

Earth Science CR

State Standard Number	State Standard Area/Description	Unit Name	Course Topic Description
PD	Physical Dynamics		
PD.1	Students shall understand the physical dynamics of Earth.		
PD.1.ES.1	Describe the structure, origin, and evolution of the Earth's components:		
PD.1.ES.1.a	atmosphere	Atmosphere and Climate	Throughout entire unit
PD.1.ES.1.b	biosphere	Earth's Environment	Throughout entire unit
PD.1.ES.1.c	hydrosphere	The World's Water	Throughout entire unit
PD.1.ES.1.d	lithosphere	The Surface of the Earth	Throughout entire unit
PD.1.ES.2	Relate eras, epochs, and periods of Earth's history to geological development		
PD.1.ES.3	Determine the relative and absolute ages of rock layers	Geologic Time	Throughout Sections 2 and 3
PD.1.ES.4	Categorize the type and composition of various minerals	Earth's Materials	Throughout Section 2
PD.1.ES.5	Explain the processes of the rock cycle	Earth's Materials	Section 3, Parts K-M
PD.1.ES.6	Describe the processes of degradation by weathering and erosion	Surface of the Earth	Section 2, Parts B-G

Earth Science CR

PD.1.ES.7	Describe tectonic forces relating to internal energy production and convection currents		
PD.1.ES.8	Describe the relationships of degradation (a general lowering of the earth's surface by erosion or weathering) and tectonic forces:		
PD.1.ES.8.a	volcanoes	Interior of the Earth	Lab
PD.1.ES.8.b	earthquakes	Interior of the Earth	Lab
PD.1.ES.9	Construct and interpret information on topographic maps	Surface of the Earth	Section 1, Parts M-N
PD.1.ES.10	Describe the characteristics of each of the natural divisions of Arkansas:		
PD.1.ES.10.a	Ozark Plateau		
PD.1.ES.10.b	Arkansas River Valley		

Earth Science CR

PD.1.ES.10.c	Ouachita Mountains		
PD.1.ES.10.d	Coastal Plain		
PD.1.ES.10.e	Mississippi Alluvial Plain (Delta)		
PD.1.ES.10.f	Crowley's Ridge		
PD.1.ES.11	Describe the physical and chemical properties of water	World's Water	Throughout Unit
PD.1.ES.12	Compare and contrast characteristics of the oceans:	World's Water	Throughout Unit
PD.1.ES.12.a	composition	World's Water	Section 2, Parts B-C

Earth Science CR

PD.1.ES.12.b	physical features of the ocean floor	World's Water	Section 3, Part D
PD.1.ES.12.c	life within the ocean	World's Water	Section 3, Part E
PD.1.ES.12.d	lateral and vertical motion	World's Water	Section 2, Parts D-E
PD.1.ES.13	Investigate the evolution of the ocean floor		
PD.1.ES.14	Investigate the stratification of the ocean:		
PD.1.ES.14.a	colligative properties (depends on the ratio of the number of particles of solute and solvent in the solution, not the identity of the solute)	World's Water	Section 1, Part C

Earth Science CR

PD.1.ES.14.b	biological zonation (distribution of organisms in biogeographic zones)		
PD.1.ES.15	Predict the effects of ocean currents on climate	World's Water	Section 2, Parts D-E
PD.1.ES.16	Explain heat transfer in the atmosphere and its relationship to meteorological processes:	Atmosphere and Climate	Throughout Unit
PD.1.ES.16.a	pressure	Atmosphere and Climate	Section 2, Parts D-E
PD.1.ES.16.b	winds	World of Weather	Section 1, Parts G-H
PD.1.ES.16.c	evaporation	World of Weather	Section 1, Parts I-J

Earth Science CR

PD.1.ES.16.d	precipitation	World of Weather	Section 1, Parts I-J
PD.1.ES.17	Compare and contrast meteorological processes related to air masses, weather systems, and forecasting	World of Weather	Throughout Section 2
PD.1.ES.18	Construct and interpret weather maps	World of Weather	Throughout Section 3
PD.1.ES.19	Describe the cycling of materials and energy:		
PD.1.ES.19.a	nitrogen		
PD.1.ES.19.b	oxygen		

Earth Science CR

PD.1.ES.19.c	carbon		
PD.1.ES.19.d	phosphorous		
PD.1.ES.19.e	hydrological		
PD.1.ES.19.f	sulfur		
BD	Biological Dynamics		
BD.2	Students shall understand the biological dynamics of Earth.		

Earth Science CR

BD.2.ES.1	Compare and contrast biomes		
BD.2.ES.2	Describe relationships within a community:		
BD.2.ES.2.a	predation		
BD.2.ES.2.b	competition		
BD.2.ES.2.c	parasitism		
BD.2.ES.2.d	mutualism		

Earth Science CR

BD.2.ES.2.e	commensalism		
BD.2.ES.3	Differentiate between primary and secondary succession		
BD.2.ES.4	Construct a trophic-level pyramid (energy level)		
BD.2.ES.5	Construct a food chain		
BD.2.ES.6	Diagram a food web		
BD.2.ES.7	Compare and contrast food webs and food chains		

Earth Science CR

BD.2.ES.8	Describe biodiversity		
BD.2.ES.9	Explain how limiting factors affect populations and ecosystems		
BD.2.ES.10	Describe the natural selection process in populations		
SP	Social Perspectives		
SP.3	Students shall understand the impact of human activities on the environment.	Earth's Environment	Throughout Section 3
SP.3.ES.1	Explain the reciprocal relationships between Earth's processes (natural disasters) and human activities		

Earth Science CR

SP.3.ES.2	Investigate the relationships between human consumption of natural resources and the stewardship responsibility for reclamations including disposal of hazardous and non-hazardous waste		
SP.3.ES.3	Explain common problems related to water quality:		
SP.3.ES.3.a	conservation	World's Water	Section 1, Part L
SP.3.ES.3.b	usage	World's Water	Section 1, Part L
SP.3.ES.3.c	supply	World's Water	Section 1, Part L
SP.3.ES.3.d	treatment		

Earth Science CR

SP.3.ES.3.e	pollutants (point and non-point sources)		
SP.3.ES.4	Explain problems related to air quality:		
SP.3.ES.4.a	automobiles	Earth's Environment	Section 2, Parts C-D
SP.3.ES.4.b	industry	Earth's Environment	Section 2, Parts C-D
SP.3.ES.4.c	natural emissions		
SP.3.ES.5	Evaluate the impact of different points of view on health, population, resource, and environmental issues:		

Earth Science CR

SP.3.ES.5.a	governmental		
SP.3.ES.5.b	economic	Earth's Environment	Section 3, Part C
SP.3.ES.5.c	societal		
SP.3.ES.6	Research how political systems influence environmental decisions		
SP.3.ES.7	Investigate which federal and state agencies have responsibility for environmental monitoring and action		
SP.3.ES.8	Compare and contrast man-made environments and natural environments		

Earth Science CR

SP.3.ES.9	Evaluate personal and societal benefits when examining health, population, resource, and environmental issues		
SP.3.ES.10	Predict the long-term societal impact of specific health, population, resource, and environmental issues		
SP.3.ES.11	Investigate the effect of public policy decisions on health, population, resource, and environmental issues		
SP.3.ES.12	Explain the impact of factors such as birth rate, death rate, and migration rate on population changes		
SP.3.ES.13	Distinguish between developed and developing countries		
NS	Nature of Science		

Earth Science CR

NS.4	Students shall use mathematics, science equipment, and technology as tools to communicate and solve environmental science problems.		
NS.4.ES.1	Collect and analyze scientific data using appropriate mathematical calculations, figures and tables	Interior of the Earth	Lab
NS.4.ES.2	Use appropriate equipment and technology as tools for solving problems (e.g., microscopes, centrifuges, flexible arm cameras, computer software and hardware)		
NS.4.ES.3	Utilize technology to communicate research findings		
NS.5	Students shall describe the connections between pure and applied science.		
NS.5.ES.1	Compare and contrast environmental concepts in pure science and applied science		

Earth Science CR

NS.5.ES.2	Explain why scientists should work within ethical parameters		
NS.5.ES.3	Evaluate long-range plans concerning resource use and by-product disposal for environmental, economical and political impact		
NS.5.ES.4	Explain how the cyclical relationship between science and technology results in reciprocal advancements in science and technology		
NS.6	Students shall describe the various environmental careers and the training required for the selected career.		
NS.6.ES.1	Research and evaluate science careers using the following criteria		
NS.6.ES.1.a	educational requirements		



Earth Science CR

NS.6.ES.1.b	salary		
NS.6.ES.1.c	availability of jobs		
NS.6.ES.1.d	working conditions		