

Earth Science

State Standard Number	State Standard Area/Description	Unit Name	Course Topic Description
E	Earth Systems Science		
E.1	The history of the universe, solar system and Earth can be inferred from evidence left from past events		
E.1.a	Develop, communicate, and justify an evidence-based scientific explanation addressing questions about Earth's history	Geologic History	A History of Life on Earth
E.1.b	Analyze and interpret data regarding Earth's history using direct and indirect evidence	Geologic History	Relative Dating Absolute Dating
	Analyze and interpret data regarding the history of the universe using direct and indirect evidence	The Solar System	Origin of the Universe
E.1.d	Seek, evaluate, and use a variety of specialized resources available from libraries, the Internet, and the community to find scientific information on Earth's history		
E.1.e	Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate the history of the universe, solar system and Earth		
E.2	As part of the solar system, Earth interacts with various extraterrestrial forces and energies such as gravity, solar phenomena, electromagnetic radiation, and impact events that influence the planet's geosphere, atmosphere, and biosphere in a variety of ways		
E.2.a	Develop, communicate, and justify an evidence-based scientific explanation addressing questions around the extraterrestrial forces and energies that influence Earth	The Solar System	Planetary Motion

Earth Science

E.2.b	Analyze and interpret data regarding extraterrestrial forces and energies		
E.2.c	Clearly identify assumptions behind conclusions regarding extraterrestrial forces and energies and provide feedback on the validity of alternative explanations		
E.2.d	Use specific equipment, technology, and resources such as satellite imagery, global positioning systems (GPS), global information systems (GIS), telescopes, video and image libraries, and computers to explore the universe	The Solar System	Structure and Composition of the Universe
E.3	The theory of plate tectonics helps explain geological, physical, and geographical features of Earth		
E.3.a	Develop, communicate, and justify an evidence-based scientific explanation about the theory of plate tectonics and how it can be used to understand geological, physical, and geographical features of Earth	Plate Tectonics	The Theory of Plate Tectonics
E.3.b	Analyze and interpret data on plate tectonics and the geological, physical, and geographical features of Earth	Plate Tectonics	The Theory of Plate Tectonics Divergent Plate Boundaries Convergent Plate Boundaries
E.3.c	Understand the role plate tectonics has had with respect to long-term global changes in Earth's systems such as continental buildup, glaciations, sea-level fluctuations, and climate change	Plate Tectonics	The Theory of Plate Tectonics

Earth Science

E.3.d	Investigate and explain how new conceptual interpretations of data and innovative geophysical technologies led to the current theory of plate tectonics	Plate Tectonics	The Theory of Plate Tectonics
E.4	Climate is the result of energy transfer among interactions of the atmosphere, hydrosphere, geosphere, and biosphere		
E.4.a	Develop, communicate, and justify an evidence-based scientific explanation that shows climate is a result of energy transfer among the atmosphere, hydrosphere, geosphere and biosphere	The Atmosphere-Ocean System	Weather and Climate
E.4.b	Analyze and interpret data on Earth's climate	The Atmosphere-Ocean System	Weather and Climate
E.4.c	Explain how a combination of factors such as Earth's tilt, seasons, geophysical location, proximity to oceans, landmass location, latitude, and elevation determine a location's climate	The Atmosphere-Ocean System	Weather and Climate
E.4.d	Identify mechanisms in the past and present that have changed Earth's climate	The Atmosphere-Ocean System	The Atmosphere and Human Activity
E.4.e	Analyze the evidence and assumptions regarding climate change	The Atmosphere-Ocean System	Global Warming

Earth Science

E.4.f	Interpret evidence from weather stations, buoys, satellites, radars, ice and ocean sediment cores, tree rings, cave deposits, native knowledge, and other sources in relation to climate change		
E.5	There are costs, benefits, and consequences of exploration, development, and consumption of renewable and nonrenewable resources		
E.5.a	Develop, communicate, and justify an evidence-based scientific explanation regarding the costs and benefits of exploration, development, and consumption of renewable and nonrenewable resources	Earth's Natural Resources	Fossil Fuels
E.5.b	Evaluate positive and negative impacts on the geosphere, atmosphere, hydrosphere, and biosphere in regards to resource use	Earth's Natural Resources	Fossil Fuels Nuclear Energy Mining
E.5.c	Create a plan to reduce environmental impacts due to resource consumption	Earth's Natural Resources	Writing Assignment: Renewable Energy Project
E.5.d	Analyze and interpret data about the effect of resource consumption and development on resource reserves to draw conclusions about sustainable use	Earth's Natural Resources	Research Assignment: When Will We Run Out of Oil?
E.6	The interaction of Earth's surface with water, air, gravity, and biological activity causes physical and chemical changes		
E.6.a	Develop, communicate, and justify an evidence-based scientific explanation addressing questions regarding the interaction of Earth's surface with water, air, gravity, and biological activity	Covered throughout the course	

Earth Science

E.6.b	Analyze and interpret data, maps, and models concerning the direct and indirect evidence produced by physical and chemical changes that water, air, gravity, and biological activity create	Covered throughout the course	
E.6.c	Evaluate negative and positive consequences of physical and chemical changes on the geosphere	Landscape Features	Glaciers Karst Topography Eolian Systems
E.6.d	Use remote sensing and geographic information systems (GIS) data to interpret landforms and landform impact on human activity		
E.7	Natural hazards have local, national and global impacts such as volcanoes, earthquakes, tsunamis, hurricanes, and thunderstorms		
E.7.a	Develop, communicate, and justify an evidence-based scientific explanation regarding natural hazards, and explain their potential local and global impacts	Plate Tectonics	Earthquakes
E.7.b	Analyze and interpret data about natural hazards using direct and indirect evidence	Plate Tectonics	Earthquakes
E.7.c	Make predictions and draw conclusions about the impact of natural hazards on human activity - locally and globally	Plate Tectonics	Earthquakes