Lab-Aids Correlations for

2023 PENNSYLVANIA
SCIENCE, TECHNOLOGY & ENGINEERING, ENVIRONMENTAL LITERACY AND SUSTAINABILITY (STEELS) STANDARDS
LIFE SCIENCE – GRADES 6-8
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This document is intended to show how the SEPUP *Issues and Science 3rd edition* materials align with the 2023 STEELS Standards.

 ABOUT OUR PROGRAMS
Lab-Aids has based 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, and are available as full year courses, or separately, as units, each taking 3-8 weeks to complete, as listed below.

SUGGESTED SCOPE AND SEQUENCE

Issues and Science, 3rd edition: Life Science units
Ecology
Body Systems
From Cells to Organisms
Reproduction
Evolution
Biomedical Engineering

ABOUT THE LAB-AIDS CITATIONS

Citations included in the correlation document are as follows:	
Unit title:	*Ecology*:
Activity Number	2, 12, 14*
	* indicates where standard is assessed

Life Science Standards Correlation

Strand	Standard	Issues and Science Unit: Activity(ies)
STEELS 3.1 Life Science: Grades 6-8		
Structure and Function	**3.1.6-8.A** Conduct an investigation to provide evidence that living things are made of cells, either one cell or many different numbers and types of cells.	*From Cells to Organisms:* 1, 2, 3, 4, 9*
	3.1.6-8.B Develop and use a model to describe the function of a cell as a whole and the ways that parts of cells contribute to the function.	*From Cells to Organisms:* 6, 7, 8*
	3.1.6-8.C Use arguments supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.	*From Cells to Organisms*: 10, 14, 15 *Body Systems:* 1, 2, 3, 4, 9, 10, 11, 12*
Growth and Development of Organisms	**3.1.6-8.D** 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 animals and plants, respectively.	*Reproduction:* 10*, 11*
	3.1.6-8.E Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.	*Reproduction:* 1, 7*
Organization for Matter and Energy Flow in Organisms	**3.1.6-8.F** Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.	*From Cells to Organisms*: 12, 13*
	3.1.6-8.G Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.	*From Cells to Organisms*: 5, 11* *Body Systems:* 5
Information Processing	**3.1.6-8.H** Gather and synthesize information about how sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.	*Body Systems:* 6, 7, 8*
Interdependent Relationships in Ecosystems	**3.1.6-8.I** Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.	*Ecology:* 5, 6, 9*

STEELS 3.1 Life Science: Grades 6-8		
Strand	**Standard**	*Issues and Science* **Unit: Activity(ies)**
	3.1.6-8.J Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.	*Ecology:* 2, 8, 10*
Cycles of Matter and Energy Transfer in Ecosystems	**3.1.6-8.K** Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.	*Ecology:* 7, 8, 11, 12* *From Cells to Organisms:* 13
Ecosystem Dynamics, Functioning, and Resilience	**3.1.6-8.L** Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.	*Ecology:* 1, 2, 3, 4, 5, 6, 13, 14*
Inheritance of Traits	**3.1.6-8.M** 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* *Evolution:* 3, 4, 5*
Variation of Traits	**3.1.6-8.N** 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*
Evidence of Common Ancestry and Diversity	**3.1.6-8.O** 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 operate today as in the past.	*Evolution:* 7, 8, 9, 10 11*
	3.1.6-8.P Apply scientific ideas to construct an explanation for anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.	*Evolution:* 7, 8, 9, 10 11, 12*
	3.1.6-8.Q Analyze displays of pictorial data to compare patterns of similarities in anatomical structures across multiple species to identify relationships not evident in the fully formed anatomy.	*Evolution:* 12, 13*
Natural Selection	**3.1.6-8.R** Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.	*Evolution:* 14, 15, 16*

STEELS 3.1 Life Science: Grades 6-8		
Strand	**Standard**	*Issues and Science* **Unit: Activity(ies)**
	3.1.6-8.S Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.	*Evolution:* 1, 2, 3, 4*
Adaptation	**3.1.6-8.T** 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*
Biodiversity and Humans	**3.1.6-8.U** Evaluate competing design solutions for maintaining biodiversity and ecosystem services.	*Ecology:* 2, 4, 15*
Engineering, Technology, and Applications of Science (ETS)	**3.5.6-8.M (ETS)** Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.	*Biomedical Engineering:* 2, 4, 5, 8, 9*
	3.5.6-8.N (ETS) Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.	*Biomedical Engineering:* 1, 2, 4, 5*
	3.5.6-8.P (ETS) Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.	*Biomedical Engineering:* 4, 5, 7*
	3.5.6-8.W (ETS) Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.	*Biomedical Engineering:* 1, 2, 3*