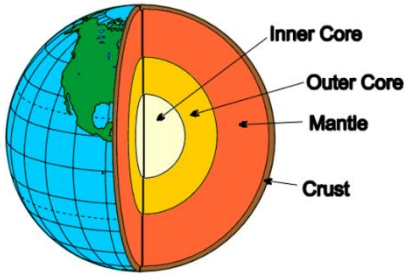
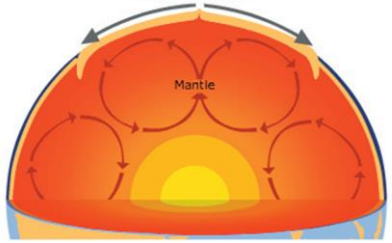
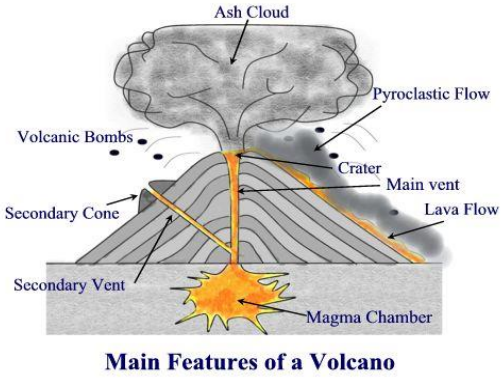
Tectonics

Structure of the Earth





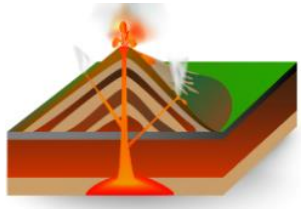
How does a volcano work?



Main Features of a Volcano

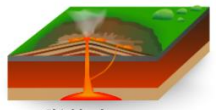
Types of volcanoes

Composite volcanoes are **steep sided and cone shaped** made up of **layers of lava and ash**, containing **sticky lava** that doesn't flow very fast.



Stratovolcano

Shield Volcanoes have **gently sloping sides** and **runny lava** that covers a **wide** area.



Shield volcano

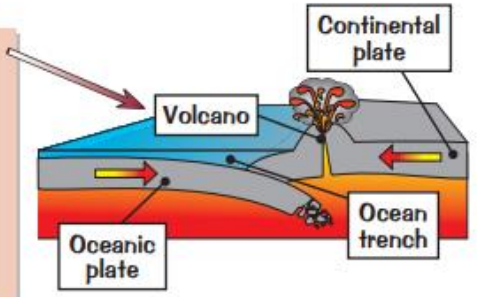
Plate boundaries or margins

1 Destructive Margins

Destructive margins are where two plates are moving towards each other, e.g. along the west coast of South America.

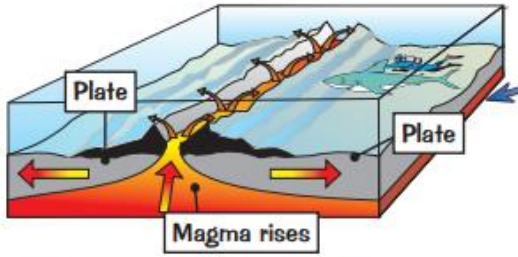
Where an oceanic plate meets a continental plate, the denser oceanic plate is forced down into the mantle and destroyed. This often creates volcanoes and ocean trenches (very deep sections of the ocean floor where the oceanic plate goes down).

Where two continental plates meet, the plates collide, and the ground is folded and forced upwards to create mountain ranges.



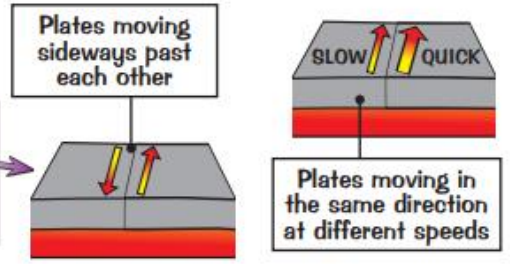
2 Constructive Margins

Constructive margins are where two plates are moving away from each other, e.g. at the mid-Atlantic ridge. Magma (molten rock) rises from the mantle to fill the gap and cools, creating new crust.



3 Conservative Margins

Conservative margins are where two plates are moving sideways past each other, or are moving in the same direction but at different speeds, e.g. along the west coast of the USA. Crust isn't created or destroyed.



Why live near a volcano?

- Fertile soil – because of all the minerals its good for growing crops
- Geothermal Energy – cheap and environmentally friendly
- Prediction – scientists monitor and put warning systems in place
- Tourism – generates money and jobs for locals

Fuego Eruption

Erupted 3/6/2018
Pyroclastic flow covered 10Km buried many villages under ash

Effects
165 killed
1000s homeless
1400 spent night in makeshift shelters in schools
Airport closed meaning aid could not arrive
Vital crops destroyed – corn, beans and coffee

Responses
No prior warning given
Monitoring equipment out of date
Oxfam raised money and sent aid

Nepal Earthquake

7.8 magnitude struck on 25/4/2015 with 105 aftershocks

Effects
5000 killed
10000 injured
1.6 million homeless
90% of people lost their homes and livestock and have no way of getting food.

Responses
Government declared state of emergency and asked for international help
Oxfam flew in tents, blankets, medical supplies and fresh food and water.

The Three P's

PREDICT: There may be many pre-shocks before an earthquake that can be measured on a seismograph.
PROTECT: All buildings must comply with strict earthquake planning regulations
PLAN: Prepare disaster plans. Organise and prepare hospitals and evacuation centres. Organise emergency supplies

What is an earthquake ?

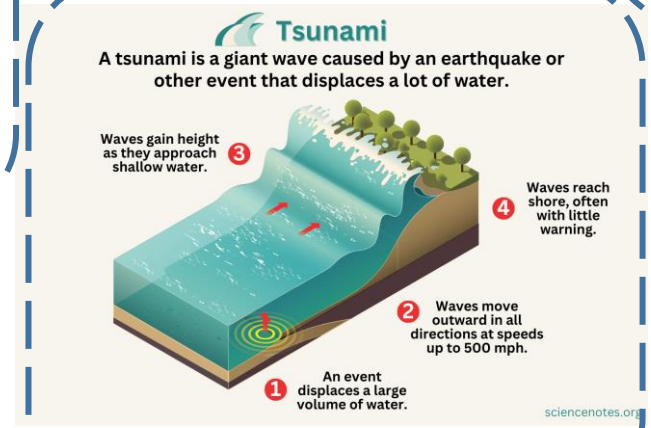
Sudden release of energy in the Earth's crust causing the ground to shake
Focus – the start inside the earth
Epicentre the point above the focus on the Earth's surface.

Earthquakes are measured on the Moment magnitude scale (MMS).

This measures the magnitude (strength) of the shaking caused by the earthquake

It has 10 different levels.

1 is the lowest and 10 is the strongest.



Earthquake proof buildings