

What is the Ring of Fire?

The Ring of Fire is a string of underwater volcanoes and earthquake sites around the edges of the Pacific Ocean.



An explosion near the summit of West Mata volcano within the Lau Basin throws ash and rock, while molten lava glows below. The image area is about six feet (1.8 meters) across in an eruptive zone about the length of a football field that runs along the summit. *Image courtesy of NSF and NOAA.*

Did you know that most of the active volcanoes on Earth are located underwater, along the aptly named Ring of Fire in the Pacific Ocean? The Ring of Fire includes more than 450 volcanoes. It stretches for nearly 25,000 miles, running in the shape of a horseshoe (as opposed to an actual ring) from the southern tip of South America, along the west coast of North America, across the Bering Strait, down through Japan, and into New Zealand.

The Ring of Fire is the result of plate tectonics. Much of the volcanic activity occurs along subduction zones which are convergent plate boundaries where two tectonic plates come together. The heavier plate is shoved (or subducted) under the other plate. When this happens, melting of the plates produces magma. The magma rises up through the overlying plate, erupting to the surface as a volcano.

Subduction zones are also where Earth's deepest ocean trenches are located and where deep earthquakes happen. The trenches form because as one plate subducts under another, it is bent downward. Earthquakes occur as the two plates scrape against each other and as the subducting plate bends.