

## Continental Drift & Plate Tectonics (Geology Unit-2 (contd.))

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Accdg. to the theory of continental drift, the world was made up of a single continent through most of geologic time. That continent eventually separated and drifted apart, forming into a seven continents that we have today.

First Comprehensive theory was suggested by German meteorologist Alfred Wegener in 1912. He suggested that continents consists of lighter rocks that rest on heavier crust material similar to the manner that iceberg float on water.

Wegener contended that the relative positions of the continents are not rigidly fixed but are slowly moving - at a rate of about one yard per century.

But this theory was not generally accepted.

### Plate tectonic Theory:

This theory was generally accepted and the scientists believe that Earth's surface is broken into a number of shifting plates, which average about 50 miles in thickness.

These plates move relative to each other.

Most of the active volcanoes are located along or near the boundaries between shifting plates and are called plate-boundary volcanoes.

The concept of plate tectonics was formulated in 1960s.

Accdg to this theory Earth has a rigid outer layer, known as lithosphere which is about 60 miles (100km) thick and overlies a plastic (moldable, partially molten) layer called asthenosphere.

The lithosphere is broken up into seven very large continental and ocean sized plates, six or seven medium sized regional plates and several small ones. These plates move relative to each other, typically at rates 5 to 10 cm per year and interact along the boundary where they converge, diverge or slip past each other.

Such interactions are thought to be responsible for most of the earth's seismic and volcanic activity, although earthquakes and volcanoes can occur in plate interiors

Ring of Fire: Ring of Fire is a long horse shoe-shaped earthquake prone belt of volcanoes and tectonic plate boundaries that fringes the Pacific ocean basin.

It is about 40000 km belt in length.

Volcanoes are associated with the belt throughout its length, for this reason it is called Ring of Fire.