Layered Earth Meteorology Correlations For Arizona State Science Standards

Middle School: Grades 5-8

		Lesson Plans
Grade 6	**Strand 6: Earth and Space Science** **Concept 1: Describe the composition and interactions between the structure of the Earth and its atmosphere**	
PO 1.	Describe the properties and the composition of the layers of the atmosphere	A1-2
PO 4.	Analyze the interactions between the Earth's atmosphere and the Earth's bodies of water (water cycle)	D 1
	Concept 2: Understand the processes acting on the Earth and their interaction with the Earth systems	
PO 1.	Explain how water is cycled in nature	D1
PO 2.	Identify the distribution of water within or among the following: atmosphere, lithosphere, hydrosphere	D1
PO 3.	Analyze the effects that the bodies of water have on the climate of a region	E2
PO 4.	Analyze the following factors that affect climate: ocean currents, elevation, location	E2
PO 5.	Analyze the impact of large-scale weather systems on the local weather	D2
PO 6.	Create a weather system model that includes: the sun, the atmosphere, bodies of water	D1

High School: Grades 9-12

		Lesson Plans
	Strand 6: Earth and Space Science **Concept 1: Geochemical Cycles – Analyze the interactions between the Earth's structures, atmosphere, and geochemical cycles**	
PO 1.	Identify ways materials are cycled within the Earth system (i.e., carbon cycle, water cycle, rock cycle)	D1
	Concept 2: Understand the relationships between the Earth's land masses, oceans, and atmosphere	
PO 1.	Describe the flow of energy to and from the Earth	B1-4
PO 2.	Explain the mechanisms of heat transfer (convection, conduction, radiation) among the atmosphere, land masses, and oceans	B1
PO 3.	Distinguish between weather and climate	E1
PO 9.	Explain the effect of heat transfer on climate and weather	B1, D1-2, E2
PO 10.	Demonstrate the effect of the Earth's rotation (i.e., Coriolis effect) on the movement of water and air	C1
PO 11.	Describe the origin, life cycle, and behavior of weather systems (i.e., air mass, front, high and low systems, pressure gradients)	D2
PO 12.	Describe the conditions that cause severe weather (e.g., hurricanes, tornadoes, thunderstorms)	D4
PO 15.	List the factors that determine climate (e.g., altitude, latitude, water bodies, precipitation, prevailing winds, topography)	E2
PO 16.	Explain the causes and/or effects of climate changes over long periods of time (e.g., glaciation, desertification, solar activity, greenhouse effect)	F1-4