

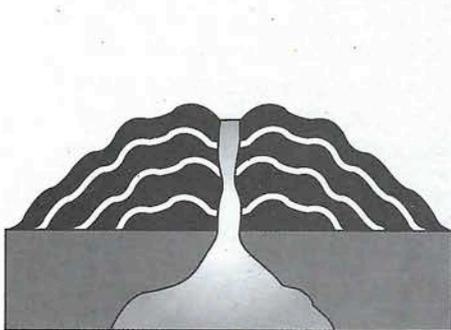
# Volcanoes

A **volcano** is an opening in the earth's crust where molten rock, ash, and gas burst forth from the mantle of the earth. Molten rock at the surface of the earth is called **lava**, while molten rock under the crust in the mantle is called **magma**. Volcanoes can spew molten rock, ash, gas, or any combination of those three.

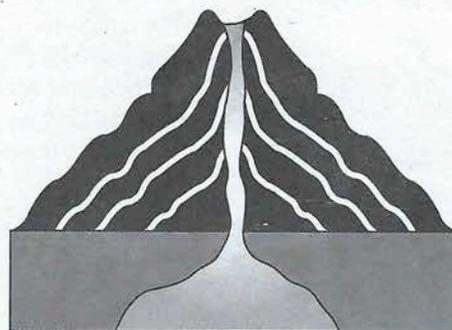
Volcanoes are usually found near plate boundaries, either on land or under the sea. Volcanoes occur when plates push together or pull apart. Volcanoes can also be caused by **hot spots**. Hot spots are places in the mantle, not near a plate boundary, where the magma burns through the plate. Because plates move very slowly, this slow movement can sometimes allow heat from magma to be concentrated in one spot long enough to burn through a plate. When this happens at the seafloor, it can form a line of volcanic mountains. The Hawaiian Islands chain in the Pacific Ocean was formed this way.

Some volcanoes **erupt** (burst with great force) quietly, with gas floating out or lava flowing down the sides. Most volcanoes, however, erupt with great force. **Active** volcanoes can erupt at any time. Earth has between 500 and 1,500 active volcanoes with fifty to seventy eruptions per year. **Dormant** (sleeping) volcanoes have not erupted for thousands of years. An **extinct** volcano no longer erupts.

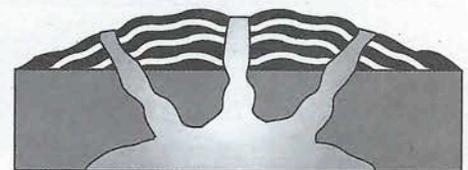
The shape of a volcano depends on how thick the magma is and how much force was present when the volcano formed. Volcanoes can be classified as cinder cone, composite, or shield. A **cinder cone** is the simplest of these, formed after a very strong, gas-charged explosion falls back to earth as cinders to create a cone or oval shape around the eruption point. A **composite volcano** erupts on a regular basis so is built of layers of ash, cinder, rock, and lava flows. A **shield volcano** is built almost completely of lava flows. It has several craters and is broader. It is gently sloping and formed from thin, runny magma.



cinder cone volcano



composite volcano



shield volcano

## Answer the Following

1. What is the difference between magma and lava? \_\_\_\_\_  
\_\_\_\_\_
2. What is a "hot spot"? \_\_\_\_\_  
\_\_\_\_\_