Explosive Eruptions

-**What are considered explosive eruptions?** Fire Fountains, Splatter, Eruption Columns, Pyroclastic Flows.

Tephra – Any fragment of volcanic rock emitted during an eruption.

- **Ash/Dust (**Small**)** – Small particles of volcanic glass.
- **Lapilli/Cinders (**Medium**)** – Medium sized rocks formed from solidified lava.
  - Basaltic Cinders (Reticulite(rare) + Scoria) – Volcanic Glass that solidified around gas bubbles.
  - Accretionary Lapilli – Balls of ash
  - Intermediate/Felsic Cinders (Pumice) – Low density solidified 'froth', floats on water.
- **Blocks** (large) – Pre-existing rock blown apart by eruption.
- **Bombs** (large) – Solidified in air, before hitting ground

Fire Fountaining – Gas-rich lava splatters, and then flows down slope.

  - Produces Cinder Cones + Splatter Cones
  - **Cinder Cone** – Often composed of scoria, and horseshoe shaped.
  - **Splatter Cone** – Lava less gassy, shape reflects that formed by splatter.

Hydrovolcanic – Erupting underwater (Ocean or Ground) near the surface, causes violent eruption.
Marr – Depression caused by steam eruption with little magma material.
Tuff Ring – Type of Marr with tephra around depression.

Intermediate Magmas/Lavas

Stratovolcanoes/Composite Cone – 1-3 eruption types (A single eruption may include any or all 3)

1. **Eruption Column –** Ash cloud rises into the atmosphere.
2. **Pyroclastic Flows**
   Direct Blast + Landsides

Ash Cloud – Once it reaches neutral buoyancy level, characteristic 'umbrella cap' forms, & debris fall. Larger ash is deposited closer to the volcano, fine particles are carried further.

Pyroclastic Flow – Mixture of hot gas and ash to dense to rise (moves very quickly).

  - Dense flows restricted to valley bottoms, less dense flows may rise over ridges.

Steam Eruptions – Small (relative) steam eruptions may occur up to a year before major eruption event.