrying Out Investigations	MS-PS2.B MS-PS3.A MS-PS3.C MS-ETS1.B	Cause and Effect Patterns Systems and System Models	RST.6-8.3 WHST.6-8.1 WHST.6-8.7 MP.2

Performance Expectation	SEPUP Unit and Activity Number	Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts	Common Core ELA/Math
**Waves and Their Applications in Technologies for Information Transfer (PS4)**
8-PS4-1. Using mathematical representations, describe a simple model for waves, that includes how the amplitude of a wave is related to the energy in a wave.	*Waves:* 1, 2, 3, 7*	Analyzing and Interpreting Data Developing and Using Models Obtaining, Evaluating, and Communicating Information Using Mathematics and Computational Thinking	MS-PS4.A	Connections to Engineering, Technology, and Applications of Science Patterns Structure and Function	RST.6-8.1 RST.6-8.3 RST.6-8.9 6.RP.A.1 7.RP.A.2 MP.2 MP.4
8-PS4-3. Communicate information to support the claim that digital devices are used to improve our understanding of how waves transmit information.	*Waves:* 5, 6	Asking Questions and Defining Problems Connections to Engineering, Technology, and Applications of Science Structure and Function Developing and Using Models Obtaining, Evaluating, and Communicating Information	MS-PS4.C MS-ETS1.A MS-ETS1.B MS-ETS1.C	Connections to Engineering, Technology, and Applications of Science Structure and Function	RST.6-8.1 RST.6-8.3 RST.6-8.9 WHST.6-8.9
**From Molecules to Organisms: Structures and Processes (LS1)**
8-LS1-4. Use arguments, based on empirical evidence and scientific reasoning, to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of	*Reproduction:* 10*, 11*	Constructing Explanations and Designing Solutions Developing and Using Models	MS-LS1.B MS-LS3.A MS-LS3.B	Cause and Effect Patterns	RI.6.8 RST.6-8.1 RST.6-8.4 WHST.6-8.1 6.SP.A.2 6.SP.B.4 6.SP.B.5

Performance Expectation	SEPUP Unit and Activity Number	Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts	Common Core ELA/Math
animals and plants respectively.					
8-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.	*Reproduction:* 1, 7*	Asking Questions and Defining Problems Obtaining, Evaluating, and Communicating Information	MS-LS3.A MS-LS1.B	Cause and Effect Connections to the Nature of Science Structure and Function	RST.6-8.2 SL.8.1 WHST.6-8.9 6.RP.A.1 6.SP.B.5
Heredity: Inheritance and Variation of Traits (LS3)					
8-LS3-1. Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.	*Reproduction:* 1, 3, 8, 12, 13*	Analyzing and Interpreting Data Asking Questions and Defining Problems Connections to the Nature of Science Constructing Explanations and Designing Solutions Developing and Using Models Obtaining, Evaluating, and Communicating Information Planning and Carrying Out Investigations	MS-LS1.B MS-LS3.A MS-LS3.B	Cause and Effect Connections to the Nature of Science Patterns Scale, Proportion, and Quantity Structure and Function	RST.6-8.1 RST.6-8.2 RST.6-8.4 RST.6-8.7 SL.8.1 WHST.6-8.2 WHST.6-8.9 6.SP.B.5 6.RP.A.1
	Evolution: 3, 4, 5*	Analyzing and Interpreting Data Constructing Explanations and Designing Solutions Developing and Using Models	MS-LS2.A MS-LS3.A MS-LS3.B MS-LS4.B MS-LS4.C	Cause and Effect Patterns Structure and Function	RST.6-8.2 RST.6-8.3 SL.8.1 SL.8.4 WHST.6-8.2 WHST.6-8.9 6.SP.B.5

Performance Expectation	SEPUP Unit and Activity Number	Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts	Common Core ELA/Math
		Engaging in Argument from Evidence

Using Mathematics and Computational Thinking | | | 6.RP.A.1 |
| **8-LS3-2.** Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation. | *Reproduction:* 1, 2, 3, 4, 5, 6, 8, 9* | Asking Questions and Defining Problems

Connections to the Nature of Science

Constructing Explanations and Designing Solutions

Developing and Using Models

Engaging in Argument from Evidence

Obtaining, Evaluating, and Communicating Information

Planning and Carrying Out Investigations Using Mathematics and Computational Thinking | MS-LS1.B MS-LS3.A MS-LS3.B | Cause and Effect

Connections to the Nature of Science

Patterns

Scale, Proportion, and Quantity

Structure and Function | RST.6-8.1 RST.6-8.2 RST.6-8.4 RST.6-8.7 RST.6-8.9 SL.8.1 WHST.6-8.2 WHST.6-8.9

6.RP.A.1 6.SP.B.5 |
| **Biological Evolution: Unity and Diversity (LS3)** | | | | | |
| **8-LS4-1.** Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operated in the past as they do today. | *Evolution:* 7, 8, 9, 10 11* | Analyzing and Interpreting Data

Connections to the Nature of Science

Constructing Explanations and Designing Solutions

Engaging in Argument from Evidence

Obtaining, Evaluating, | MS-ESS1.C MS-LS3.B MS-LS4.A MS-LS4.B MS-LS4.C | Cause and Effect

Connections to Engineering, Technology, and Applications of Science

Connections to the Nature of Science | RST.6-8.3 RST.6-8.7 RST.6-8.9 WHST.6-8.2

6.SP.B.5 |

Performance Expectation	SEPUP Unit and Activity Number	Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts	Common Core ELA/Math
		and Communicating Information		Patterns	
8-LS4-2. Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer their ancestral relationships.	*Evolution:* 7, 8, 9, 10 11, 12*	Analyzing and Interpreting Data Connections to the Nature of Science Constructing Explanations and Designing Solutions Engaging in Argument from Evidence Obtaining, Evaluating, and Communicating Information	MS-ESS1.C MS-LS3.B MS-LS4.A MS-LS4.B MS-LS4.C	Cause and Effect Connections to Engineering, Technology, and Applications of Science Connections to the Nature of Science Patterns	RST.6-8.3 RST.6-8.7 RST.6-8.9 WHST.6-8.2 6.SP.B.5
8-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individual's probability of surviving and reproducing in a specific environment.	*Evolution:* 1, 2, 3, 4*	Analyzing and Interpreting Data Constructing Explanations and Designing Solutions Developing and Using Models Engaging in Argument from Evidence Using Mathematics and Computational Thinking	MS-LS2.A MS-LS3.B MS-LS4.B MS-LS4.C	Cause and Effect Patterns	RST.6-8.2 RST.6-8.3 WHST.6-8.2 WHST.6-8.9 6.RP.A.1 6.SP.B.5
8-LS4-5. Gather and synthesize information about technologies that have changed the way humans influence the inheritance of desired traits in organisms.	*Evolution:* 14, 15, 16*	Analyzing and Interpreting Data Constructing Explanations and Designing Solutions Engaging in Argument from Evidence	MS-ESS3.C MS-LS4.A MS-LS4.B MS-LS4.C MS-LS4.D	Cause and Effect Connections to the Nature of Science: Science Addresses Questions About the Natural and	RST.6-8.1 RST.6-8.7 WHST.6-8.2 WHST.6-8.8 WHST.6-8.9

Performance Expectation	SEPUP Unit and Activity Number	Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts	Common Core ELA/Math
		Obtaining, Evaluating, and Communicating Information		Material World Connections to the Nature of Science: Scientific Knowledge Assumes an Order and Consistency in Natural Systems Patterns	
8-LS4-6. Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.	*Evolution:* 1, 2, 3, 4, 5, 6*	Analyzing and Interpreting Data Constructing Explanations and Designing Solutions Developing and Using Models Engaging in Argument from Evidence Using Mathematics and Computational Thinking	MS-LS2.A MS-LS3.A MS-LS3.B MS-LS4.B MS-LS4.C	Cause and Effect Patterns Structure and Function	RST.6-8.2 RST.6-8.3 SL.8.1 SL.8.4 WHST.6-8.2 WHST.6-8.9 6.RP.A.1 6.SP.B.5
Earth's Place in the Universe (ESS1)					
8-ESS1-1. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, tides, and seasons.	*Solar System and Beyond:* 2, 3, 4, 5*, 6, 7, 8, 9*	Analyze and Interpret Data Constructing Explanations and Designing Solutions Developing and Using Models	MS-ESS1.A MS-ESS1.B	Cause and Effect Connections to Engineering, Technology, and Applications of Science Connections to Nature of	RST.6-8.2 WHST.6-8.2 SL.8.5 6.RP.A.1

Performance Expectation	SEPUP Unit and Activity Number	Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts	Common Core ELA/Math
				Science

Patterns

Scale, Proportion, and Quantity

Systems and System Models | |
| **8-ESS1-2.** Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. | *Solar System and Beyond:* 10, 11, 12, 14, 15, 16* | Analyze and Interpret Data

Connections to the Nature of Science

Developing and Using Models

Using Mathematics and Computational Thinking | MS-ESS1.A MS-ESS1.B | Connections to Engineering, Technology, and Applications of Science

Connections to Nature of Science

Patterns

Scale, Proportion, and Quantity

Systems and System Models | RST.6-8.1 WHST.6-8.2 WHST.6-8.9 SL.8.4

6.RP.A.1 6.RP.A.3 MP.2 MP.4 |
| **8-ESS1-3.** Evaluate information to determine scale properties of objects in the solar system. | *Solar System and Beyond:* 1, 10, 11, 12, 13* | Analyze and Interpret Data Developing and Using Models

Using Mathematics and Computational Thinking | MS-ESS1.A MS-ESS1.B | Connections to Engineering, Technology, and Applications of Science

Scale, Proportion, and Quantity

Systems and System Models | WHST.6-8.2 SL.8.4

6.RP.A.1 6.RP.A.3 MP.2 MP.4 |