

Volcanoes



Essential Standard 2.1: Explain how processes and forces affect the lithosphere

Objective 2.1.1: Explain how the rock cycle, plate tectonics, volcanoes, and earthquakes impact the lithosphere.

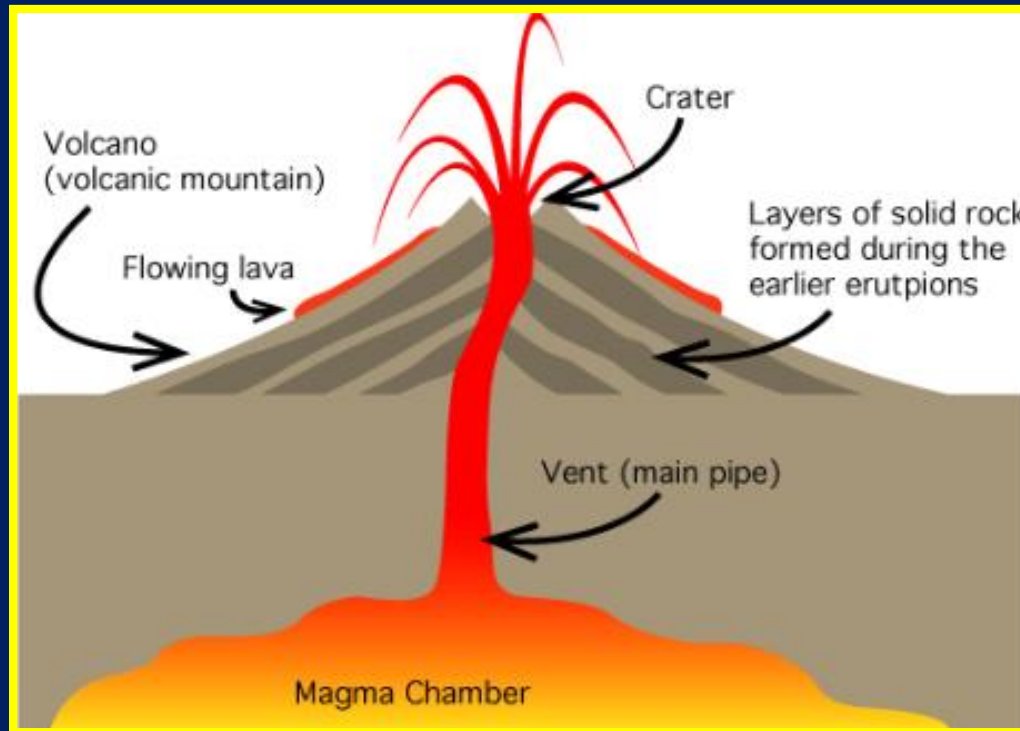
Volcano

A volcano is a fracture or an opening in Earth's crust through which magma escapes.



Anatomy of a Volcano

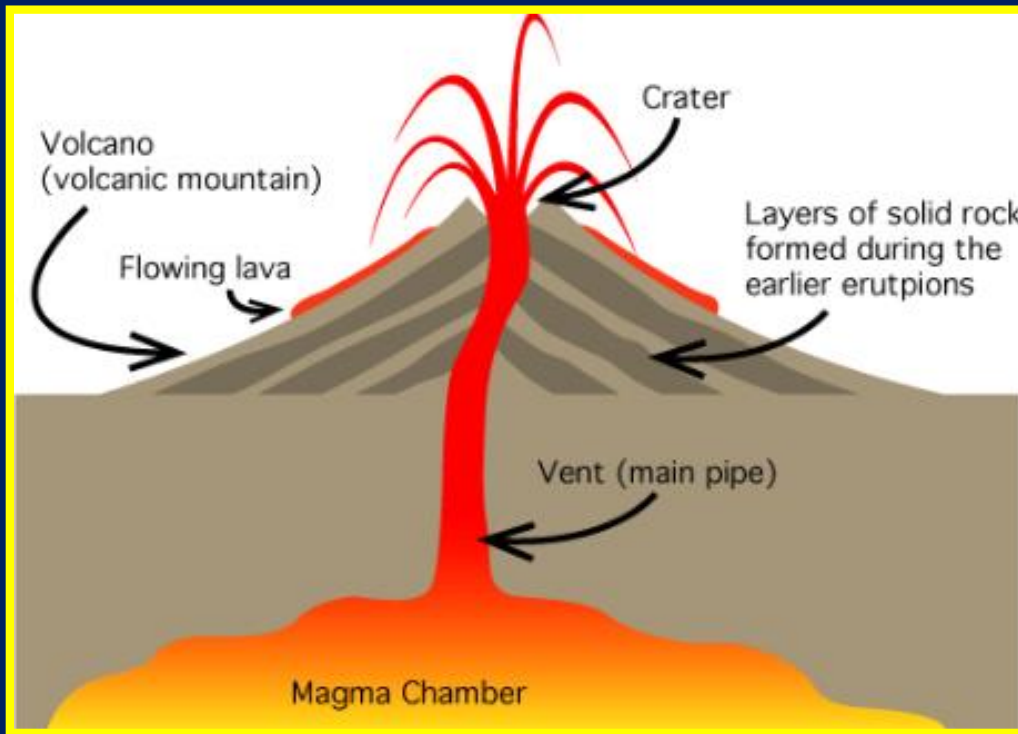
Magma forms and builds up pressure in a magma chamber, far beneath the surface.



Magma rises to the surface through a long tube in Earth's crust, called a vent.

Anatomy of a Volcano

Craters are bowl shaped depressions that form around the top of the vent.



Anatomy of a Volcano

Calderas are large depressions that form when the side of a volcano collapses.



Crater Lake, Oregon

Crater Lake in Oregon was formed after a volcano exploded and one side collapsed to form a caldera.

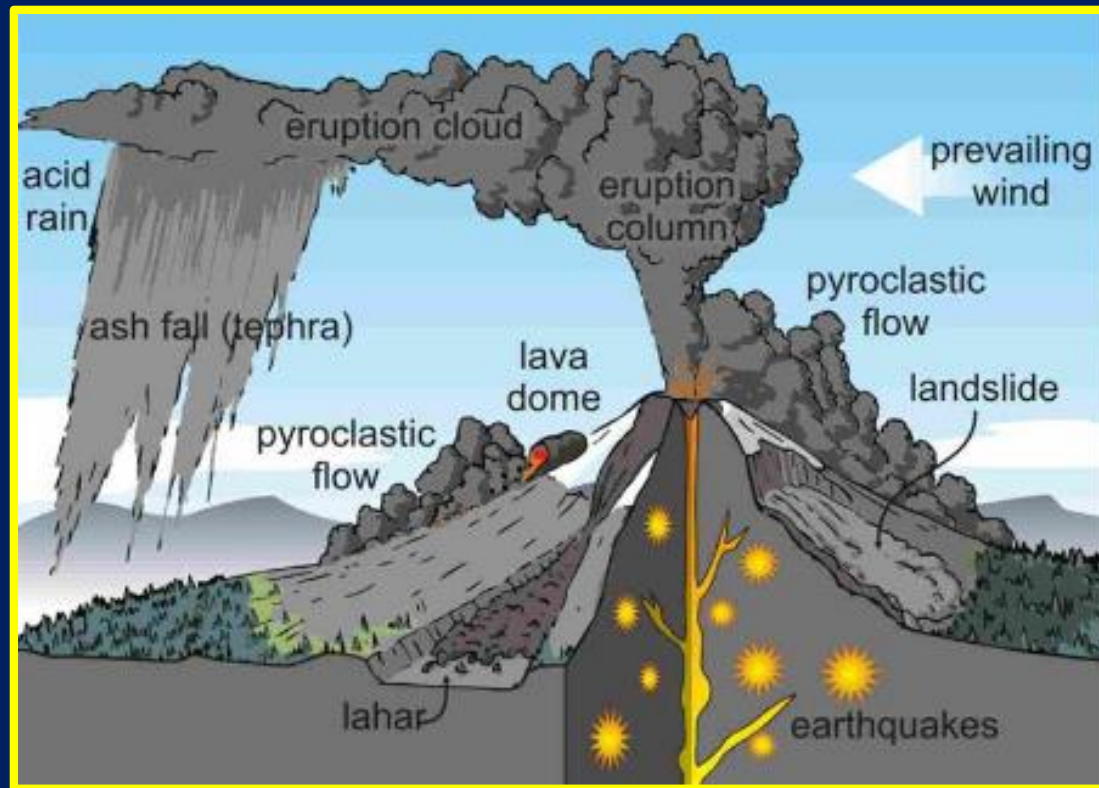
The center island is the volcano building itself again.



Crater Lake in the Winter

Volcanic Eruptions

Hazards from volcanic eruptions include: pyroclastic or rock fragments; ash fallout or tephra; mudflows or lahar; landslides, earthquakes, and acid rain.



Volcano Life Cycle

All volcanoes were active at some point.



Some volcanoes remain active all the time, slowly releasing magma and lava. These types of volcanoes are not usually that explosive.

Volcano Life Cycle

Other volcanoes are dormant, meaning that they may not explode for hundreds of years but will explode at some point in the future.



Volcano Life Cycle

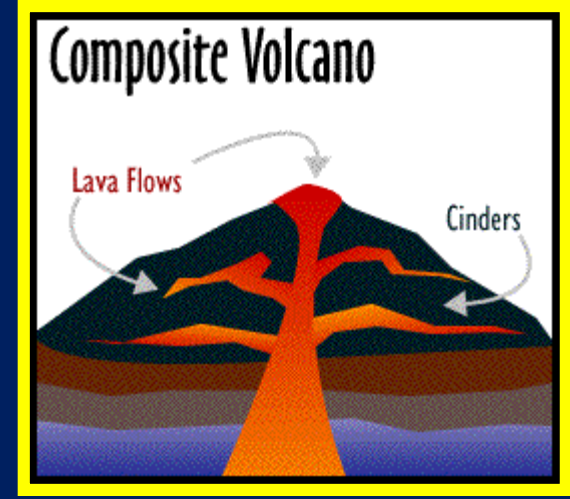
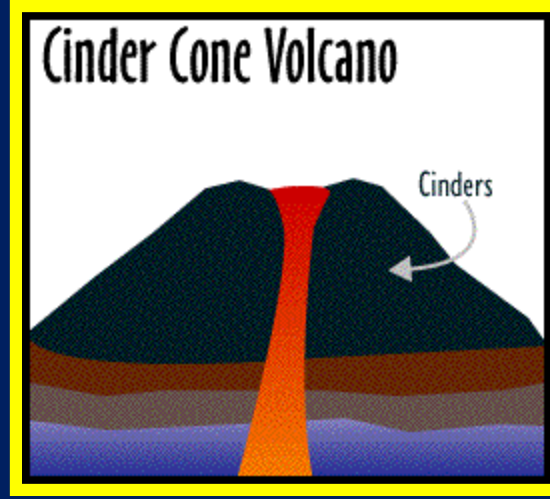
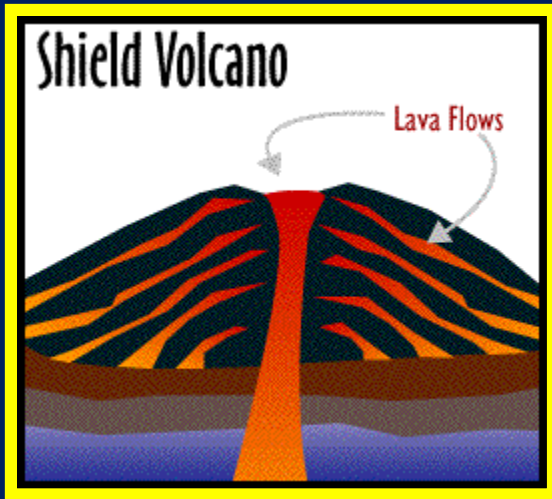
Some volcanoes are extinct, meaning that they will never erupt again.



Extinct volcanoes are most often hot spot volcanoes.

Types of Volcanoes

There are three main types of volcanoes due, in most part, to the type of magma associated with the volcano.



Shield Volcanoes

Shield volcanoes are dome-shaped mountains with gentle slopes which form when layers of basaltic lava accumulates from non-explosive eruptions.



Cinder Cone Volcanoes

Cinder-Cone volcanoes are formed when lava is ejected into the air and falls back down to form the steep, straight the sides.



These volcanoes are usually small but can still be fairly explosive.

Composite Cone Volcanoes

Composite volcanoes, also called Stratovolcanoes, form from alternating layers of lava, volcanic ash, and pumice.



The volcanoes in the Cascade Mountains are stratovolcanoes.

Stratovolcanoes are very large, explosive volcanoes.

Mount St. Helens

In the spring of 1980, Mount St. Helens, located near Seattle, Washington, erupted.



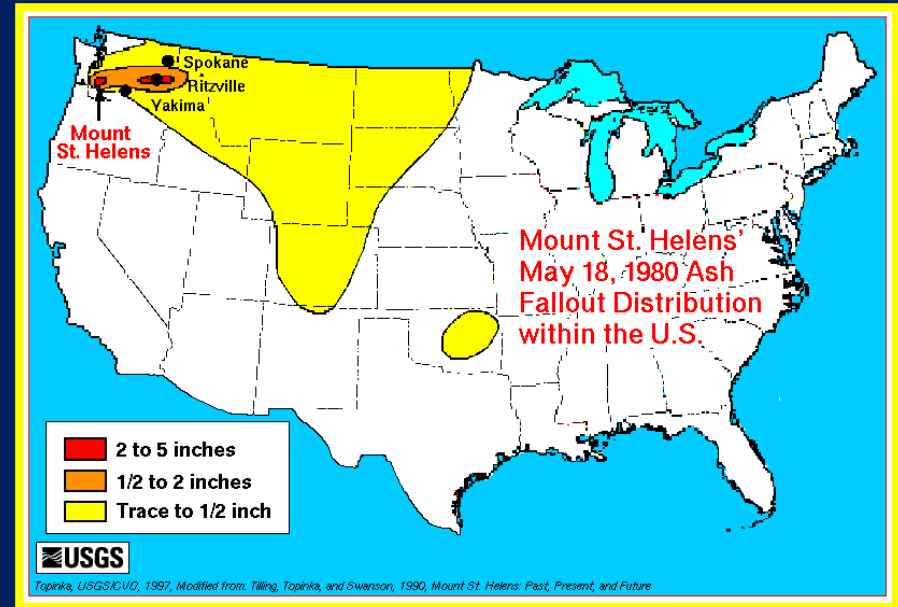
Mount St. Helens

Everything within the path of the eruption was wiped out for 8 miles.



Mount St. Helens

Ashes from the eruption were carried by the wind for hundreds of miles.



Mount St. Helens

The heat melted the snow and glaciers on Mount St. Helens, creating massive mudflows.



In the end, 57 people and hundreds of animals were killed and over 200 homes were destroyed.

The End

