



**Lab-Aids Correlations for
UTAH SCIENCE STANDARDS¹
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 *Utah Science with Engineering Education (SEEd) Standards*.

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, and are available as full year courses, or separately, as units, each taking 3-8 weeks to complete, as listed below.

SUGGESTED MIDDLE LEVEL SCOPE AND SEQUENCE FOR UTAH, GRADES 6-8

Utah has an integrated sequence of science standards in grades 6-8 with some topic domains occurring in multiple grade levels (e.g., Chemistry of Materials appears in grade 6 and 8, Cells in grades 7 and 8, Fields in grades 7 and 8, etc.). This suggested sequence would cover all standards over grades 6-8.

Grade 6	Grade 7	Grade 8
Solar System and Beyond	Force and Motion	Chemistry of Materials
Energy	Geological Processes	Chemical Reactions
Land Water and Human Interactions	Earth’s Resources	Fields and Interactions
Weather	Body Systems	Waves
Ecology	Reproduction	Cells to Organisms
	Evolution	

¹ <https://www.schools.utah.gov/curr/science>

ABOUT THE LAB-AIDS CITATIONS

The following tables are presented in a Disciplinary Core Idea arrangement – Earth Space Science (ESS), Life Science (LS), Physical Science (PS) and Engineering, Technology and Applications of Science (ETS).

Citations included in the correlation document are as follows:

* indicates comprehensive assessment opportunity

Unit title, Activity Number

The Chemistry of Materials, 14

GRADE 6

Utah SEEd	Core Ideas	Location in SEPUP
6.1.1	Patterns of motion cause moon phases and eclipses. Earth's tilt results in seasons due to differential intensity of sunlight.	<i>Solar System and Beyond: 2, 3, 4, 5, 6, 7, 9*</i>
6.1.2	Gravity controls orbital motion of objects in the solar system.	<i>Solar System and Beyond: 1, 10, 11, 12, 13, 14, 15, 16*</i>
6.1.3	Objects in the solar system have similarities and differences.	<i>Solar System and Beyond: 10, 11, 12, 13*</i>
6.2.1	Molecules are made of atoms. Molecules vary in complexity.	<i>Chemistry of Materials: 2, 6, 7, 11, 12*</i>
6.2.2	Phase changes result from changes in temperature or pressure.	<i>Chemistry of Materials: 7, 9, 10</i>
6.2.3	Total energy of a system depends on type & amount of matter.	<i>Energy: 1, 4, 6, 7, 8*</i>
6.2.4	Heat energy transfers out of hotter and into colder regions. Design a device that minimizes or maximizes energy transfer.	<i>Energy: 1, 7, 8, 9, 10, 11, 12, 13*</i> <i>Fields and Interactions: 1, 2, 3, 6, 10*</i>
6.3.1	The water cycle is driven by energy from the	<i>Land, Water, and Human Interaction: 2,</i>

Utah SEEd	Core Ideas	Location in SEPUP
	Sun.	5, 7, 8, 9*
6.3.2	Interactions between air masses cause changes in weather.	<i>Weather and Climate:</i> 2, 3, 4, 7, 9, 10, 11, 12, 13*
6.3.3	Patterns of atmospheric and oceanic circulation determine regional climates.	<i>Weather and Climate:</i> 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14*
6.3.4	Earth's greenhouse effect enables life to exist on Earth.	<i>Weather and Climate:</i> 1, 14, 15, 16* <i>Geological Processes:</i> 2, 5, 8, 9, 10, 11, 13, 14, 15*
6.4.1	The availability of resources affects populations in ecosystems.	<i>Ecology:</i> 1, 2, 5, 6, 7, 8, 9*
6.4.2	Patterns of interactions occur across multiple ecosystems.	<i>Ecology:</i> 2, 6, 7, 8, 10*
6.4.3	Matter cycles and energy flows in an ecosystem (food webs).	<i>Ecology:</i> 7, 8, 11, 12*
6.4.4	Changes to an ecosystem affect the stability of populations.	<i>Ecology:</i> 1, 2, 3, 4, 5, 6, 12, 13, 14*
6.4.5	Changes in biodiversity can impact resources and ecosystem services that humans depend on. Design a solution.	<i>Ecology:</i> 2, 3, 4, 5, 13, 14, 15*, 16

GRADE 7

Utah SEEd	Core Ideas	Location in SEPUP
7.1.1	Forces can change the motion of objects. (Newton's Laws)	<i>Force and Motion:</i> 1, 6, 7, 8, 9, 13*
7.1.2	Forces come in pairs. (Newton's Laws) Design a solution to a problem involving colliding objects.	<i>Force and Motion:</i> 1, 10, 11, 12*

Utah SEEd	Core Ideas	Location in SEPUP
7.1.3	Force fields exist between objects not in contact.	<i>Fields and Interactions: 5, 7, 8*</i>
7.1.4	Factors that affect the strength of electric and magnetic forces.	<i>Fields and Interactions: 5, 7, 8, 9, 11, 12*</i>
7.1.5	Gravity depends on the masses of interacting objects.	<i>Fields and Interactions: 4, 6, 7*</i>
7.2.1	Energy drives the cycling of Earth's materials (rock cycle).	<i>Geological Processes: 2, 5, 8, 9, 10, 11, 13, 14, 15*</i>
7.2.2	Earth's surface is constantly changing.	<i>Geological Processes: 2, 3, 4, 6, 7, 9, 10, 11, 12, 13*</i>
7.2.3	Technologies mitigate the effects of natural hazards. Design a solution.	<i>Geological Processes: 1, 3, 4, 6, 7, 8, 11, 18*</i>
7.2.4	Earth's interior includes the crust, mantle, and core.	<i>Geological Processes: 10, 11, 12, 13, 14*</i>
7.2.5	Earth's plates can move great distances, collide, spread apart.	<i>Geological Processes: 10, 11, 12, 13, 14*</i>
7.2.6	Rock strata and the fossil record tell the story of Earth's history.	<i>Earth's Resources: 9, 10, 11, 12*</i>
7.3.1	All living things are made of cells.	<i>From Cells to Organisms: 1, 2, 3, 4, 5, 6, 7, 8, 9*</i>
7.3.2	The cell is a system made of parts with many different functions.	<i>From Cells to Organisms: 4, 6, 7, 8*</i>
7.3.3	Body systems are specialized for particular body functions.	<i>From Cells to Organisms: 10, 14, 15 Body Systems 3, 4, 7, 8, 9, 10, 11, 12</i>
7.4.1	Effect of sexual and asexual reproduction on genetic variation.	<i>Reproduction: 9, 10*, 11*</i>
7.4.2	Adaptations increase the probability of successful reproduction.	<i>Reproduction: 1, 7*</i>
7.4.3	Genetic mutations can change traits.	<i>Reproduction: 1, 3, 7, 8, 12, 13*</i>
7.4.4	Genetic engineering technologies change traits of organisms.	<i>Evolution: 14, 15, 16*</i>

Utah SEEd	Core Ideas	Location in SEPUP
7.5.1	Natural selection leads to changes in populations over time.	Evolution: 1, 2, 3, 4*
7.5.2	The fossil record documents the history of life forms on Earth.	Evolution: 7, 8, 9, 10 11*
7.5.3	Similar anatomy of organisms is evidence of common ancestry.	Evolution: 7, 8, 9, 10 11, 12*
7.5.4	Embryological development is evidence of common ancestry.	Evolution: 12, 13*

GRADE 8

Utah SEEd	Core Ideas	Location in SEPUP
8.1.1	Atoms have a charged substructure consisting of a nucleus (made of protons and neutrons) surrounded by electrons.	<i>Chemistry of Materials</i> : 2, 6, 7, 11, 12*
8.1.2	Different properties of matter are suited to different purposes.	<i>Chemistry of Materials</i> : 1, 2, 3, 4, 5, 11, 12, 13*
8.1.3	New substances in a chemical reaction have different properties.	<i>Chemical Reactions</i> : 1, 2, 3, 4, 5*
8.1.4	Synthetic materials come from natural resources.	<i>Chemistry of Materials</i> : 1, 2, 3, 4, 5, 11, 12, 13* <i>Chemistry of Materials</i> : 7, 9, 10
8.1.5	Adding or removing thermal energy can result in a phase change.	<i>Chemistry of Materials</i> : 7, 9, 10
8.1.6	Matter is conserved (law of conservation of matter).	<i>Chemical Reactions</i> : 1, 2, 3, 4, 5, 6, 7*
8.1.7	Some chemical reactions release or store energy. Design a device that releases or absorbs thermal energy.	<i>Chemical Reactions</i> : 2, 3, 5, 8, 9, 10, 11*
8.2.1	Effect of mass and speed on the kinetic energy of an object.	<i>Force and Motion</i> : 1, 2, 3, 4, 5*
8.2.2	Effect of position on the potential energy stored in a system.	<i>Fields and Interactions</i> : 3, 6, 7, 10*
8.2.3	Energy transfers between objects & their surroundings in a system.	<i>Energy</i> : 2, 3, 4, 5, 6*

Utah SEEd	Core Ideas	Location in SEPUP
8.2.4	Waves transfer energy from one location to another.	<i>Waves: 1, 2, 3, 4, 7*</i>
8.2.5	Effect of different materials on light and sound waves.	<i>Waves: 3, 8, 9, 10, 11, 12, 13*</i>
8.2.6	Waves can be used for communication purposes.	<i>Waves: 5, 6</i>
8.3.1	Plants use energy from sunlight to make food from air and water.	<i>From Cells to Organisms: 12, 13*</i>
8.3.2	Energy from food is used to support growth of organisms.	<i>From Cells to Organisms: 5, 11*</i>
8.3.3	Role of photosynthesis & cellular respiration in the carbon cycle.	<i>Ecology: 2, 3, 4, 5, 13, 14, 15*</i>
8.4.1	Geologic processes form Earth's natural resources.	<i>Geological Processes: 2, 16, 17*</i>
8.4.2	Earth's natural resources are limited and may not be renewable.	<i>Earth's Resources: 2, 4, 6, 13*</i>
8.4.3	Human activities have changed Earth's environments. Design a solution.	<i>Land, Water, and Human Interactions: 2, 3, 4, 5, 6, 9, 13, 14, 15, 16*</i>
8.4.4	Factors that change global temperatures and regional climates.	<i>Weather and Climate: 1, 14, 15, 16*</i>
8.4.5	Some natural hazards can be predicted. Others occur without warning.	<i>Geological Processes: 1, 3, 4, 6, 7, 8, 11, 18*</i>