Lab-Aids Correlations for
Idaho Content Standards for Science
Chemistry

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This document is intended to show how *A Natural Approach to Chemistry, 3rd edition* materials align with the Idaho Content Standards for Science for Chemistry.

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 visitwww.lab-aids.com and navigate to the program of interest.

ABOUT *A NATURAL APPROACH TO CHEMISTRY*

A Natural Approach to Chemistry (NAC), written by Manos Chaniotakis, PhD, is published by, and available exclusively from, Lab-Aids, Inc., Ronkonkoma NY. Fully integrated instructional materials include a Student Book (SB), Lab Investigations Manual (LIM), Teacher Edition (TE), and a variety of materials packages.

Chapters 1-4 present a comprehensive overview of the "big picture," main ideas in chemistry, such as the atomic nature of matter, systems, temperature, and energy. Chapters 5-14 provide in-depth coverage of the big ideas laid out in the first four chapters. The treatment includes strong conceptual development as well as algebra-based quantitative problem solving. All academic content and instruction standards for chemistry have been met by the end of Chapter 14. Chapters 15-21 dive deeper into significant areas of interest in chemistry related to the natural world and applications of chemistry to our daily lives.

ABOUT THE LAB-AIDS CITATIONS

Citations included in the correlation document are as follows:	
Student Book: Chapter, Section	6.2, 6.3
Lab Investigations Manual (LIM): Investigation #	7A, 7B

This correlation is intended to show selected locations in *A Natural Approach to Chemistry, 3rd edition* student materials that support the Idaho Content Standards for Science for Chemistry. It is not an exhaustive list; other locations may exist that are not listed here.

Idaho Content Standard	*A Natural Approach to Chemistry* Student Book Section	*A Natural Approach to Chemistry* Lab Investigation #
HS-PSC-1 – Structure and Properties of Matter		
HS-PSC-1.1 Students who demonstrate understanding can: **Develop models to describe the atomic composition of simple molecules and extended structures.**	2.2, 4.1, 4.2, 4.3, 7.1, 7.2, 7.3, 8.1, 8.2, 8.3, 8.4	2B, 4C, 6C, 7A, 7B, E7, 8A, 8B
HS-PSC-1.2 Students who demonstrate understanding can: **Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.**	2.1, 5.1, 6.1, 6.2, 7.1, 7.2, 7.3	6B, 6C, 7A
HS-PSC-1.3 Students who demonstrate understanding can: **Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrostatic forces between particles.**	2.2, 8.1, 8.2, 8.3, 9.1, 16.4	3B
HS-PSC-1.4 Students who demonstrate understanding can: **Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and the various modes of radioactive decay.**	20.1, 20.2, 20.3, 20.4	20B
HS-PSC-2 – Chemical Reactions		
HS-PSC-2.1 Students who demonstrate understanding can: **Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.**	4.1, 6.1, 6.2, 7.2, 7.3	4C, 7A
HS-PSC-2.2 Students who demonstrate understanding can: **Develop a model to illustrate that the energy transferred during an exothermic or endothermic chemical reaction is based on the bond energy difference between bonds broken (absorption of energy) and bonds formed (release of energy).**	4.1, 12.1, 12.3	4C, 10C
HS-PSC-2.3 Students who demonstrate understanding can: **Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.**	12.2	12A, 12B, 12C
HS-PSC-2.4 Students who demonstrate understanding can: **Use mathematical representations to support the claim that the number and type of atoms, and therefore mass, are conserved during a chemical reaction.**	4.2, 10.1, 10.2, 10.3, 11.1, 11.2, 11.3, 11.4, 12.2	4A, 10A

Idaho Content Standard	*A Natural Approach to Chemistry* Student Book Section	*A Natural Approach to Chemistry* Lab Investigation #
HS-PSC-3 – Energy		
HS-PSC-3.1 Students who demonstrate understanding can: **Ask questions to clarify the idea that electromagnetic radiation can be described either by a wave model or a particle model.**	5.2, 5.4	
HS-PSC-3.2 Students who demonstrate understanding can: Create a computational model to calculate the change in **the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.**	3.2, 10.4	3A, 3B, 9C, 10C
HS-PSC-3.3 Students who demonstrate understanding can: **Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative positions of particles (objects).**	1.3, 3.1, 9.3	3A, 3B, 3D, 4A, 9C, 10C, 15A, 15B
HS-PSC-3.4* Students who demonstrate understanding can: **Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy. ---OPTIONAL**	9.3, 15.1, 15.4	15A, 15B, 15C
HS-PSC-3.5 Students who demonstrate understanding can: **Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).**	3.2, 3.3, 3.4, 19.1	3A, 3B