

Inside Earth: Notes 3.1 Volcanoes and Plate Tectonics

A volcano is a weak spot in the crust where molten material, or magma, comes to the surface.

Magma is a molten mixture of rock-forming substances, gases, and water.

When magma reaches the surface, it is called lava.

Volcanoes and Plate Boundaries

Belts of volcanoes form along boundaries of Earth's plates. One such belt can be found around the margins of the Pacific Ocean. It is known as the Ring of Fire.

Diverging Boundaries

Most volcanoes can be found along divergent plate boundaries, such as mid-ocean ridges and on land at rift valleys.

Converging Boundaries

Many volcanoes form at subduction zones, when some of the rock above the subducting plate melts to form magma. This magma is less dense and rises towards the surface.

When oceanic plates are involved in the subduction, an island arc, or a string of islands may form.

Examples: the Aleutian & Caribbean islands, the Philippines, Japan, and New Zealand

When subduction occurs along a continental plate, volcanoes form like those in the Andes of South America and the Pacific Northwest of the US.

Hot Spots

Some volcanoes form at "hot spots," where magma erupts through the crust and reaches the surface, this may occur in the middle of a plate (Hawaiian Islands) or at the edges.