

IV. Volcanic Landforms

- A. Volcanoes have created some of Earth's most spectacular landforms.
- B. Volcanic activity also formed the rock on the ocean floor.
- C. Landforms From Lava and Ash: Volcanic eruptions create landforms made of lava, ash, & other materials.

These landforms include shield volcanoes, cinder cone volcanoes, composite volcanoes, and lava plateaus.

1. **Shield Volcano:** a wide, gently sloping mountain made of layers of lava and formed by quiet eruptions.
2. **Cinder Cone Volcano:** a steep, cone shaped hill or small mountain made of volcanic ash, cinders, & bombs piled up around a volcano's opening.
3. **Composite Volcano:** a tall, cone shaped mountain in which layers of lava alternate with layers of ash and other volcanic material.
4. **Lava Plateaus:** high level areas of land formed from thin, runny lava cooling and solidifying over millions of years.
5. **Calderas:** large holes at the top of volcanoes formed when the roof of a volcano's magma chamber collapses from an explosive eruption.
6. **Soils from lava and ash:** Volcanic soils are initially barren; over time the hard surface breaks down to form rich, fertile soil.

B. **Landforms From Magma:** Sometimes magma forces its way through cracks in the upper crust, but fails to reach the surface. There, the magma cools into rock, over time rain, ice, & wind strip the layers and expose it.

1. **Volcanic Neck:** a deposit of hardened magma in a volcano's pipe.
2. **Dike:** a slab of volcanic rock formed when magma forces itself across rock layers.
3. **Sill:** A slab of volcanic rock formed when magma squeezes between layers of rock.
4. **Batholith:** a mass of rock formed when a large body of magma cools inside the crust.
5. **Dome Mountains:** mountains that form when uplift pushes a batholith or smaller body of hardened magma toward the surface, forcing the layers to bend upward into a dome shape.

C. **Geothermal Activity:** The word geothermal comes from the Greek geo meaning "Earth" and therme meaning "heat"; In **geothermal activity**, magma a few kilometers beneath Earth's surface heats up underground water.

A variety of **geothermal features** occur in volcanic areas.

1. **Hot Springs:** form when ground water is heated by magma; hot water rises to the surface and collects in a natural pool.
2. **Geysers:** a fountain of water and steam that builds up pressure underground & erupts at regular intervals.
3. **Geothermal Energy:** heat from Earth's interior; used as a source of electricity.