



## Lab-Aids Correlations for Idaho Content Standards for Science Middle School Science

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This document is intended to show how the SEPUP *Issues and Science, 3<sup>rd</sup> Edition Redesigned for the NGSS*, curriculum materials align with the [Idaho Content Standards for Science](#) for Middle School Science.

### ABOUT LAB-AIDS

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](http://www.lab-aids.com) and navigate to the program of interest.

### ABOUT 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.

### SCOPE AND SEQUENCE

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



## ABOUT THE LAB-AIDS CITATIONS

*Citations included in the correlation document are as follows:*

Unit title: *From Cells to Organisms:*

Activity Number 2, 3, 4, 5, 6\*, 7\*, 8

\* indicates where standard is assessed

## Middle School Physical Science

Idaho Content Standard for Physical Science	Issues and Science Unit: Activity #
<b>MS-PS-1 – Matter and Its Interactions</b>	
<b>MS-PS-1.1</b> Students who demonstrate understanding can: <b>Develop models to describe the atomic composition of simple molecules.</b>	<i>Chemistry of Materials: 2, 6, 7, 12*</i>
<b>MS-PS-1.2</b> Students who demonstrate understanding can: <b>Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.</b>	<i>Chemical Reactions: 1, 2, 3, 4, 5*</i>
<b>MS-PS-1.3</b> Students who demonstrate understanding can: <b>Construct a scientific explanation, based on evidence, to describe that synthetic materials come from natural resources.</b>	<i>Chemistry of Materials: 1, 2, 3, 4, 5, 11, 12, 13*</i>
<b>MS-PS-1.4</b> Students who demonstrate understanding can: <b>Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.</b>	<i>Chemistry of Materials: 8, 9, 10*</i>
<b>MS-PS-1.5</b> Students who demonstrate understanding can: <b>Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.</b>	<i>Chemical Reactions: 1, 2, 3, 4, 5, 6, 7*</i>
<b>MS-PS-1.6</b> Students who demonstrate understanding can: <b>Undertake a design project to construct, test, and/or modify a device that either releases or absorbs thermal energy by chemical processes.</b>	<i>Chemical Reactions: 2, 3, 5, 8, 9, 10, 11*</i>
<b>MS-PS-2 – Motion and Stability: Forces and Interactions</b>	
<b>MS-PS-2.1</b> Students who demonstrate understanding can: <b>Apply Newton’s Third Law to design a solution to a problem involving the motion of two colliding objects.</b>	<i>Force and Motion: 1, 10, 11, 12*</i>

Idaho Content Standard for Physical Science	Issues and Science Unit: Activity #
<b>MS-PS-2.2</b> Students who demonstrate understanding can: <b>Plan and conduct 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.</b>	<i>Force and Motion: 1, 6, 7, 8, 9, 13*</i>
<b>MS-PS-2.3</b> Students who demonstrate understanding can: <b>Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.</b>	<i>Fields and Interactions: 7, 8, 9, 12, 13*, 14</i>
<b>MS-PS-2.4</b> Students who demonstrate understanding can: <b>Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.</b>	<i>Fields and Interactions: 3, 4, 7*</i>
<b>MS-PS-2.5</b> Students who demonstrate understanding can: <b>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.</b>	<i>Fields and Interactions: 5, 7, 9, 10, 12*</i>
<b>MS-PS-3 – Energy</b>	
<b>MS-PS-3.1</b> Students who demonstrate understanding can: <b>Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.</b>	<i>Force and Motion: 1, 2, 3, 4, 5*</i>
<b>MS-PS-3.2</b> Students who demonstrate understanding can: <b>Develop a model to describe the relationship between the relative positions of objects interacting at a distance and the relative potential energy in the system.</b>	<i>Fields and Interactions: 3, 4, 6, 7, 10, 11*</i>
	<i>Force and Motion: 1, 3, 4, 5, 10, 14</i>
<b>MS-PS-3.3</b> Students who demonstrate understanding can: <b>Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.</b>	<i>Energy: 1, 7, 8, 10, 11, 12, 13*</i>
<b>MS-PS-3.4</b> Students who demonstrate understanding can: <b>Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.</b>	<i>Energy: 1, 4, 6, 7, 8*</i>
<b>MS-PS-3.5</b> Students who demonstrate understanding can: <b>Construct, use, and present arguments to support the claim that</b>	<i>Energy: 2, 3, 4, 5, 6*</i>

Idaho Content Standard for Physical Science	Issues and Science Unit: Activity #
when the kinetic energy of an object changes, energy is transferred to or from the object.	
<b>MS-PS-4 – Waves</b>	
<b>MS-PS-4.1</b> Students who demonstrate understanding can: <b>Use diagrams of a simple wave to explain that (1) a wave has a repeating pattern with a specific amplitude, frequency, and wavelength, and (2) the amplitude of a wave is related to the energy in the wave.</b>	<i>Waves: 1, 2, 3, 7*</i>
<b>MS-PS-4.2</b> Students who demonstrate understanding can: <b>Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.</b>	<i>Waves: 3, 4, 8, 9, 10, 11, 12, 13*</i>
<b>MS-PS-4.3</b> Students who demonstrate understanding can: <b>Present qualitative scientific and technical information to support the claim that digitized signals (0s and 1s) can be used to encode and transmit information.</b>	<i>Waves: 5, 6</i>

## Middle School Life Science

Idaho Content Standard for Life Science	Issues and Science Unit: Activity #
<b>MS-LS-1 – From Molecules to Organisms: Structure and Processes</b>	
<b>MS-LS-1.1</b> Students who demonstrate understanding can: <b>Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.</b>	<i>From Cells to Organisms: 1, 2, 3, 4, 9*</i>
<b>MS-LS-1.2</b> Students who demonstrate understanding can: <b>Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.</b>	<i>From Cells to Organisms: 6, 7, 8*</i>
<b>MS-LS-1.3</b> Students who demonstrate understanding can: <b>Make a claim supported by evidence for how a living organism is a system of interacting subsystems composed of groups of cells.</b>	<i>From Cells to Organisms: 10, 14, 15</i> <i>Body Systems: 1, 2, 3, 4, 9, 10, 11, 12*</i>
<b>MS-LS-1.4</b> Students who demonstrate understanding can: <b>Construct a scientific argument based on evidence to defend a claim of life for a specific object or organism.</b>	<i>From Cells to Organisms: 3, 4</i> <i>Reproduction: 3</i>
<b>MS-LS-1.5</b> Students who demonstrate understanding can: <b>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.</b>	<i>From Cells to Organisms: 12, 13*</i>
<b>MS-LS-1.6</b> Students who demonstrate understanding can: <b>Develop a conceptual model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as matter moves through an organism.</b>	<i>From Cells to Organisms: 5, 11*</i> <i>Body Systems: 5</i>
<b>MS-LS-2 – Ecosystems: Interactions, Energy, and Dynamics</b>	
<b>MS-LS-2.1</b> Students who demonstrate understanding can: <b>Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.</b>	<i>Ecology: 5, 6, 9*</i>

Idaho Content Standard for Life Science	Issues and Science Unit: Activity #
<b>MS-LS-2.2</b> Students who demonstrate understanding can: <b>Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.</b>	<i>Ecology: 2, 8, 10*</i>
<b>MS-LS-2.3</b> Students who demonstrate understanding can: <b>Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.</b>	<i>Ecology: 7, 8, 11, 12*</i> <i>From Cells to Organisms: 13</i>
<b>MS-LS-2.4</b> Students who demonstrate understanding can: <b>Develop a model to describe the flow of energy through the trophic levels of an ecosystem.</b>	<i>Ecology: 7, 8, 11, 12</i>
<b>MS-LS-2.5</b> Students who demonstrate understanding can: <b>Construct an argument supported by evidence that changes to physical or biological components of an ecosystem affect populations.</b>	<i>Ecology: 1, 2, 3, 4, 5, 6, 13, 14*</i>
<b>MS-LS-2.6</b> Students who demonstrate understanding can: <b>Design and evaluate solutions for maintaining biodiversity and ecosystem services.</b>	<i>Ecology: 2, 4, 15*</i>
<b>MS-LS-3 – Heredity: Inheritance and Variation of Traits</b>	
<b>MS-LS-3.1</b> Students who demonstrate understanding can: <b>Develop and use a model to describe why mutations may result in harmful, beneficial, or neutral effects to the structure and function of the organism.</b>	<i>Reproduction: 1, 3, 8, 12, 13*</i> <i>Evolution: 3, 4, 5*</i>
<b>MS-LS-3.2</b> Students who demonstrate understanding can: <b>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.</b>	<i>Reproduction: 1, 2, 3, 4, 5, 6, 8, 9*</i>
<b>MS-LS-4 – Biological Adaptation: Unity and Diversity</b>	
<b>MS-LS-4.1</b> Students who demonstrate understanding can: <b>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.</b>	<i>Evolution: 7, 8, 9, 10 11*</i>

Idaho Content Standard for Life Science	Issues and Science Unit: Activity #
<b>MS-LS-4.2</b> Students who demonstrate understanding can: <b>Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer relationships.</b>	<i>Evolution: 7, 8, 9, 10 11, 12*</i>
<b>MS-LS-4.3</b> Students who demonstrate understanding can: <b>Analyze visual evidence to compare patterns of similarities in the anatomical structures across multiple species of similar classification levels to identify relationships.</b>	<i>Evolution: 12, 13*</i>
<b>MS-LS-4.4</b> Students who demonstrate understanding can: <b>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.</b>	<i>Evolution: 1, 2, 3, 4*</i>
<b>MS-LS-4.5</b> Students who demonstrate understanding can: <b>Obtain, evaluate, and communicate information about how technologies allow humans to influence the inheritance of desired traits in organisms.</b>	<i>Evolution: 14, 15, 16*</i>
<b>MS-LS-4.6</b> Students who demonstrate understanding can: <b>Use mathematical models to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.</b>	<i>Evolution: 1, 2, 3, 4, 5, 6*</i>



## Middle School Earth and Space Science

Idaho Content Standard for Earth and Space Science	Issues and Science Unit: Activity #
<b>MS-ESS-1 – Earth’s Place in the Universe</b>	
<b>MS-ESS-1.1</b> Students who demonstrate understanding can: <b>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, and seasons.</b>	<i>Solar System and Beyond: 2, 3, 4, 5*, 6, 7, 8, 9*</i>
<b>MS-ESS-1.2</b> Students who demonstrate understanding can: <b>Develop and use a model to describe the role of gravity in the orbital motions within galaxies and the solar system.</b>	<i>Solar System and Beyond: 10, 11, 12, 14, 15, 16*</i>
<b>MS-ESS-1.3</b> Students who demonstrate understanding can: <b>Analyze and interpret data to determine scale properties of objects in the solar system.</b>	<i>Solar System and Beyond: 1, 10, 11, 12, 13*</i>
<b>MS-ESS-1.4</b> Students who demonstrate understanding can: <b>Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to analyze Earth’s history.</b>	<i>Earth’s Resources: 9, 10, 11, 12*</i>
<b>MS-ESS-2 – Earth’s Systems</b>	
<b>MS-ESS-2.1</b> Students who demonstrate understanding can: <b>Develop a model to describe the cycling of Earth’s materials and the internal and external flows of energy that drive the rock cycle processes.</b>	<i>Geological Processes: 2, 5, 8, 9, 10, 11, 13, 14, 15*</i>
<b>MS-ESS-2.2</b> Students who demonstrate understanding can: <b>Construct an explanation based on evidence for how geoscience processes have changed Earth’s surface at varying time and spatial scales.</b>	<i>Geological Processes: 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13*</i> <i>Land, Water, and Human Interactions: 3, 4, 6, 7, 8, 10, 11, 12, 13, 14*</i>
<b>MS-ESS-2.3</b> Students who demonstrate understanding can: <b>Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.</b>	<i>Geological Processes: 10, 11, 12, 13, 14*</i>
<b>MS-ESS-2.4</b> Students who demonstrate understanding can: <b>Develop a model to describe the cycling of water through Earth’s systems driven by energy from the Sun and the force of gravity.</b>	<i>Land, Water, and Human Interactions: 2, 5, 7, 8, 9*</i>
<b>MS-ESS-2.5</b> Students who demonstrate understanding can: <b>Collect data to provide evidence for how the motions and</b>	<i>Weather and Climate: 2, 3, 7, 9, 10, 11, 12, 13*</i>

Idaho Content Standard for Earth and Space Science	Issues and Science Unit: Activity #
complex interactions of air masses results in changes in weather conditions.	
<b>MS-ESS-2.6</b> Students who demonstrate understanding can: <b>Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.</b>	<i>Weather and Climate: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14*</i>
<b>MS-ESS-3 – Earth and Human Activity</b>	
<b>MS-ESS-3.1</b> Students who demonstrate understanding can: <b>Construct a scientific explanation based on evidence for how Earth's mineral, energy, and groundwater resources are unevenly distributed as a result of past and current geologic processes.</b>	<i>Geological Processes: 2, 16*, 17*</i> <i>Earth's Resources: 1, 2, 3, 5, 7, 8, 14*</i>
<b>MS-ESS-3.2</b> Students who demonstrate understanding can: <b>Analyze and interpret data on natural hazards to forecast future catastrophic events to mitigate their effects.</b>	<i>Geological Processes: 1, 3, 4, 6, 7, 8, 11, 18*</i>
<b>MS-ESS-3.3</b> Students who demonstrate understanding can: <b>Apply scientific practices to design a method for monitoring human activity and increasing beneficial human influences on the environment.</b>	<i>Land, Water, and Human Interactions: 1, 3, 4, 5, 6, 9, 13, 14, 15, 16*</i>
<b>MS-ESS-3.4</b> Students who demonstrate understanding can: <b>Construct an argument based on evidence for how changes in human population and per-capita consumption of natural resources positively and negatively affect Earth's systems.</b>	<i>Earth's Resources: 2, 4, 6, 13*</i> <i>Evolution: 14</i>
<b>MS-ESS-3.5</b> Students who demonstrate understanding can: <b>Ask questions to interpret evidence of the factors that cause climate variability throughout Earth's history.</b>	<i>Weather and Climate: 1, 10, 14, 15, 16*</i>