



Alignment Document
 State of Wyoming and Aventa Learning Physical Science
Physical Science

Standards	Topics	Benchmarks	Unit Name	Course Topic Description
<p>1 In the context of unifying concepts and processes, students develop an understanding of scientific content through inquiry. Science is a dynamic process; concepts and content are best learned through inquiry and investigation.</p>	<p>0 Earth, Space, and Physical Systems</p>	<p>1.7 Geochemical Cycles: Students describe the Earth as a closed system and demonstrate a conceptual understanding of the following systems: geosphere, hydrosphere, atmosphere, and biosphere. Students explain the role of energy in each of these systems, such as weather patterns, global climate, weathering, and plate tectonics.</p>		
		<p>1.8 Origin and Evolution of the Earth System: Students investigate geologic time through comparing rock sequences, the fossil record, and decay rates of radioactive isotopes.</p>		
		<p>1.9 Origin and Evolution of the Universe: Students examine evidence for the Big Bang Theory and recognize the immense time scale involved in comparison to human-perceived time. They describe the process of star and planet formation, planetary and stellar evolution including the fusion process, element formation, and dispersion.</p>		
		<p>1.10 Structure and Properties of Matter: Students describe the atomic structure of matter including subatomic particles, their</p>	Matter	Properties of Matter
			Matter	Physical and Chemical Changes

		<p>properties, and interactions. They recognize that elements are organized into groups in the periodic table based on their outermost electrons and these groups have similar properties. They explain chemical bonding in terms of the transfer or sharing of electrons between atoms. Students describe physical states of matter and phase changes. Students differentiate between chemical and physical properties, and chemical and physical changes.</p>	<p>Matter</p> <p>Atomic Structure and the Periodic Table</p> <p>Atomic Structure and the Periodic Table</p> <p>Atomic Structure and the Periodic Table</p> <p>Atomic Structure and the Periodic Table</p> <p>Chemical Bonding</p> <p>Chemical Bonding</p> <p>Chemical Bonding</p>	<p>States of Matter</p> <p>Atomic Model</p> <p>Structure of the Periodic Table</p> <p>Groups in the Periodic Table</p> <p>Periodic Trends</p> <p>Bonding</p> <p>Ionic Bonds</p> <p>Covalent Bonds</p>
		<p>1.11 Chemical Reactions: Students recognize that chemical reactions take place all around us. They realize that chemical reactions may release or consume energy, occur at different rates, and result in the formation of different substances. They identify the factors that affect reaction rates.</p>	<p>Chemical Reactions</p> <p>Chemical Reactions</p> <p>Chemical Reactions</p> <p>Chemical Reactions</p>	<p>Chemical Equations and Reactions</p> <p>Types of Reactions</p> <p>Energy and Chemical Reactions</p> <p>Reaction Rate</p>
		<p>1.12 Conservation of Energy and Increase in Disorder: Students demonstrate an understanding of the laws of conservation of mass and energy within the context of physical and chemical changes. They realize the tendency for systems to increase in disorder.</p>	<p>Chemical Reactions</p>	<p>Chemical Equations and Reactions</p>
		<p>1.13 Energy and Matter: Students demonstrate an understanding of types of</p>	<p>Energy & Simple Machines</p>	<p>Potential Energy</p>

		energy, energy transfer and transformations, and the relationship between energy and matter.	Energy & Simple Machines	Kinetic Energy
		1.14 Force and Motion: Students develop a conceptual understanding of Newton's Laws of Motion, gravity, electricity, and magnetism.	Energy & Simple Machines	Heat and Temperature
			Motion & Forces	Newton's First Law of Motion
			Motion & Forces	Gravity
			Motion & Forces	Newton's Third Law
			Electricity & Magnetism	Static Electricity
			Electricity & Magnetism	Conductors and Insulators
			Electricity & Magnetism	Electrical Current
2 Students demonstrate knowledge, skills, and habits of mind necessary to safely perform scientific inquiry. Inquiry is the foundation for the development of content, teaching students the use of processes of science that enable them to construct and develop their own knowledge. Inquiry requires appropriate field, classroom, and laboratory experiences with suitable facilities and equipment.		2.1 Students research scientific information and present findings through appropriate means.		
		2.2 Students use inquiry to conduct scientific investigations.	Doing Science	Introductory Physical Science Lab
			Doing Science	Bouncing Ball Lab
			Motion	Inertia Lab
			Forces	Acceleration of Gravity Lab
			Simple Machines	Bike Lab
		2.2.A Pose problems and identify questions and concepts to design and conduct an investigation.	Doing Science	Introductory Physical Science Lab
	Doing Science	Bouncing Ball Lab		
	Motion	Inertia Lab		
	Forces	Acceleration of Gravity Lab		

			Simple Machines	Bike Lab
	2.2.B Collect, organize, analyze and appropriately represent data.	Doing Science	Doing Science	Introductory Physical Science Lab
		Motion		Bouncing Ball Lab
		Forces		Inertia Lab
		Simple Machines		Acceleration of Gravity Lab
	2.2.C Give priority to evidence in drawing conclusions and making connections to scientific concepts.	Doing Science	Doing Science	Introductory Physical Science Lab
		Motion		Bouncing Ball Lab
		Forces		Inertia Lab
		Simple Machines		Acceleration of Gravity Lab
	2.2.D Clearly and accurately communicate the result of the investigation.	Doing Science	Doing Science	Introductory Physical Science Lab
		Motion		Bouncing Ball Lab
		Forces		Inertia Lab
		Simple Machines		Acceleration of Gravity Lab
	2.3 Students clearly and accurately communicate the result of their own work as well as information from other sources.			Bike Lab
	2.4 Students investigate the relationships between science and technology and the role of technological design in meeting human needs.			
	2.5 Students properly use appropriate			

		scientific and safety equipment, recognize hazards and safety symbols, and observe standard safety procedures.		
<p>3 Students recognize the nature of science, its history, and its connections to personal, social, economic, and political decisions. Historically, scientific events have had significant impacts on our cultural heritage.</p>		3.1 Students examine the nature and history of science.	Atomic Structure and the Periodic Table	Discovery of the Atom
			Atomic Structure and the Periodic Table	Development of the Modern Periodic Table
		3.1.A As scientific knowledge evolves, it impacts personal, social, economic, and political decisions.		
		3.1.B The historical misuse of scientific information to make personal, social, economic, and political decisions.		
		3.2 Students examine how scientific information is used to make decisions.	Doing Science	The Scientific Method
		3.2.A Interdisciplinary connections of the sciences and connections to other subject areas and career opportunities.		
		3.2.B The role of science in solving personal, local, national, and global problems.		
		3.2.C The origins, limitations, and conservation of natural resources, including Wyoming examples.		