Volcanic Eruptions and Extrusive Features:

Extrusive: formed out of the ground on Earth’s surface

**Lava Eruptions:**

Molten rock is called magma underground, once it leaves the ground its called lava

Review:

* main places of eruptions are subduction zones, spreading ridges and hot spots
* lava can be felsic or mafic
  + Think of felsic lava as soft serve ice cream versus hot coffee for mafic lava
  + Felsic is thicker as it hardens faster due to a low melting point

**Mafic Magma:**

High metal content makes it runny

* dissolved gases escape easily
* therefore eruptions are non-explosive

Creates the Following features:

Lava plateaus: (aka flood basalts)

* formed as magma pours out of rifts
* common at spreading ridges

Shield Volcanoes:

* wide volcanoes shaped like a shield
* common at hot spots

Diagram:

Cinder cones:

* lava sprays out and hardens in air, falls down into cone shaped pile

Diagram:

Pahoehoe:

* lava hardens with ropey appearance and wrinkled like elephant skin
* Caused by “skin” hardening as it flows

Aa:

* Sharp, blocky, hardened lava due to slow flow

Pillow lava:

* “Blobs” of lava that hardened quickly under water

**Felsic Magma:**

* Low metal content makes it thick and less fluid which traps gases
* These eruptions are explosive as gases build up and escape
* Most common at oceanic-continental subduction zones where felsic sediments are subducted on the oceanic plate

Features:

* Pyroclastics
  + “pyro”=explosive “clastics” rock fragments
  + eg. Ash and chucks of rock
  + Pyroclastic eruptions rise straight up and roll down mountain sides at >80km/hr as a wall of hot ash and toxic gases, travel for 1000s of km and disrupt global climate

Composite Volcanoes

* Composite volcanoes (aka Stratovolcano)
* Have the appearance of a layered cake with alternating layers of lava and pyroclastic material

Diagram:

Think Lava Flows

* Produce slow growing domes of felsic material called Lavadomes. Often form inside calderas.

Diagram:

Mudflows: called lahars

* Composed of ash and water and run down river valleys
* Eruptions are sudden explosive, rapid and massive.