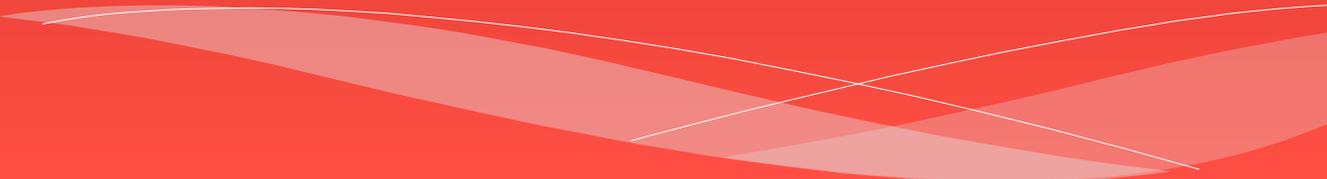


Types of Volcano

By the end of the lesson you will be able to:

- ❖ Draw and label a diagram of a composite cone and shield volcano
- ❖ Describe the differences between a composite cone and shield volcano

Some of you will be able to:

- ❖ Explain why composite cone and shield volcanoes form
- 

What do you know already?

- * In the back of your books I want you to draw and label a diagram of a volcano
- * Include as much detail as you



What differences can you identify?



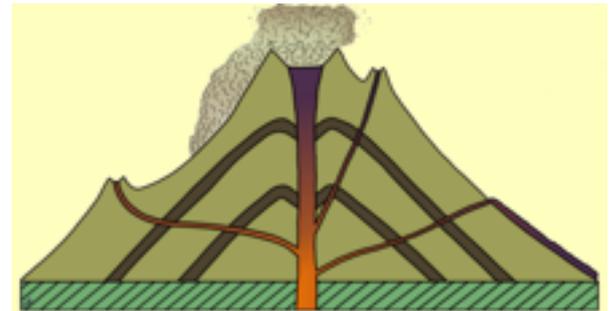
Take two pages

- * You will be given information on two types of volcano
 - * Composite Cone
 - * Shield

CREATE A FACT SHEET

- * Include a labelled diagram
- * Describe their characteristics
- * Explain how they are formed
 - * Type of lava
 - * Type of eruption
 - * Plate boundary

COMPOSITE CONE

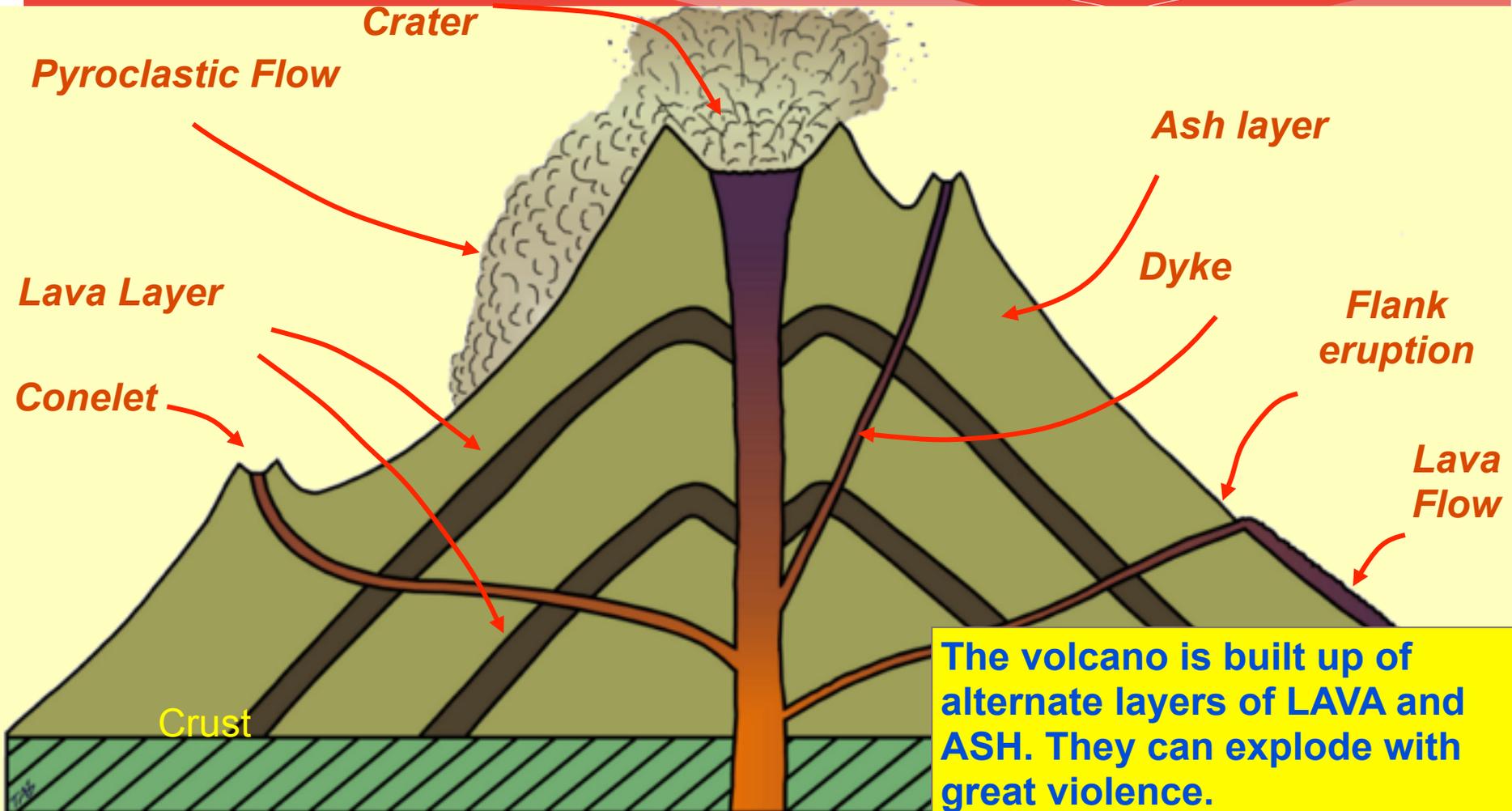


KEY FACTS

DESCRIPTION

EXPLANATION

Composite Cone



Formation of Composite Volcanoes

These are found on destructive plate margins.

Composite volcanoes have very steep sides and a narrow base. They usually only have one or a few vents to release the lava. Lava builds up in a magma chamber underneath the volcano. As the oceanic crust is subducted and melts this adds to the magma in this magma chamber, increasing the pressure.

The lava is very thick (made of silica - andesite) and so clogs up the main vent of the volcano, causing a 'plug' effect. This prevents any pressure from escaping.

The pressure build-up causes an explosion which blows out ash, gas and lava

The lava runs down the sides, then, when it cools, these layers of lava become the sides. These layers of lava build up creating the shape of the volcano.

Eruptions don't happen very often, but are explosive
e.g Mt St Helens, Washington USA

Shield Volcano

Shield Volcanoes are enormous features built up only from layers of lava. They produce lots of lava but they tend not to erupt violently.

Layers of Lava

Lava Flow

10,000m

250 miles

Composite volcano to scale



Formation of Shield Volcanoes

These are found on constructive plate margins

Shield volcanoes have gently sloping sides and are much wider than composite volcanoes, their bases can stretch for hundreds of kilometres.

They erupt frequently, with lava spilling out from many vents, and can erupt for long periods of time.

The lava is very runny (basalt), with little ash. This spreads easily and cools to form the volcanoes' sides. As the lava is so runny it can flow easily meaning that it does not build up to form a steep sided volcano.

They usually occur on constructive margins where the sea floor is spreading at a mid-ocean trench. They also occur at hot spots under the Earth's surface (not on plate boundaries, but forming new volcanic islands

E.g. Mauna Loa, Hawaii USA

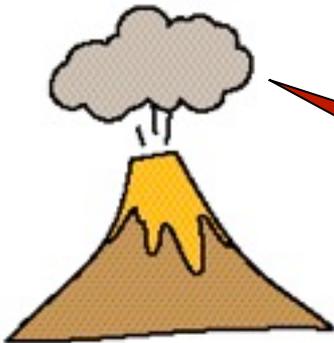
Are all volcanoes active?

- * Are all volcanoes capable of erupting?
- * How can we classify how active a volcano is?





Active: a volcano that has erupted recently and is likely to again. There are over 700 in the world. Mt Etna on Sicily (an island that is part of Italy) erupted in 1971, 1983 and 1992 and is likely to erupt again soon.



Zzzzzzzzzz

Dormant: a volcano that has not erupted recently but has had a recorded eruption in the last 2,000 years. Dormant means sleeping. It is difficult to predict when these volcanoes will erupt again.



Extinct: a volcano that is unlikely to erupt ever again. Extinct means dead. Edinburgh is built on an old volcano that last erupted over 50 million years ago.

Differences between composite and shield

Composite	Shield

explosive, Mauna Loa, narrow and steep, basaltic lava, destructive, wide and gentle slopes, non-violent, constructive, silica lava, Mt St Helens

Exam question

1. Mauna Loa is a shield volcano.
Explain the characteristics of shield volcanoes and how they are formed.
(6 marks)

Mark scheme answer

Level 1 (1–2 marks)

- * Basic – may be characteristics or formation, e.g. it has gentle sides, formed from runny lava, found at plate boundaries.

Level 2 (3–4 marks)

- * Clear, may still be imbalanced. Shield volcanoes have a wide base and gentle sides because they are formed of runny lava that flows long distances before cooling.

Level 3 (5–6 marks)

- * Detailed, needs to have both characteristics and formation but not necessarily both at Level 3. As for Level 2, plus more detail on their formation – usually at constructive boundaries, reference to basalt, hot spots all acceptable.
- * Credit good use of terminology. 6 marks