The Process of Volcano Eruption

Magma Formation: Heat from the Earth's mantle melts rock, forming magma beneath the crust.

Magma Rise: Because magma is less dense than surrounding rock, it rises through cracks and magma chambers toward the surface.

Pressure Build-up: Gases dissolved in the magma (like water vapor, CO_2) build up pressure inside the magma chamber.

Fracturing of Rock: Increased pressure causes cracks and fractures in the Earth's crust, creating pathways for magma to move upward.

Eruption: Magma, along with gases and ash, is forcefully expelled through a volcanic vent, resulting in an eruption.

Weathering

Physical ->Temperature, weather, freeze-thaw action

Chemical -> Acids, Acid Rain

Biological -> Buildings, deforestaion

Example of Chemical Reaction: Sulfuric Rain + Calcium Carbonate -> Calcium Sulfate + Water + Carbon Dioxide

Rocks Cycle

Magma cools and solidifies → forms Igneous rock

Igneous rock breaks down into sediments through weathering and erosion → sediments get compacted

Sedimentary rock is subjected to heat and pressure deep underg-round

Metamorphic rock melts into magma

https://media.istockphoto.com/id/1308852822/vector/rock-cycle-transformation-and-stone-formation-process-labeled-outline-diagram.jpg?s=170667a&w=is&k=20&c=Ha2S_RB9XfXXeSS3F6JwBeBLk-EpQ-_5lL1sCL6xHGqE=

Igneous → Sedimentary → Metamorphic → Magma → Igneous, and so on, through processes like cooling, weathering, compaction, heat & pressure, and melting.

The Layers of Earth

https://kidspressmagazine.com/wp-content/uploads/2014/05/dreams-time_xl_14743982.jpg

Magma VS Lava

Magma is molten rock that is still beneath the Earth's surface.

Lava is molten rock that has reached the Earth's surface during a volcanic eruption.

Magma contains gases, crystals, and dissolved minerals.

Some gases escape when it becomes lava.

Types of Rocks

Igneous -> Formed from cooling and solidification of magma or lava. Ex: Basalt, Granite.

Sedimentary -> Formed from layers of sediments that are compacted and cemented over time. Ex: Limestone, Sandstone.

Metamorphic -> Formed when existing rocks are changed by heat and pressure. Ex: Marble, Gneiss.

Functions of Rocks

Build Earth's Crust

Provide Natural Recources

Support Plant Life

Constructions

Record Earth's History (Fossil)

Functions of Seismograph

Detects ground vibrations caused by earthquakes or other seismic activities.

Measures the strength (magnitude) of an earthquake.

Records the duration and timing of seismic waves.

Helps determine the earthquake's epicenter (location on Earth's surface directly above the origin).

Assists in early warning systems to reduce damage and save lives.

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Published 2nd June, 2025.
Last updated 2nd June, 2025.
Page 1 of 1.

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