Layered Earth Geology 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
PO 3.	Explain the composition, properties, and structures of the oceans' zones and layers	A3
Grade 7	**Strand 6: Earth and Space Science** **Concept 1: Describe the composition and interactions between the structure of the Earth and its atmosphere**	
PO 1.	Classify rocks and minerals by the following observable properties: grain, color, texture, hardness	C1-3
PO 2.	Describe the properties and the composition of the following major layers of the Earth: crust, mantle, core	A2
PO 3.	Explain the following processes involved in the formation of the Earth's structure: erosion, deposition, plate tectonics, volcanism	B3, D1-4, F1
PO 4.	Describe how the rock and fossil record show that environmental conditions have changed over geologic and recent time	B1, G1
	Concept 2: Understand the processes acting on the Earth and their interaction with the Earth systems.	
PO 1.	Explain the rock cycle	C2
PO 2.	Distinguish the components and characteristics of the rock cycle for the following types of rocks: igneous, metamorphic, sedimentary	C3
PO 3.	Analyze the evidence that lithospheric plate movements occur	B1-3
PO 4.	Explain lithospheric plate movement as a result of convection	B3
PO 5.	Relate boundary movements to their resulting landforms, including: mountains, faults, rift valleys, trenches, volcanoes	B2, D1-2, E1, F1
PO 6.	Describe how earthquakes are measured	E3

High School: Grades 9-12		**Lesson Plans**
	Strand 6: Earth and Space Science **Concept 1: 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)	C2
PO 2.	Demonstrate how dynamic processes such as weathering, erosion,	C4, D1-4

	sedimentation, metamorphism, and orogenesis relate to redistribution of materials within the Earth system	
PO 3.	Explain how the rock cycle is related to plate tectonics	C2
PO 4.	Demonstrate how the hydrosphere links the biosphere, lithosphere, cryosphere, and atmosphere	A1
	Concept 2: Understand the relationships between the Earth's land masses, oceans and atmosphere	
PO 4.	Demonstrate the relationship between the Earth's internal convective heat flow and plate tectonics	B3
PO 5.	Demonstrate the relationships among earthquakes, volcanoes, mountain ranges, mid-oceanic ridges, deep sea trenches, and tectonic plates	B1-3, D1-2, E1, F1
PO 6.	Distinguish among seismic S, P, and surface waves	E2
PO 7.	Analyze the seismic evidence (S and P waves) used to determine the structure of the Earth	E2
PO 8.	Describe how radioactive decay maintains the Earth's internal temperature	A2
	Concept 3: Analyze the factors used to explain the history and evolution of the Earth	
PO 4.	Interpret a geologic time scale	G2
PO 5.	Distinguish between relative and absolute geologic dating techniques	G1
PO 8.	Sequence major events in the Earth's evolution (e.g., mass extinctions, glacial episodes) using relative and absolute dating data	G1, G3