

Plate Tectonic Effects: A Ground Shaking Tutorial Notes

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The Earth has a variety of land formations including _____, valleys and oceans. These land formations can change based on weathering and erosion. Remember that the **Earth is made up of four layers** including the uppermost crust, the _____, the outer core and _____ core. Within the _____ rock layer, the mantle, there are _____ currents that result in the _____ of liquid rock below the crust of the Earth. As the rock is heated, it rises and as it cools it _____ lower. This constant cycling causes convection currents that affect the crust above. The entire _____ layer of Earth, the crust can be either oceanic crust or _____ crust. The outer layers of the Earth are divided into _____ plates that move on top of a molten mantle. One of the most common results of plate movements that we observe are _____. There is a great amount of _____ at the plate boundaries where the _____ are stuck against one another. But remember below, the _____ is molten and moving; the rock above is trying to move with it but it can't because it is locked with another plate. When that _____ finally gives way, a tremendous amount of _____ is released which results in an _____. These waves of energy are called _____ waves. Depending on how much energy is _____ and how deep the earthquake occurs, will tell us how much _____ can occur on the surface. Scientists use an instrument called a _____ to measure and study these seismic waves. The strength of an earthquake is measured using a moment _____ scale.

Earthquakes can happen at any time and at any _____ but we tend to see them more commonly in certain areas. These areas of higher _____ activity are found where major plates meet on the Earth's surface. Remember that a plate is a large section of _____ and mantle that move and _____ with other plates. This movement of plates is called the theory of _____ tectonics. This theory states that the Earth's _____ is composed of major _____ that move on top of the _____. The major boundaries where plates meet are the most _____ active areas on the planet.

Volcanoes are found where the crust is _____ allowing lava to _____ from the magma below. Most volcanoes are found where tectonic plate boundaries are either _____ or divergent. Remember divergent boundaries are where two plate boundaries move _____ from each other. The Mid-Atlantic ridge, which is a divergent boundary, produces _____ above and below the ocean's surface. Convergent plate boundaries are where the two plates come _____ with one plate usually sliding _____ the other. Scattered around the Ring of _____ in the Pacific are volcanoes produced by _____ plate boundaries. An amazing effect of the moving plate is the development of _____ volcanoes. Hot spot volcanoes are unique amongst all volcanoes since they are the _____ of a large plate moving over a mass of magma. Hotspot volcanoes are found all over the _____ including the Galapagos Islands off the coast of South _____ and the _____ Caldera in Wyoming.

Mountains can be created by volcanism as you see in _____ volcanoes in Hawaii, but they can also be created where plates collide at _____ boundaries. The most impressive mountain range in the world is the _____ in Tibet near India.

The tectonic plates continue to _____ and since a few of them have continents, the continents move. This is known as _____ drift. Continents will be in new _____ in the future and have been in different _____ in the past. At one time, from about 335 million to 175 million years ago, the continents were connected as one land mass called _____.