

**NEVADA'S
CONTENT STANDARDS
FOR
ADULT SECONDARY EDUCATION**

SCIENCE

For Truckee Meadows Community College

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Last updated May 2007

Acknowledgements

Acknowledgement and gratitude are given to the following for their participation in the development of Nevada's Adult Secondary Education Standards:

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The Nevada ASE Standards were developed in part by the following states' existing standards:

Arizona

Colorado

Iowa

Ohio

West Virginia

And:

Washoe County School District

Nevada Department of Education

The Department of Education, Delaware

California State Board of Education

U.S. Department of Education

Massachusetts Department of Education

National Education Technology Standards (NETS), an initiative of the International Society for Technology in Education

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Introduction

The purpose of the development of the Nevada State Low and High Adult Secondary Education (ASE) Content Standards is to provide integrated educational experiences that will prepare students for success by providing essential academic skills required for life and required to pass the official GED tests. These content standards cover the major areas of academic instruction in reading, writing, mathematics, social studies, and science.

The ASE Science Content Standards have been aligned to the Nevada K-12 standards to ensure that our adult learners have mastered the same content standards. These standards include essential skills that learners need to be scientifically literate in the twenty-first century. They also link science to technology and social impacts, and are foundational for promoting science literacy.

The sequence of the science standards includes both the low and high adult secondary education levels to accommodate instructors who may have combined levels in one class. Both levels of science are similarly organized: standards, indicators for each standard, suggested CASAS competencies that provide context for the standards and indicators, and customized program resources that have been aligned to the suggested CASAS competencies. CASAS competencies with an asterisk in front of the number indicate that the competency is tested in the CASAS assessments. Program resources in blue indicate that the program has resources. Program resources in red indicate that CASAS competency aligned resources were not found and, therefore, alternate resources were suggested.

NRS Low Adult Secondary Education Level 5 CASAS Advanced Adult Secondary Level D

CASAS scale scores: Reading: 236-245
Writing: 261-270
Math: 236-245

CASAS Assessments: LW 187, 188; ECS 17, 18; Functional Writing Assessment Picture Task, Forms 420 and 421

Secondary Assessments: D 505 & 506 Math; D 507 & 508 Economics; D 509 & 510 American Government; D 511 & 512 United States History; D 513 & 514 English/Language Arts; D 515 & 516 World History; D 529 & 530 Biological Science; D 531 & 532 Physical Science

CASAS Skill Level Descriptors:

Reading: Individuals at this level generally can perform tasks that involve written instructions in both familiar and unfamiliar situations. Other skills may include: reading and following multi-step directions; reading and interpreting manuals and legal forms; interpreting literary materials such as poetry and literature; creating and using tables and graphs; integrating information from multiple texts, charts, and graphs; evaluating and organizing information. They can also organize information and perform tasks that involve workplace communication skills.

Writing: Individuals at this level generally can perform writing tasks, such as most letters, logs, memos, and forms, with reasonable accuracy to meet most personal and employment-related needs. Other skills may include: taking notes from meetings and recorded messages; describing work or training procedures including basic safety directives, job aids, and maintenance instructions; stating personal and employment goals. Persons at this level generally are able to successfully complete the writing section of the Tests of General Educational Development (GED Tests).

Math: Individuals at this level generally can add, subtract, multiply, and divide whole numbers, fractions, and decimals. Other skills may include using mathematics in the workplace, such as calculating discounts; comparing prices to determine the best buys for goods and services; creating and using tables and graphs; computing standard measurement for length, width, perimeter, and area. They generally can organize, implement and perform multi-level calculations.

NOTE: GED Science tests problem solving and reasoning (fundamental understandings, unifying concepts and processes, science as inquiry, science and technology, science in personal and social perspectives, history and nature of science) within the areas of Life Science, Physical Science, and Earth and Space Science.

SCIENCE STANDARD: Science as Inquiry

The student will explain the nature of scientific inquiry and scientific ways of knowing. The student will be able to design, conduct, describe, and evaluate scientific investigations and interpret and apply concepts that unify the scientific disciplines. Upon exiting the low adult secondary level, the student will:

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Identify questions and concepts that guide scientific investigations</p>	<p>Government and Law 5.7.4 Interpret information about new technologies and scientific issues</p> <p>Learning to Learn *7.3.1 Identify a problem and its possible causes</p> <p>7.3.4 Utilize problem solving strategies, such as breaking down the problem into component parts and generating alternative or creative solutions</p>	<p>Government and Law 5.7.4 <i>Contemporary's GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 4, 7, 8.</i></p> <p>Learning to Learn *7.3.1 <i>Contemporary's GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 3.</i></p> <p>7.3.4 <i>Contemporary's GED Exercise Books: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2235-3, All.</i></p> <p><i>Workplace Essential Skills 2, Kentucky Educational Television/PBS, 2004, Seg 14, 21</i></p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Continued: Identify questions and concepts that guide scientific investigations</p>	<p>Learning to Learn 7.3.4 (continued)</p>	<p>Learning to Learn 7.3.4 (continued) <i>Math Sense: Comprehensive Math Review, New Readers Press, Series, 2003, ISBN: 1-56420-385-9, All.</i></p>
<p>Design and conduct a scientific investigation</p>	<p>Learning to Learn *7.3.2 Devise and implement a solution to an identified problem</p>	<p>Learning to Learn *7.3.2 <i>Contemporary's GED Exercise Books: Science, Contemporary, 2002, ISBN: 0-8092-2235-3, All.</i></p> <p><i>Mathematics: Algebra and Geometry, New Readers Press, 2002, ISBN: 1-56420-441-3, All.</i></p> <p><i>Workplace Essential Skills 1, Kentucky Educational Television/PBS, 2004, Seg 1, 2, 6, 7, 9, 10-12.</i></p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Continued: Design and conduct a scientific investigation</p>	<p>Learning to Learn *7.3.3 Evaluate the outcome of an implemented solution and suggest modifications to the solution as needed</p>	<p>Learning to Learn *7.3.3 <i>Contemporary's GED Exercise Books: Science, Contemporary, 2002, ISBN: 0-8092-2235-3, All.</i></p> <p><i>Aztec Courseware, Aztec Adult Integrated Learning Series, Software, 1999, Ut 15.</i></p> <p><i>Mathematics: Algebra and Geometry, New Readers Press, 2002, ISBN: 1-56420-441-3, All.</i></p>
<p>Communicate and defend a scientific argument</p>	<p>Government and Law *5.1.6 Communicate one's opinions on a current issue</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p> <p>*7.3.1 Identify a problem and its possible causes</p>	<p>Government and Law *5.1.6 <i>Contemporary's GED: Language Arts, Writing, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2228-0, All.</i></p> <p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</i></p> <p>*7.3.1 <i>Contemporary's GED: Science, Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 3.</i></p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Describe the influence of ethics on scientific enterprise</p>	<p>Government and Law *5.1.6 Communicate one's opinions on a current issue</p> <p>5.7.4 Interpret information about new technologies and scientific issues</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law *5.1.6 <i>Contemporary's GED: Language Arts, Writing</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2228-0, All.</p> <p>5.7.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 4, 7, 8.</p> <p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>
<p>Employ graphs, tables, and maps in making arguments and drawing conclusions</p>	<p>Government and Law *5.1.6 Communicate one's opinions on a current issue</p> <p>Computation *6.7.4 Interpret data given in a circle graph</p>	<p>Government and Law *5.1.6 <i>Contemporary's GED: Language Arts, Writing</i>, Contemporary, 2002, ISBN: 0-8092-2228-0, All.</p> <p>Computation *6.7.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 11.</p>

SCIENCE STANDARD: Science and Technology

The student will describe the impact of science and technology on human activity and the environment Upon exiting the low adult secondary level, the student will:

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Describe the impacts of science and technology in terms of costs and benefits to society</p>	<p>Government and Law *5.1.6 Communicate one's opinions on a current issue</p> <p>5.7.4 Interpret information about new technologies and scientific issues</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law *5.1.6 <i>Contemporary's GED: Language Arts, Writing</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2228-0, All.</p> <p>5.7.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 4, 7, 8.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Analyze the impacts of various scientific and technological developments</p>	<p>Government and Law 5.7.1 Interpret information about environmental issues</p> <p>5.7.4 Interpret information about new technologies and scientific issues</p>	<p>Government and Law 5.7.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 5, 7.</p> <p>5.7.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 4, 7, 8.</p>
<p>Explain how consumption patterns, conservation efforts, and cultural or social practices in countries have varying environmental impacts</p>	<p>Government and Law 5.7.1 Interpret information about environmental issues</p> <p>5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn 7.2.3 Make comparisons, differentiating among, sorting, and classifying items, information, or ideas</p>	<p>Government and Law 5.7.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 5, 7.</p> <p>5.7.3 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>Learning to Learn 7.2.3 <i>Contemporary's GED: Language Arts, Reading</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2231-0, Ch 5.</p>
<p>Give examples of how scientific knowledge often moves forward with technological advances</p>	<p>Government and Law 5.7.4 Interpret information about new technologies and scientific issues</p>	<p>Government and Law 5.7.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 4, 7, 8.</p>

SCIENCE STANDARD: Life Science

The student will examine the characteristics of living things, the diversity of life and how organisms change over time in terms of biological evolution and genetics. The student will understand the interrelationships of matter and energy in living organisms and the interactions of living organisms with their environments. Upon exiting the low adult secondary level, the student will:

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Describe cell structures and their functions</p>	<p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>
<p>Describe how a single-celled organism carries out the function of each of the systems found in multi-celled organisms</p>	<p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Explain the processes of photosynthesis and respiration in the interdependency of plants and animals</p>	<p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>
<p>Compare the purpose and process of mitosis with the purpose and process of meiosis</p>	<p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>
<p>Describe how energy is used in maintenance, repair, growth, and development of cells</p>	<p>Government and Law 5.7.2 Interpret information related to physics, including energy</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p>	<p>Government and Law 5.7.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Predict how change in an environmental factor can affect the success or failure of a population to survive</p>	<p>Government and Law 5.7.1 Interpret information about environmental issues</p> <p>5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 5, 7.</p> <p>5.7.3 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>
<p>Identify the relationship of DNA, genes and chromosomes and explain how a mutation affects this relationship</p>	<p>Government and Law 5.7.4 Interpret information about new technologies and scientific issues</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 4, 7, 8.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Demonstrate ability to predict patterns of inheritance</p>	<p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p> <p>*7.2.4 Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary</p>	<p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p> <p>*7.2.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1-3.</p>
<p>Explain how organisms can be classified based on evolutionary relationships</p>	<p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>7.2.3 Make comparisons, differentiating among, sorting, and classifying items, information, or ideas</p>	<p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.3 <i>Contemporary's GED: Language Arts, Reading</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2231-0, Ch 5.</p>
<p>Describe the unique geologic, hydrologic, climactic, and biological characteristics of Nevada's bioregions</p>	<p>Government and Law 5.7.3 Interpret information about earth-related sciences</p>	<p>Government and Law 5.7.3 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p>

SCIENCE STANDARD: Physical Science

The student will demonstrate an understanding the nature of matter and energy, including the structure of atoms, the structure and properties of matter, chemical reactions, motion and forces, and interactions of energy and matter. Upon exiting the low adult secondary level, the student will:

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Demonstrate that atomic structure explains the properties and behavior of matter</p>	<p>Government and Law 5.7.2 Interpret information related to physics, including energy</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</p> <p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>
<p>Differentiate among elements, atoms and compounds and explain their relationships to each other</p>	<p>Government and Law 5.7.2 Interpret information related to physics, including energy</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</p> <p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Explain how elements in the periodic table are arranged into groups and periods by repeating patterns and relationships</p>	<p>Government and Law 5.7.2 Interpret information related to physics, including energy</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</p> <p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>
<p>Use the periodic table to predict the properties of elements and compounds</p>	<p>Government and Law 5.7.2 Interpret information related to physics, including energy</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p>	<p>Government and Law 5.7.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p>
<p>Determine the physical and chemical properties of a substance through observation, experimentation and measurement</p>	<p>Government and Law 5.7.2 Interpret information related to physics, including energy</p>	<p>Government and Law 5.7.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Continued: Determine the physical and chemical properties of a substance through observation, experimentation and measurement</p>	<p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>
<p>Explain how atoms bond with one another by transferring or sharing electrons</p>	<p>Government and Law 5.7.2 Interpret information related to physics, including energy</p>	<p>Government and Law 5.7.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</p>
<p>Explain how the sum of energy and matter in systems remains the same despite transference of energy and change in matter</p>	<p>Government and Law 5.7.2 Interpret information related to physics, including energy</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

SCIENCE STANDARD: Earth and Space Science

The student will understand the composition, formative processes, and history of the Earth, the solar system, and the universe. Upon exiting the low adult secondary level, the student will:

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Suggest ways in which events like floods, droughts, earthquakes, heat waves, storms, sunspots, and novas affect living organisms</p>	<p>Government and Law 5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.3 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>
<p>Explain the principles of hydrology, including surface and ground water flows, aquifers, percolation, desalinization and sources of water contamination and pollution</p>	<p>Government and Law 5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p>	<p>Government and Law 5.7.3 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Use the theory of plate tectonics to explain the relationship among volcanoes, earthquakes, mid-ocean ridges and deep sea trenches</p>	<p>Government and Law 5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.3 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>
<p>Describe how these forces shape the Earth: glaciations, landslides, volcanoes, earthquakes, and wind and water erosion</p>	<p>Government and Law 5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.3 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>
<p>Differentiate among theories of the origin of: the universe (Big Bang Theory), the solar system (nebular dust and gas), and life forms (evolution and creation)</p>	<p>Government and Law 5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn 7.2.3 Make comparisons, differentiating among, sorting, and classifying items, information, or ideas</p>	<p>Government and Law 5.7.3 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>Learning to Learn 7.2.3 <i>Contemporary's GED: Language Arts, Reading</i>, Contemporary, 2002, ISBN: 0-8092-2231-0, Ch 5.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Illustrate the Earth’s tilt, rotation and revolution and their effects on the seasons and the length of days</p>	<p>Government and Law 5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p>	<p>Government and Law 5.7.3 <i>Contemporary’s GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>Learning to Learn *7.2.1 <i>Contemporary’s GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p>
<p>Describe the role of the sun as the major source of the Earth’s energy, driving the Earth’s weather and climate</p>	<p>Government and Law 5.7.2 Interpret information related to physics, including energy</p> <p>5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.2 <i>Contemporary’s GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</p> <p>5.7.3 <i>Contemporary’s GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>Learning to Learn *7.2.2 <i>Contemporary’s GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Describe the role of the atmosphere in Earth’s greenhouse effect</p>	<p>Government and Law 5.7.1 Interpret information about environmental issues</p> <p>5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.1 <i>Contemporary’s GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 5, 7.</i></p> <p>5.7.3 <i>Contemporary’s GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</i></p> <p>Learning to Learn *7.2.2 <i>Contemporary’s GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</i></p>
<p>Describe common characteristics of stars and the processes involved in their formation and destruction.</p>	<p>Government and Law 5.7.2 Interpret information related to physics, including energy</p> <p>5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p>	<p>Government and Law 5.7.2 <i>Contemporary’s GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</i></p> <p>5.7.3 <i>Contemporary’s GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</i></p> <p>Learning to Learn *7.2.1 <i>Contemporary’s GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</i></p>

NRS High Adult Secondary Education Level 6 CASAS Advanced Adult Secondary Level E

CASAS scale scores: Reading: 246 and above
Writing: 271 and above
Math: 246 and above

***CASAS Assessments: LW 187, 188; ECS 17, 18; Functional Writing Assessment Picture Task, Forms 420 and 421**

Secondary Assessments: D 505 & 506 Math; D 507 & 508 Economics; D 509 & 510 American Government; D 511 & 512 United States History; D 513 & 514 English/Language Arts; D 515 & 516 World History; D 529 & 530 Biological Science; D 531 & 532 Physical Science

*Passing the GED Test or High School Diploma are the only measures of level completion for High ASE Level 6.

CASAS Skill Level Descriptors:

Reading: Individuals functioning at this skill level are able to read most written material encountered in the workplace, including forms, work procedures, and personal manuals. They can interpret technical information, training materials, and some technical manuals. They can interpret computer-generated materials in the form of databases and spreadsheets. They can read articles on unfamiliar topics written in more complex language. They can comprehend some college textbooks and apprenticeship manuals.

Writing: Individuals at this level generally can perform writing tasks, such as most letters, logs, memos, and forms, with reasonable accuracy to meet most personal and employment-related needs. Other skills may include taking notes from meetings and recorded messages, describing work or training procedures including basic safety directives, job aids, and maintenance instructions, and stating personal and employment goals. Persons at this level generally are able to successfully complete the writing section of the tests of General Educational Development (GED).

Mathematics: Individuals functioning at skill level E are able to apply multi-step operations involving percents; apply proportion and ratio; use decimal time; apply formulas to determine volume; devise formulas. They can apply these skills to: compare quantities such as changes in sales and production totals; compare relative quantities of material resources used; interpret and record time in decimal format (e.g. 1.4 hours); calculate volume of material required or used in manufacturing or construction; devise algebraic formulas to facilitate calculations.

NOTE: GED Science tests problem solving and reasoning (fundamental understandings, unifying concepts and processes, science as inquiry, science and technology, science in personal and social perspectives, history and nature of science) within the areas of Life Science, Physical Science, and Earth and Space Science.

SCIENCE STANDARD: Science as Inquiry

The student will demonstrate understanding and apply the processes of scientific investigation; will demonstrate ability to design, conduct, describe and evaluate these investigations; and will demonstrate ability to understand and apply concepts that unify scientific disciplines. Upon exiting the high adult secondary level, the student will:

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Design and conduct an investigation of a scientific problem, and report results</p>	<p>Government and Law 5.7.4 Interpret information about new technologies and scientific issues</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p> <p>*7.3.1 Identify a problem and its possible causes</p>	<p>Government and Law 5.7.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 4, 7, 8.</p> <p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p> <p>*7.3.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Continued: Design and conduct an investigation of a scientific problem, and report results</p>	<p>Learning to Learn *7.3.2 Devise and implement a solution to an identified problem</p> <p>*7.3.3 Evaluate the outcome of an implemented solution and suggest modifications to the solution as needed</p>	<p>Learning to Learn *7.3.2 <i>Contemporary's GED Exercise Books: Science.</i> McGraw-Hill/Contemporary. 2002. ISBN: 0-8092-2235-3. All.</p> <p><i>GED Scoreboost. Writing: Essay Writing and Organizational Skills.</i> New Readers Press. 2002. ISBN: 1-56420-442-1. All.</p> <p><i>Aztec Courseware.</i> Aztec Software Associates. Multimedia. 1999. Ut 15.</p> <p>*7.3.3 <i>Contemporary's GED Exercise Books: Science.</i> McGraw-Hill/Contemporary. 2002. ISBN: 0-8092-2235-3. All.</p> <p><i>GED Scoreboost. Writing: Essay Writing and Organizational Skills.</i> New Readers Press. 2002. ISBN: 1-56420-442-1. All</p> <p><i>Aztec Courseware.</i> Aztec Software Associates. Multimedia. 1999. Ut 15.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Analyze an argument by reviewing current scientific understanding, weighing the evidence and examining the logic so as to determine the validity of the argument</p>	<p>Government and Law 5.7.1 Interpret information about environmental issues</p> <p>5.7.4 Interpret information about new technologies and scientific issues</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p> <p>7.2.3 Make comparisons, differentiating among, sorting, and classifying items, information, or ideas</p> <p>*7.2.4 Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary</p>	<p>Government and Law 5.7.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 5, 7.</p> <p>5.7.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 4, 7, 8.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>. McGraw-Hill/Contemporary. 2002. ISBN: 0-8092-2230-2. Ch 1, 3.</p> <p>7.2.3 <i>Contemporary's GED: Language Arts, Reading</i>, Contemporary, 2002, ISBN: 0-8092-2231-0, Ch 5.</p> <p>*7.2.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1-3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Analyze a scientific presentation by weighing the evidence and examining the logic in order to reach a decision as to the reliability of the results</p>	<p>Government and Law 5.7.4 Interpret information about new technologies and scientific issues</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.4 Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary</p> <p>*7.2.5 Evaluate a situation, statement, or process, assembling information and providing evidence, making judgments, examining assumptions, and identifying contradictions</p>	<p>Government and Law 5.7.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 4, 7, 8.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1-3.</p> <p>*7.2.5 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Predict the effects of various factors on the equilibrium of a system</p>	<p>Government and Law 5.7.2 Interpret information related to physics, including energy</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.4 Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary</p> <p>*7.2.5 Evaluate a situation, statement, or process, assembling information and providing evidence, making judgments, examining assumptions, and identifying contradictions</p>	<p>Government and Law 5.7.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1-3.</p> <p>*7.2.5 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

SCIENCE STANDARD: Science and Technology

The student will describe the impact of science and technology on human activity and the environment. Upon exiting the high adult secondary level, the student will:

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Choose a major invention or discovery of the past and illustrate how that development affected society and further scientific developments</p>	<p>Government and Law 5.7.3 Interpret information about earth-related sciences</p> <p>5.7.4 Interpret information about new technologies and scientific issues</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p> <p>7.2.3 Make comparisons, differentiating among, sorting, and classifying items, information, or ideas</p>	<p>Government and Law 5.7.3 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>5.7.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 4, 7, 8.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p> <p>7.2.3 <i>Contemporary's GED: Language Arts, Reading</i>, Contemporary, 2002, ISBN: 0-8092-2231-0, Ch 5.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Continued: Choose a major invention or discovery of the past and illustrate how that development affected society and further scientific developments</p>	<p>Learning to Learn *7.2.5 Evaluate a situation, statement, or process, assembling information and providing evidence, making judgments, examining assumptions, and identifying contradictions</p>	<p>Learning to Learn *7.2.5 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>
<p>Trace the development of a selected invention, theory or discovery from its inception to modern day</p>	<p>Government and Law 5.2.3 Interpret information about world history</p> <p>5.7.4 Interpret information about new technologies and scientific issues</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.2.3 <i>Contemporary's GED: Social Studies</i>. McGraw-Hill/Contemporary. 2002. ISBN: 0-8092-2229-9. Ch 5, 9, 10.</p> <p>5.7.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 4, 7, 8.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Propose and test a solution to an existing social or personal problem</p>	<p>Community Resources *2.7.3 Interpret information about social issues</p> <p>Government and Law *5.6.1 Interpret information about neighborhood or community problems and their solutions</p> <p>Learning to Learn *7.3.1 Identify a problem and its possible causes</p> <p>Learning to Learn *7.3.2 Devise and implement a solution to an identified problem</p>	<p>Community Resources *2.7.3 <i>Contemporary's GED: Social Studies.</i> McGraw-Hill/Contemporary. 2002. ISBN: 0-8092-2229-9. All.</p> <p>Government and Law *5.6.1 <i>Newsweek Education Program.</i> Newsweek Education. Textbook. 2006, All.</p> <p>Learning to Learn *7.3.1 <i>Contemporary's GED: Science,</i> McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 3.</p> <p>Learning to Learn *7.3.2 <i>Contemporary's GED Exercise Books: Science.</i> McGraw-Hill/Contemporary. 2002. ISBN: 0-8092-2235-3. All.</p> <p><i>GED Scoreboost. Writing: Essay Writing and Organizational Skills.</i> New Readers Press. 2002. ISBN: 1-56420-442-1. All.</p> <p><i>Aztec Courseware.</i> Aztec Software Associates. 1999. Ut 15.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Continued: Propose and test a solution to an existing social or personal problem</p>	<p>Learning to Learn *7.3.3 Evaluate the outcome of an implemented solution and suggest modifications to the solution as needed</p>	<p>Learning to Learn *7.3.3 <i>Contemporary's GED Exercise Books: Science. Contemporary. 2002. ISBN: 0-8092-2235-3. All.</i></p> <p><i>GED Scoreboost. Writing: Essay Writing and Organizational Skills. New Readers Press. 2002. ISBN: 1-56420-442-1. All</i></p> <p><i>Aztec Courseware. Aztec Software Associates. Multimedia. 1999. Ut 15.</i></p>
<p>Design a product to meet a personal or societal need; test the product and evaluate the test results</p>	<p>Learning to Learn 7.2.6 Generate ideas using divergent (brainstorming) and convergent (focus) approaches, and also through creative imagination</p> <p>*7.3.2 Devise and implement a solution to an identified problem</p>	<p>Learning to Learn 7.2.6 <i>Contemporary's GED: Science. McGraw-Hill/Contemporary. 2002. ISBN: 0-8092-2230-2. All.</i></p> <p>*7.3.2 <i>Contemporary's GED Exercise Books: Science. McGraw-Hill/Contemporary. 2002. ISBN: 0-8092-2235-3. All.</i></p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Continued: Design a product to meet a personal or societal need; test the product and evaluate the test results</p>	<p>Learning to Learn *7.3.2 (continued)</p> <p>*7.3.3 Evaluate the outcome of an implemented solution and suggest modifications to the solution as needed</p>	<p>Learning to Learn *7.3.2 (continued)</p> <p><i>GED Scoreboost. Writing: Essay Writing and Organizational Skills.</i> New Readers Press. 2002. ISBN: 1-56420-442-1. All.</p> <p><i>Aztec Courseware.</i> Aztec Software Associates. Multimedia. 1999. Ut 15.</p> <p>*7.3.3 <i>Contemporary's GED Exercise Books: Science.</i> McGraw-Hill/Contemporary. 2002. ISBN: 0-8092-2235-3. All.</p> <p><i>GED Scoreboost. Writing: Essay Writing and Organizational Skills.</i> New Readers Press. 2002. ISBN: 1-56420-442-1. All</p> <p><i>Aztec Courseware.</i> Aztec Software Associates. Multimedia. 1999. Ut 15.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Compare and contrast sudden disastrous natural occurrences and slower progressive natural hazards and their effects on human populations</p>	<p>Government and Law 5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p> <p>7.2.3 Make comparisons, differentiating among, sorting, and classifying items, information, or ideas</p>	<p>Government and Law 5.7.3 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p> <p>7.2.3 <i>Contemporary's GED: Language Arts, Reading</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2231-0, Ch 5.</p>
<p>Develop and suggest several possible ways to avoid the effects of natural disasters on human populations</p>	<p>Government and Law 5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.3 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Continued: Develop and suggest several possible ways to avoid the effects of natural disasters on human populations</p>	<p>Learning to Learn *7.3.2 Devise and implement a solution to an identified problem</p>	<p>Learning to Learn *7.3.2 <i>Contemporary's GED Exercise Books: Science.</i> McGraw-Hill/Contemporary. 2002. ISBN: 0-8092-2235-3. All.</p> <p><i>GED Scoreboost. Writing: Essay Writing and Organizational Skills.</i> New Readers Press. 2002. ISBN: 1-56420-442-1. All.</p> <p><i>Aztec Courseware.</i> Aztec Software Associates. Multimedia. 1999. Ut 15.</p>
<p>Identify the basic processes of natural ecosystems, and explain how these processes affect and are affected by humans</p>	<p>Government and Law 5.7.1 Interpret information about environmental issues</p> <p>5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationship</p>	<p>Government and Law 5.7.1 <i>Contemporary's GED: Science,</i> McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 5, 7.</p> <p>5.7.3 <i>Contemporary's GED: Science,</i> McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science,</i> McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

SCIENCE STANDARD: Life Science

The student will demonstrate understanding of the characteristics of living things, the diversity of life and how organisms change over time in terms of biological adaptations and genetics; will demonstrate understanding of the interrelationships of matter and energy in living organisms and the interactions of living organisms with their environments. Upon exiting the high adult secondary level, the student will:

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Explain how exposure to certain factors (e.g., sunlight, ozone, drugs, nitrates) may increase the rate of mutation and cause variances in human diversity</p>	<p>Government and Law 5.7.1 Interpret information about environmental issues</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 5, 7.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Describe how mutations contribute to genetic diversity</p>	<p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p> <p>*7.2.4 Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary</p>	<p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p> <p>*7.2.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1-3.</p>
<p>Using scientific evidence, illustrate that descent from common ancestors produced today's diversity of organisms</p>	<p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Continued: Using scientific evidence, illustrate that descent from common ancestors produced today’s diversity of organisms</p>	<p>Learning to Learn *7.2.4 Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary</p> <p>*7.2.5 Evaluate a situation, statement, or process, assembling information and providing evidence, making judgments, examining assumptions, and identifying contradictions</p>	<p>Learning to Learn *7.2.4 <i>Contemporary’s GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1-3.</p> <p>*7.2.5 <i>Contemporary’s GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>
<p>Describe how an environmental change could affect various species within an ecosystem</p>	<p>Government and Law 5.7.1 Interpret information about environmental issues</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.1 <i>Contemporary’s GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 5, 7.</p> <p>Learning to Learn *7.2.2 <i>Contemporary’s GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Continued: Describe how an environmental change could affect various species within an ecosystem</p>	<p>Learning to Learn *7.2.4 Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary</p> <p>*7.2.5 Evaluate a situation, statement, or process, assembling information and providing evidence, making judgments, examining assumptions, and identifying contradictions</p>	<p>Learning to Learn *7.2.4 <i>Contemporary's GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1-3.</i></p> <p>*7.2.5 <i>Contemporary's GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</i></p>

SCIENCE STANDARD: Physical Science

The student will demonstrate understanding of the nature of matter and energy including their forms, the changes they undergo and their interactions. Upon exiting the high adult secondary level, the student will:

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Demonstrate the use of conceptual models in science (e.g., graphs, diagrams, formulae, etc.)</p>	<p>Computation *6.6.5 Interpret diagrams, illustrations, and scale drawings</p> <p>*6.7.1 Interpret data given in a line graph</p> <p>*6.7.4 Interpret data given in a circle graph</p>	<p>Computation *6.6.5 <i>Aztec Courseware.</i> <i>Aztec Software Associates.</i> <i>Multimedia.</i> 1999. Ut 16.</p> <p><i>Workplace Essential Skills 1.</i> <i>Kentucky Educational Television/PBS</i> <i>Multimedia.</i> 2004. Seg 16, 18, 22.</p> <p><i>Math Exercises: Measurement.</i> <i>Contemporary.</i> 1994. ISBN: 0-8092-0751-6. All.</p> <p>*6.7.1 <i>Contemporary's GED: Science.</i> <i>McGraw-Hill/Contemporary.</i> 2002. ISBN: 0-8092-2230-2. Ch 2, 3, 5.</p> <p>*6.7.4 <i>Contemporary's GED: Science.</i> <i>McGraw-Hill/Contemporary.</i> 2002. ISBN: 0-8092-2230-2. Ch 11.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Continued: Demonstrate the use of conceptual models in science (e.g., graphs, diagrams, formulae, etc.)</p>	<p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p> <p>7.2.3 Make comparisons, differentiating among, sorting, and classifying items, information, or ideas</p>	<p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</i></p> <p>*7.2.2 <i>Contemporary's GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</i></p> <p>7.2.3 <i>Contemporary's GED: Language Arts, Reading, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2231-0, Ch 5.</i></p>
<p>Apply the universal laws of gravitation to predict how gravity force changes with a change of distance and/or mass</p>	<p>Government and Law 5.7.2 Interpret information related to physics, including energy</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.2 <i>Contemporary's GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</i></p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</i></p> <p>*7.2.2 <i>Contemporary's GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</i></p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Apply the 1st Law of Thermodynamics to explain how energy changes in a physical system</p>	<p>Government and Law 5.7.2 Interpret information related to physics, including energy</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>
<p>Describe a sequence of events that illustrates the 2nd Law of Thermodynamics</p>	<p>Government and Law 5.7.2 Interpret information related to physics, including energy</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Differentiate between gravitational and electromagnetic forces</p>	<p>Government and Law 5.7.2 Interpret information related to physics, including energy</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p> <p>7.2.3 Make comparisons, differentiating among, sorting, and classifying items, information, or ideas</p>	<p>Government and Law 5.7.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</p> <p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p> <p>7.2.3 <i>Contemporary's GED: Language Arts, Reading</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2231-0, Ch 5.</p>

SCIENCE STANDARD: Earth and Space Science

The student will demonstrate understanding of the composition, formative processes, and history of the Earth, the solar system and the universe. Upon exiting the high adult secondary level, the student will:

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Analyze and discuss the costs, benefits and consequences of natural resource exploration, development and consumption</p>	<p>Government and Law 5.7.1 Interpret information about environmental issues</p> <p>5.7.3 Interpret information about earth-related sciences</p> <p>5.7.4 Interpret information about new technologies and scientific issues</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 5, 7.</p> <p>5.7.3 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>5.7.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 4, 7, 8.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Analyze energy in the Earth’s system, including radioactive decay, geo-chemical cycles, gravitational energy, internal and external sources of energy, weather and climate</p>	<p>Government and Law 5.7.1 Interpret information about environmental issues</p> <p>5.7.2 Interpret information related to physics, including energy</p> <p>5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.1 <i>Contemporary’s GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 5, 7.</i></p> <p>5.7.2 <i>Contemporary’s GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</i></p> <p>5.7.3 <i>Contemporary’s GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</i></p> <p>Learning to Learn *7.2.1 <i>Contemporary’s GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</i></p> <p>*7.2.2 <i>Contemporary’s GED: Science, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</i></p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Describe the factors that influence the reuse, recycling and conservation of water</p>	<p>Government and Law 5.7.1 Interpret information about environmental issues</p> <p>5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn *7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p> <p>*7.2.4 Identify or make inferences through inductive and deductive reasoning to hypothesize, predict, conclude, and synthesize; distinguish fact from opinion, and determine what is mandatory and what is discretionary</p> <p>*7.3.1 Identify a problem and its possible causes</p>	<p>Government and Law 5.7.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 5, 7.</p> <p>5.7.3 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>Learning to Learn *7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p> <p>*7.2.4 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1-3.</p> <p>*7.3.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 3.</p>

Indicators	Suggested CASAS Competencies That Provide Context for Standards / Indicators	Program Resources
<p>Analyze how weather is influenced by natural and artificial features and by natural and artificial dynamic processes</p>	<p>Government and Law 5.7.1 Interpret information about environmental issues</p> <p>5.7.2 Interpret information related to physics, including energy</p> <p>5.7.3 Interpret information about earth-related sciences</p> <p>Learning to Learn *7.2.1 Identify and paraphrase pertinent information</p> <p>*7.2.2 Analyze a situation, statement, or process, identifying component elements and causal and part/whole relationships</p>	<p>Government and Law 5.7.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 5, 7.</p> <p>5.7.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 9, 10.</p> <p>5.7.3 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2, 3, 6, 11.</p> <p>Learning to Learn *7.2.1 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 2.</p> <p>*7.2.2 <i>Contemporary's GED: Science</i>, McGraw-Hill/Contemporary, 2002, ISBN: 0-8092-2230-2, Ch 1, 3.</p>