

Layered Earth Geology Correlations

For New Jersey State Science Standards



Middle School: Grades 5-8

Lesson Plans

5.4.6.B.2	Earth's current structure has been influenced by both sporadic and gradual events. Changes caused by earthquakes and volcanic eruptions can be observed on a human time scale, but many geological processes, such as mountain building and the shifting of continents, are observed on a geologic time scale	B3, E1, F1
5.4.6.B.3	Moving water, wind, and ice continually shape Earth's surface by eroding rock and soil in some areas and depositing them in other areas	D1-4
5.4.6.B.4	Erosion plays an important role in the formation of soil, but too much erosion can wash away fertile soil from ecosystems, including farms	C4, D1
5.4.6.C.2	The rock cycle is a model of creation and transformation of rocks from one form (sedimentary, igneous, or metamorphic) to another. Rock families are determined by the origin and transformations of the rock	C2-3
5.4.8.C.1	Soil consists of weathered rocks and decomposed organic material from dead plants, animals, and bacteria. Soils are often found in layers, each having a different chemical composition and texture	C4
5.4.8.C.2	Physical and chemical changes take place in Earth materials when Earth features are modified through weathering and erosion	C4, D1-4
5.4.8.C.3	Earth's atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water vapor. The atmosphere has a different physical and chemical composition at different elevations	A1
5.4.6.D.1	Lithospheric plates consisting of continents and ocean floors move in response to movements in the mantle	B3
5.4.6.D.2	Earth's landforms are created through constructive (deposition) and destructive (erosion) processes	D1
5.4.8.D.1	Earth is layered with a lithosphere, a hot, convecting mantle, and a dense, metallic core	A2
5.4.8.D.2	Major geological events, such as earthquakes, volcanic eruptions, and mountain building, result from the motion of plates. Sea floor spreading, revealed in mapping of the Mid-Atlantic Ridge, and subduction zones are evidence for the theory of plate tectonics	B1-3, E1, F1

High School: Grades 9-12**Lesson Plans**

5.4.12.B.2	Relative dating uses index fossils and stratigraphic sequences to determine the sequence of geologic events	G1
5.4.12.C.1	Soils are at the interface of the Earth systems, linking together the biosphere, geosphere, atmosphere, and hydrosphere	A1
5.4.12.D.1	Convection currents in the upper mantle drive plate motion. Plates are pushed apart at spreading zones and pulled down into the crust at subduction zones	B3
5.4.12.D.2	Evidence from lava flows and ocean-floor rocks shows that Earth's magnetic field reverses (North – South) over geologic time	B2