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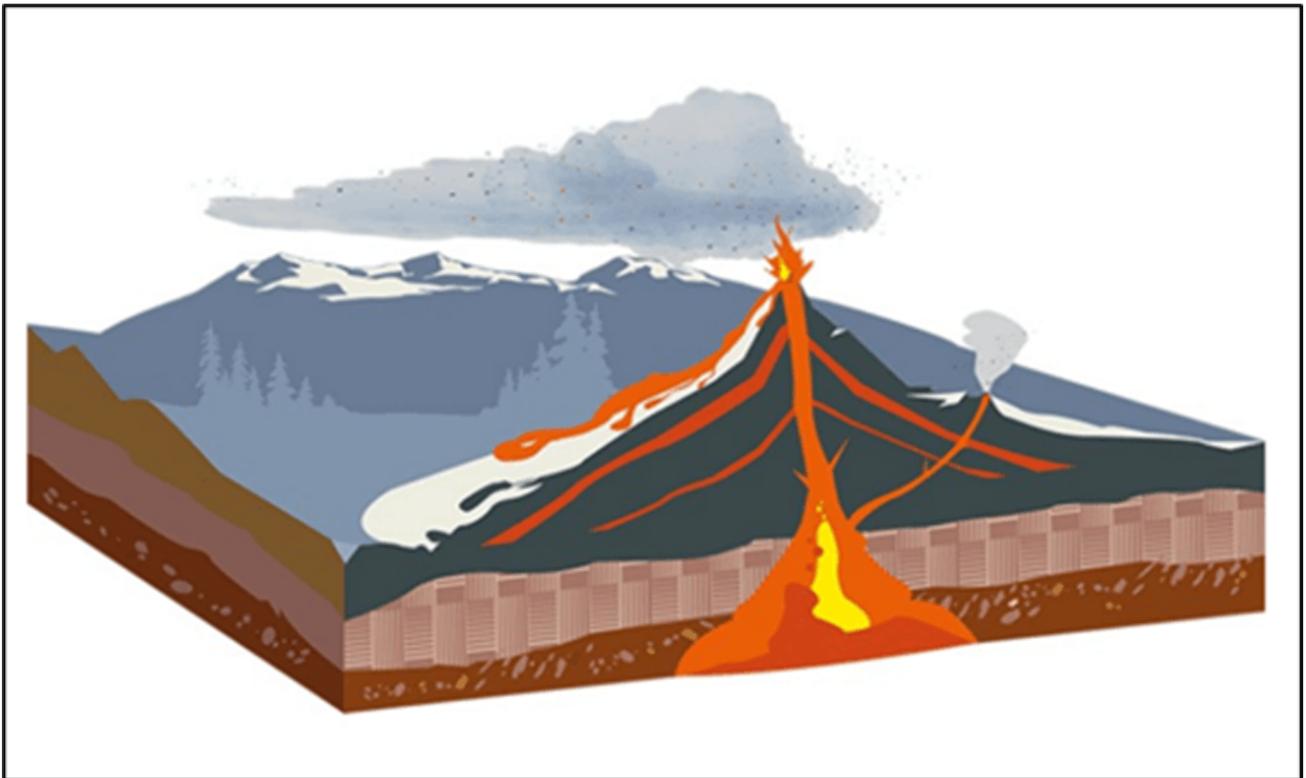
Types of Volcanoes, with the Eruption of Volcano, Magma Becomes Lava (For CBSE, ICSE, IAS, NET, NRA 2022)

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Types of Volcanoes

- A volcano is a land-form, a mountain, where molten rocks erupt through the surface of the planet.
- Volcanoes are some of the hottest (and coolest) things on the face of the Earth, but not all volcanoes are alike – and not all are like what you see in the movies.

With the Eruption of Volcano, Magma Becomes Lava



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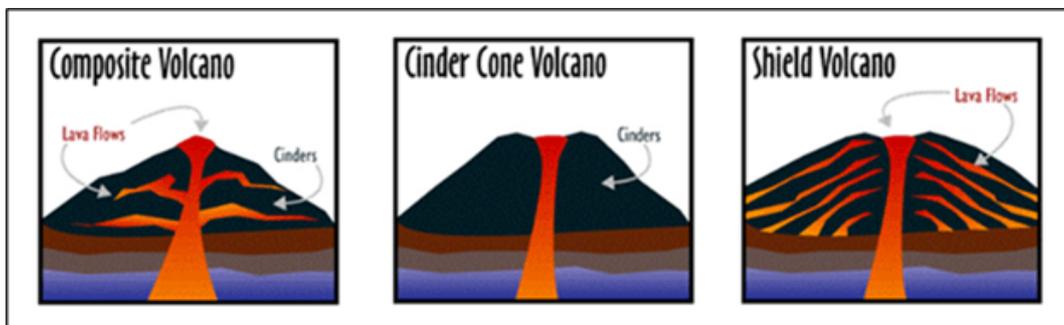
- Volcano Mountain opens downwards to a pool of molten rocks below the surface of the earth.
- When the pressure builds up in the earth's crust, eruptions occur.
- Gasses and rock shoot up through the opening and spill over or fill the air with lava fragments. The volcano eruption can cause lateral blasts, hot ash, and lava flow, mud-slides and more.

Categories of Volcanoes

- Active
- Dormant
- Extinct

- An **active volcano** is one which is recently erupted and there is a possibility that it may erupt soon.
- A **dormant volcano** is one which has not erupted in a long time but there is a possibility it can erupt in the future.
- An **extinct volcano** is one which has erupted thousands of years ago and there's no possibility of an eruption.

Types of Volcanoes



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- Cinder cones
- Composite volcanoes
- Shield volcanoes
- Lava volcanoes

Cinder Cones

- Cinder cones are circular or oval cones made up of small fragments of lava from a single vent that has been blown up.
- Lava that is gas charged is blown violently out of the volcano and the pieces that fall-down around the vent eventually build circular cone, with a bowl-shaped crater at the top.
- Cinder cones result from eruptions of mostly small pieces of scoria and pyroclastic that build up around the vent.
- Most cinder cones erupt only once. Cinder cones may form as flank vents on larger volcanoes, or occur on their own.

Composite Volcano

- Composite volcanoes are steep-sided volcanoes composed of many layers of volcanic rocks, usually made from high-viscosity lava, ash, and rock debris.
- Composite volcanoes are formed **over hundreds of thousands of years** through multiple eruptions.
- These types of volcanoes are tall conical mountains composed of lava flows and other ejecta in alternate layers, the strata that give rise to the name.

- They are also called **stratovolcanoes** and they make up some of the world's most famous (and most dangerous) mountains:
 - **Mount Fuji,**
 - **Mount Rainier**
 - **Mount Cotopaxi**
- Composite volcanoes are made of cinders, ash, and lava. Cinders and ash pile on top of each other, lava flows on top of the ash, where it cools and hardens, and then the process repeats
- Composite volcanoes are **connected by a conduit system** which taps into a reservoir of magma deep within the Earth.
- That magma can erupt from several vents across the composite volcano, or from a large central crater at the summit of the volcano.

Shield Volcano

- They are volcanoes shaped like a bowl or shield in the middle with long gentle slopes made by basaltic lava flows.
- They are formed by the eruption of low-viscosity lava that can flow a great distance from a vent.
- They generally do not explode catastrophically.
- Though low-viscosity magma is typically low in silica, shield volcanoes are more common in oceanic than continental settings.
- The Hawaiian volcanic chain is a series of shield cones, and they are common in Iceland, as well.

Lava Domes

- They are formed when erupting lava is too thick to flow and makes a steep-sided mound as the lava piles up near the volcanic vent.
- They are built by slow eruptions of highly viscous lava.
- Sometimes formed within the crater of a previous volcanic eruption.
- Like a composite volcano, they can produce violent, explosive eruptions, but their lava generally does not flow far from the originating vent.

Types of Volcanic Eruptions

- It depends on various factors such as chemistry of magma, temperature, viscosity, volume, presence of groundwater, and water and gas content.
- **Hydrothermal eruption:** These eruptions include ash and not magma. They are driven by the heat caused in hydrothermal systems.
- **Phreatic eruption:** This is driven when the heat of the magma interacts with the water. These eruptions too do not include magma and only ash.
- **Phreatomagmatic eruption:** This eruption takes place when there is interaction between the newly formed magma and water.
- **Strombolian and Hawaiian eruption:** Hawaiian eruption has fire fountains while Strombolian eruption has explosions due to lava fragments.
- **Vulcanian eruption:** These eruptions last for short period of time and can reach up to a height of 20 km.

- **Subplinian and Phinian eruptions:** Subplinian eruptions reach up to 20 km height, while Plinian eruptions reach up to 20 - 35 km.

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