

# Forces that shape the earth



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Plate Tectonics The forces that shape the earth begin beneath the lithosphere. Rock in the asthenosphere is hot enough to flow slowly. Heated rock rises, moves up toward the lithosphere, cools and circulates downward. Riding above this circulation system are the tectonic plates, enormous moving pieces of the earth's lithosphere. [pic] Plate Movement Tectonic Plates move in four different ways. When tectonic plates come into contact, changes on the earth's surface occur. 1. Divergent Boundary- Plates move apart, spreading horizontally. 2.

Convergent Boundary-plates collide causing either one plate to dive under the other or the edges of both plates crumple. 3. Transform Boundary- Plates slide past one another. [pic] Folds and Faults When two plates meet each other, they can cause a folding or cracking of the rock. The transformation of the crust by folding or cracking occurs very slowly, often only a few centimeters or inches a year. The rocks, which are under great pressure, become more flexible and bend or fold, create changes in the crust. [pic] Earthquakes As the plates grind or slip past each other at a fault, the earth shakes or trembles.

This sometimes violent movement of the earth is an earthquake. Volcanoes Magma, Gases and Water from the lower part of the crust or the mantle collect underground chambers. Eventually the materials pour out of a crack into the earth's surface. Most Volcanoes are found along the tectonic plate boundaries. [pic] Tsunami Some Earthquakes causes a tsunami a giant wave in the ocean. A tsunami can travel from the epicenter of a quake at speeds of up to 450 miles per hour, producing waves of 50 to 100 feet higher, [pic]

Weathering Refers to Physical and Chemical processes that change the characteristics of rock on or near the earth's surface.

Weathering occurs slowly over many years and even centuries. Weathering process create smaller and smaller pieces of rock called sediment. [pic]

Mechanical Weathering Processes that break rock into smaller pieces.

Mechanical weathering doesn't change the composition of the rock only its size. [pic] Chemical Weathering Chemical Weathering occurs when rock is changed into a new substance as a result in a interaction between elements in the air or water and the minerals in the rock. Decomposition, or breakup, can happen in several ways