



Alignment Document
State of Kansas and Aventa Learning Earth Science

Earth Science
2005-2007 Benchmark Blueprint

Standards	Topics	Benchmarks	Unit Name	Course Topic Description
1 The student will develop the abilities necessary to do scientific inquiry and develop an understanding of scientific inquiry.	1.1 The student will demonstrate the abilities necessary to do scientific inquiry.	1.1.1 actively engages in asking and evaluating research questions.		
		1.1.2 actively engages in investigations, including developing questions, gathering and analyzing data, and designing and conducting research		
		1.1.3 actively engages in using technological tools and mathematics in their own scientific investigations.		
		1.1.4 actively engages in conducting an inquiry, formulating and revising his or her scientific explanations and models (physical, conceptual, or mathematical) using logic and evidence, and recognizing that potential alternative explanations and models should be considered.		
		1.1.5 actively engages in communicating and defending the design, results, and conclusion of his/her investigation.		
4 The student will develop an understanding of energy in the earth system, geochemical cycles, the formation and organization of the earth system, the dynamics of the	4.1 The student will develop an understanding of the sources of energy that power the subsystems and cycles of the dynamic earth: the geosphere, hydrosphere, atmosphere and biosphere.	4.1.1 understands constructive and destructive processes, including weathering, erosion and deposition, dynamically reshape the surface of the earth.	Weathering, Erosion, and Deposition	Weathering and Erosion; Erosion, Deposition and Landscape Development
		4.1.2 understands the theory of Plate	Plate Tectonics	Plate Tectonics

earth/moon/sun system, and the organization and development of the universe.		Tectonics explains that internal energy drives the earth's ever changing structure.		
		4.1.3 The ultimate source of atmospheric and oceanic energy comes from the sun. Energy flow drives global climate and weather. Climate and weather are influenced by geographic features, cloud cover, and the earth's rotation.	World of Weather	Wind
		4.1.4 Understands the processes of water cycling through surface water (oceans, lakes, streams, glaciers), ground water (aquifers), and the atmosphere. (hydrological cycle)		
	4.2 The student will develop an understanding of the origin and development of the dynamic earth system.	4.2.1 understands geological time is used to understand the earth's past.	Geologic Time	Geological Time Scale
	4.3 The student will develop an understanding of dynamics of our solar system.	4.3.1 understands gravitational attraction of objects in the solar system keeps solar system objects in orbit.	Astronomy	Earth, Moon and Sun
		4.3.2 understands the relationship between the earth, moon, and sun explains the seasons, tides and moon phases.	Astronomy	Earth, Moon and Sun
		4.3.3 understands the relative sizes and distances of objects in the solar system.	Astronomy	Astronomical Distances
		4.3.4 understands the sun, earth, and other objects in the solar system formed from a nebular cloud of dust and gas.		
	4.4 The student will develop an understanding of the organization of the universe, and its development	4.4.1 understands stellar evolution.	Astronomy	The birth of a star
		4.4.2 understands the current scientific explanation of the origin and structure of the universe.	Astronomy	The Universe
		4.4.3 understand how the tools of astronomy have revolutionized the study of the universe.	Astronomy	Looking in to space



<p>5 The student will develop understandings about the relationship between science and technology.</p>	<p>5.1 The student will develop an understanding that technology is applied science.</p>	<p>5.1.1 understands technology is the application of scientific knowledge for functional purposes.</p> <p>5.1.2 understands creativity, imagination, and a broad scientific knowledge base are required to produce useful results.</p> <p>5.1.3 understands science advances new technologies. New technologies open new areas for scientific inquiry.</p>		
<p>7 The student will develop understanding of science as a human endeavor, the nature of scientific knowledge, and historical perspectives.</p>	<p>7.1 The student will develop an understanding that science is a human endeavor that uses models to describe and explain the physical universe.</p>	<p>7.1.1 demonstrates an understanding of science as both vocation and avocation.</p> <p>7.1.2 explains how science uses peer review, replication of methods, and norms of honesty.</p> <p>7.1.3 recognizes the universality of basic science concepts and the influence of personal and cultural beliefs that embed science in society.</p> <p>7.1.4 recognizes that society helps create the ways of thinking (mindsets) required for scientific advances, both toward training scientists and educating a populace to utilize benefits of science (e.g., standards of hygiene, attitudes toward forces of nature, etc.).</p> <p>7.1.5 understands there are many issues which involve morals, ethics, values or spiritual beliefs that go beyond what science can explain, but for which solid scientific literacy is useful.</p> <p>7.1.6 recognizes society's role in supporting topics of research and determining institutions where research is conducted.</p>		
	<p>7.2 The student will develop an understanding of the nature of</p>	<p>7.2.1 understands scientific knowledge describes and explains the physical world</p>	<p>Planet Earth</p>	<p>Think like an Earth Scientist (Scientific Method)</p>

	<p>scientific knowledge.</p>	<p>in terms of matter, energy, and forces. Scientific knowledge is provisional and is subject to change as new evidence becomes available.</p>		
		<p>7.2.2 understands scientific knowledge begins with empirical observations, which are the data (also called facts or evidence) upon which further scientific knowledge is built.</p>	Planet Earth	Think like an Earth Scientist (Scientific Method)
		<p>7.2.3 understands scientific knowledge consists of hypotheses, inferences, laws, and theories.</p>	Planet Earth	Think like an Earth Scientist (Scientific Method)
		<p>7.2.4 understands a testable hypothesis or inference must be subject to confirmation by empirical evidence</p>	Planet Earth	Think like an Earth Scientist (Scientific Method)
	<p>7.3 The student will understand science from historical perspectives.</p>	<p>7.3.1 demonstrates an understanding of the history of science.</p>		
		<p>7.3.2 demonstrates a knowledge that scientific method historically proceeded from an inductive approach rather than a deductive approach.</p>		