



The structure of the Earth

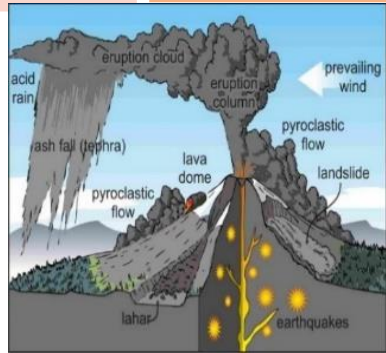
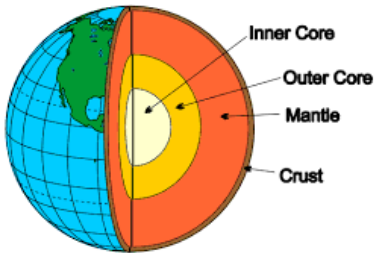
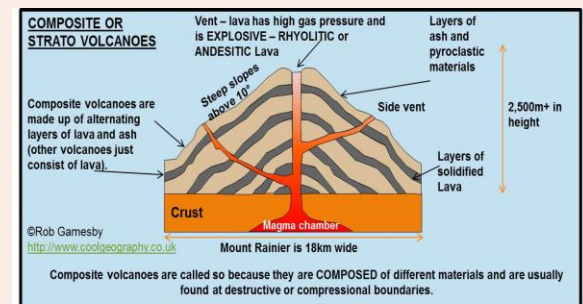
The Crust	Varies in thickness (5-10km) beneath the ocean. Made up of several large plates.
The Mantle	Widest layer (2900km thick). The heat and pressure means the rock is in a liquid state that is in a state of convection.
The Inner and outer Core	Hottest section (5000 degrees). Mostly made of iron and nickel and is 4x denser than the crust. Inner section is solid whereas outer layer is liquid.

Volcanic Hazards

Ash cloud	Small pieces of pulverised rock and glass which are thrown into the atmosphere.
Gas	Sulphur dioxide, water vapour and carbon dioxide come out of the volcano.
Lahar	A volcanic mudflow which usually runs down a valley side on the volcano.
Pyroclastic flow	A fast moving current of super-heated gas and ash (1000°C). They travel at 450mph.
Volcanic bomb	A thick (viscous) lava fragment that is ejected from the volcano.

Types of volcano

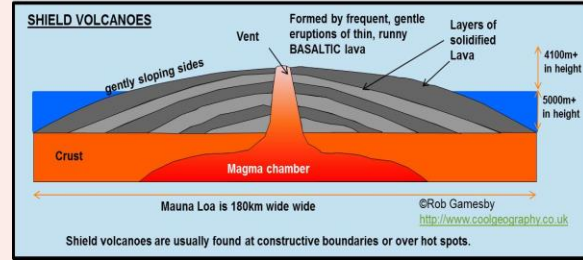
Volcanoes are different shapes depending on the plate boundary they are located on and the viscosity (thickness) of the lava.



Earth structure and Volcanoes

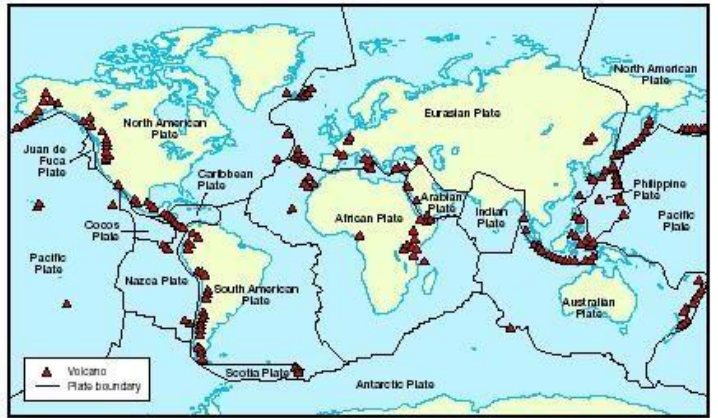
Volcano opportunities and challenges

Living in volcanically active areas brings both opportunities and challenges. These opportunities, plus the fact that eruptions are rare and we have the technology to monitor volcanoes, means many people feel the benefits of living in these areas outweigh the risks.



Volcanoes and volcanic hotspots

Volcanoes tend to be found at plate boundaries. Hotspots may be far from tectonic plate boundaries. A volcanic hotspot is where lava pushes up from under the mantle and creates a volcano



Mining in volcanic areas

Lava from deep within the earth contains minerals which can be mined once the lava has cooled. These include gold, silver, diamonds, copper and zinc, depending on their mineral composition. Often, mining towns develop around volcanoes. Volcanic areas often contain some of the most mineral rich soils in the world.



Opportunities

- Geothermal energy
- Volcanic ash produces fertile soils
- Volcanic craters and geysers are tourist hotspots
- Valuable minerals and metals can be found near volcanic sites such as tin, copper, silver and gold

Challenges

- Ash fall- towns and farms are covered by ash, destroying crops
- Poisonous gases are produced
- Lava flows, with temperatures between 800c and 1200c
- Mud flows are formed from ash and rain mixing, creating a catastrophic river of mud (lahar).