



Alignment Document

State of Texas And Aventa Learning Environmental Science

Environmental Science 2005-2007 Benchmark Blueprint

State Standard Number	State Standard Area / Description	Unit Name	Course Topic Description
112.44	Environmental Systems		
0	Scientific processes.		
112.44.1	The student, for at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.		
112.44.1.A	demonstrate safe practices during field and laboratory investigations;		
112.44.1.B	make wise choices in the use and conservation of resources and the disposal or recycling of materials.	Mineral and Energy Resources	Waste
112.44.2	The student uses scientific methods during field and laboratory investigations.	Introduction to Environmental Science	Tools of Environmental Science
112.44.2.A	plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology;	Introduction to Environmental Science	Tools of Environmental Science
112.44.2.B	collect data and make measurements with precision;	Introduction to Environmental Science	Tools of Environmental Science
112.44.2.C	organize, analyze, evaluate, make inferences, and predict trends from data;	Introduction to Environmental Science	Tools of Environmental Science
112.44.2.D	communicate valid conclusions.	Introduction to Environmental Science	Tools of Environmental Science
112.44.3	The student uses critical thinking and scientific problem solving to make informed decisions.	Introduction to Environmental Science	Tools of Environmental Science

112.44.3.A	analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;	Introduction to Environmental Science	Tools of Environmental Science
112.44.3.B	make responsible choices in selecting everyday products and services using scientific information;	Introduction to Environmental Science	Tools of Environmental Science
112.44.3.C	evaluate the impact of research on scientific thought, society, and the environment;	Introduction to Environmental Science	Tools of Environmental Science
112.44.3.D	describe the connection between environmental science and future careers;		
112.44.3.E	research and describe the history of environmental science and contributions of scientists.		
0	Science concepts.		
112.44.4	The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes.	Ecology	The Organization of Life
112.44.4.A	identify indigenous plants and animals, assess their role within an ecosystem, and compare them to plants and animals in other ecosystems and biomes;	Ecology	Biomes
112.44.4.B	make observations and compile data about fluctuations in abiotic cycles and evaluate the effects of abiotic factors on local ecosystems and biomes;		
112.44.4.C	evaluate the impact of human activity such as methods of pest control, hydroponics, organic gardening, or farming on ecosystems;	Populations	Biodiversity
112.44.4.D	predict how the introduction, removal, or reintroduction of an organism may alter the food chain and affect existing populations;	Ecology	How Ecosystems Work
112.44.4.E	predict changes that may occur in an ecosystem if biodiversity is increased or reduced.	Ecology	How Ecosystems Work
112.44.5	The student knows the interrelationships among the resources within the local environmental system.	Minerals and Energy Resources	Nonrenewable Energy & Renewable Energy
112.44.5.A	summarize methods of land use and management;	Water, Air and Land	Land

112.44.5.B	identify source, use, quality, and conservation of water;	Water, Air and Land	Water
112.44.5.C	document the use and conservation of both renewable and non-renewable resources;	Minerals and Energy Resources	Nonrenewable Energy & Renewable Energy
112.44.5.D	identify renewable and non-renewable resources that must come from outside an ecosystem such as food, water, lumber, and energy;	Introduction to Environmental Science	Science and The Environment
112.44.5.E	analyze and evaluate the economic significance and interdependence of components of the environmental system;	Water, Air and Land	Food and Agriculture
112.44.5.F	evaluate the impact of human activity and technology on land fertility and aquatic viability.	Ecology	Aquatic Ecosystems
112.44.6	The student knows the sources and flow of energy through an environmental system.	Ecology	How Ecosystems Work
112.44.6.A	summarize forms and sources of energy;	Ecology	How Ecosystems Work
112.44.6.B	explain the flow of energy in an ecosystem;	Ecology	How Ecosystems Work
112.44.6.C	investigate and explain the effects of energy transformations within an ecosystem;	Ecology	How Ecosystems Work
112.44.6.D	investigate and identify energy interactions in an ecosystem.	Ecology	How Ecosystems Work
112.44.7	The student knows the relationship between carrying capacity and changes in populations and ecosystems.	Populations	Understanding Populations
112.44.7.A	relate carrying capacity to population dynamics;	Populations	Understanding Populations
112.44.7.B	calculate exponential growth of populations;	Populations	Understanding Populations
112.44.7.C	evaluate the depletion of non-renewable resources and propose alternatives;	Minerals and Energy Resources	Nonrenewable Energy
112.44.7.D	analyze and make predictions about the impact on populations of geographic locales, natural events, diseases, and birth and death rates.	Populations	The Human Population
112.44.8	The student knows that environments change.	Ecology	How Ecosystems Work

112.44.8.A	analyze and describe the effects on environments of events such as fires, hurricanes, deforestation, mining, population growth, and municipal development;	Water, Air and Land	Land
112.44.8.B	explain how regional changes in the environment may have a global effect;	Populations	Biodiversity
112.44.8.C	describe how communities have restored an ecosystem;	Water, Air and Land	Land
112.44.8.D	examine and describe a habitat restoration or protection program.	Populations	Biodiversity