Volcano Guided Notes

Individual Volcanoes   
- Locations

* Subduction Zones:
  + Association between volcanoes & subduction zones.
  + Ring of Fire = Ring of Subduction Zones
* Continental Rift Zone:
  + A few volcanoes are associated with rift zones.
  + e.g. Kilimanjaro & others in east African rift.
* Hot Spots:
  + Some coincide with plate boundaries, most don’t.
  + e.g. Hawaii

Galapagos Is., Iceland, Yellowstone

**Where are volcanoes located?**

**AT PLATE BOUNDARIES**

**Is there a pattern? YES**

* Not random
* Linear
* Around large inactive plates
* Near areas where elevation is changing

There are currently about 1500 active volcanoes around the world.

The Ring of Fire

* The **Ring of Fire** is an area in the [basin](https://en.wikipedia.org/wiki/Ocean_basin) of the [Pacific Ocean](https://en.wikipedia.org/wiki/Pacific_Ocean) where a large number of [earthquakes](https://en.wikipedia.org/wiki/Earthquake) and [volcanic eruptions](https://en.wikipedia.org/wiki/Volcanic_eruptions) occur.
* The Ring of Fire is a direct result of [plate tectonics](https://en.wikipedia.org/wiki/Plate_tectonics) and the movement and collisions of [lithospheric](https://en.wikipedia.org/wiki/Lithosphere) plates.

Volcanoes

* + Dormant (still has seismic activity and lava flow)

\*\*Not currently erupting (but still could

anytime)

* + Active

\*\*Currently erupting

* + Extinct (no seismic activity, no magma flow)

\*\*Not able to erupt (permanently)

* How do volcanoes form?
  + Deep inside the earth, heat and pressure cause rock to melt and form magma
* Why is magma forced upward toward the earth’s surface?
  + Magma is less dense than the rock around it, so it is forced upward towards the earth’s surface
* Where do volcanoes occur?
  + Along plate boundaries and above hot spots AND rift boundaries
* A hot part in the middle of the mantle that melts rock that is then forced upward as magma
  + Hotspot
* An example of a volcanic area at divergent plate boundaries
  + Mid Atlantic Ridge
* An example of a volcano at convergent plate boundaries
  + Soufriere Hills Volcano
    - (Montserrat, West Indies – 1995)
* Volcanic eruptions can be
  + Explosive
  + Violent
  + Quiet
* What 3 factors control the style of a volcanic eruption
  + Water Vapor
  + Amount of trapped gases
  + Magma composition
* A volcanoes form depends on whether it is the result of a QUIET or and EXPLOSIVE eruption and whether it is made a silica-rich or silica-poor lava.

What is the difference between “lava” and “magma”?

Magma is *below* ground and lava is *above* ground.

***GLOSSARY***

Bomb – a lump of rock thrown out in an eruption

Crater – a deep hollow at the top of a volcano

Eruption – the release of gases, magma and rock from a volcano

Lava – melted rock that flows down the volcano

Magma – melted rock inside the Earth

Molten – melted, liquid

Vent – a crack on the side of a volcano where magma can escape