



Alignment Document  
State of Hawaii and Aventa Learning Life Science

**Life Science**  
2005-2007 Benchmark Blueprint

Strand	Standard	Topic	Benchmark	Unit Name	Course Topic Description
Biological Science	<b>BS.1</b> Discover, invent, and investigate using the skills necessary to engage in the scientific process	Scientific Inquiry	<b>BS.1.1</b> Describe how a testable hypothesis may need to be revised to guide a scientific investigation	Life	Exploring Life
			<b>BS.1.2</b> Design and safely implement an experiment, including the appropriate use of tools and techniques to organize, analyze, and validate data	Life	Exploring Life
			<b>BS.1.3</b> Defend and support conclusions, explanations, and arguments based on logic, scientific knowledge, and evidence from data	Life	Exploring Life
			<b>BS.1.4</b> Determine the connection(s) among hypotheses, scientific evidence, and conclusions	Life	Exploring Life
			<b>BS.1.5</b> Communicate the components of a scientific investigation, using appropriate techniques	Life	Exploring Life
			<b>BS.1.6</b> Engage in and explain the importance of peer review in science	Life	Exploring Life



			<b>BS.1.7</b> Revise, as needed, conclusions and explanations based on new evidence	Life	Exploring Life
			<b>BS.1.8</b> Describe the importance of ethics and integrity in scientific investigation	Life	Exploring Life
			<b>BS.1.9</b> Explain how scientific explanations must meet a set of established criteria to be considered valid	Life	Exploring Life
Biological Science	<b>BS.2</b> Understand that science, technology, and society are interrelated	Science, Technology, and Society	<b>BS.2.1</b> Explain how scientific advancements and emerging technology have influenced society	Life Life Life Life Life Life	Heredity and Evolution Diversity of Life Plants Animals Ecology The Human Body
			<b>BS.2.2</b> Compare the risks and benefits of potential solutions to technological issues	Life Life Life Life Life Life	Heredity and Evolution Diversity of Life Plants Animals Ecology The Human Body



Life and Environmental Sciences	<b>BS.3</b> Understand the unity, diversity, and interrelationships of organisms, including their relationship to cycles of matter and energy in the environment	Cycles of Matter and Energy	<p><b>BS.3.1</b> Describe biogeochemical cycles within ecosystems</p> <p><b>BS.3.2</b> Explain the chemical reactions that occur in photosynthesis and cellular respiration that result in cycling of energy</p> <p><b>BS.3.3</b> Explain how matter and energy flow through living systems and the physical environment</p> <p><b>BS.3.4</b> Explain dynamic equilibrium in organisms, populations, and ecosystems; explain the effect of equilibrium shifts</p>	Ecology  Life  Plants  Ecology  Ecology	Life and the Environment  Cell Processes  Plant Processes  Life and the Environment  Life and the Environment
Life and Environmental Sciences	<b>BS.4</b> Understand the structures and functions of living organisms and how organisms can be compared scientifically	Cells, Tissues, Organs, and Organ Systems	<p><b>BS.4.1</b> Describe different cell parts and their functions</p> <p><b>BS.4.2</b> Explain how cells are specialized into different tissues and organs</p> <p><b>BS.4.3</b> Differentiate between the processes of mitosis and meiosis</p> <p><b>BS.4.4</b> Describe how homeostatic balance occurs in cells and organisms</p> <p><b>BS.4.5</b> Describe the components and functions of a variety of macromolecules active in biological systems</p> <p><b>BS.4.6</b> Explain the organization of life on Earth using the modern classification system</p>	Life  The Human Body  Life  Life  The Human Body  The Diversity of Life	The Structure of Viruses and Cells  Bones, Muscles and Skin  Cell Reproduction  Cell Processes  Nutrients and Digestion  Classifying Living Things



<p>Life and Environmental Sciences</p>	<p><b>BS.5</b> Understand genetics and biological evolution and their impact on the unity and diversity of organisms</p>	<p>Biological Evolution</p>	<p><b>BS.5.1</b> Explain the theory of evolution and describe evidence that supports this theory</p> <p><b>BS.5.2</b> Explain the theory of natural selection</p> <p><b>BS.5.3</b> Explain the structural properties of DNA and the role of DNA in heredity and protein synthesis</p> <p><b>BS.5.4</b> Explain how Mendel's laws of heredity can be used to determine the traits of possible offspring</p> <p><b>BS.5.5</b> Explain chromosomal mutations, their possible causes, and their effects on genetic variation</p>	<p>Heredity and Evolution</p> <p>Heredity and Evolution</p> <p>Heredity and Evolution</p> <p>Heredity and Evolution</p> <p>Heredity and Evolution</p> <p>Heredity and Evolution</p>	<p>Evolution</p> <p>Evolution</p> <p>Heredity</p> <p>Heredity</p> <p>Heredity</p> <p>Evolution</p>
<p>Physical, Earth, and Space Sciences</p>	<p><b>BS.6</b> Understand the nature of matter and energy, forms of energy (including waves) and energy transformations, and their significance in understanding the structure of the universe</p>		<p>No benchmark for Biological Science</p>		
<p>Physical, Earth, and Space Sciences</p>	<p><b>BS.7</b> Understand the relationship between force, mass, and motion of objects; and know the major natural forces: gravitational, electric, and magnetic</p>		<p>No benchmark for Biological Science</p>		



Physical, Earth, and Space Sciences	<b>BS.8</b> Understand the Earth and its processes, the solar system, and the universe and its contents		No benchmark for Biological Science		
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