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.