Montgomery Academy Geography Dept.

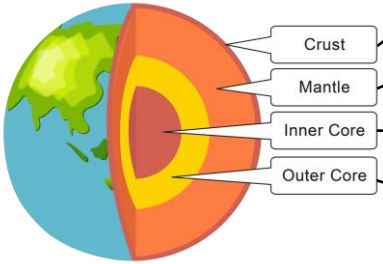
KS3 Knowledge Organiser - Tectonics

Knowledge Check 1 Content

Knowledge Check 2 Content

Composite Volcano	Tall, steep-sided volcano with thick lava flows
Constructive Margin	Where plates move apart
Continental Drift	The movement of The plates over millions of years
Convection Currents	Movement within the Earth's mantle due to heat from the core
Core	The centre of the Earth. There is a solid inner and liquid outer core
Crust	The surface layer covering our planet
Destructive Margin	Where oceanic and continental plates move towards each other
Distribution	Where something is located
Lava	Magma which has erupted onto The Earth's surface
Magma	Hot, liquid rock stored underground.
Mantle	Layer of the Earth under the crust
Plate Margin	Where two or more plates meet
Ring of Fire	A line of volcanoes around the Pacific Ocean
Shield Volcano	A short, wide volcano with runny lava flows
Subduction	Where one plate sinks under another
Tectonic Plates	Huge pieces of the Earth's crust
Viscous	Thick/sticky consistency
Volcano	An opening in The Earth's crust through which lava, ash and gases escape

What are the layers of the Earth?



Thinnest layer (5-70km thick); solid rock

Thickest layer (2,900km thick); semi-molten rock; 2 layers

Temperature of the sun (>5,700˚C); solid; nickel & iron

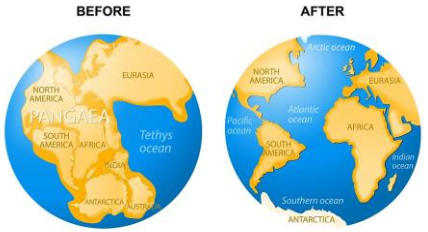
Temperature 4,000-5,700˚C); liquid; nickel & iron

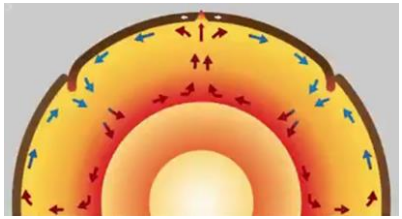
What is Continental Drift?

Theory by Alfred Wegener that the continents move

What evidence is there?

Continents fitting together, similar plants, fossils and rocks across different continents





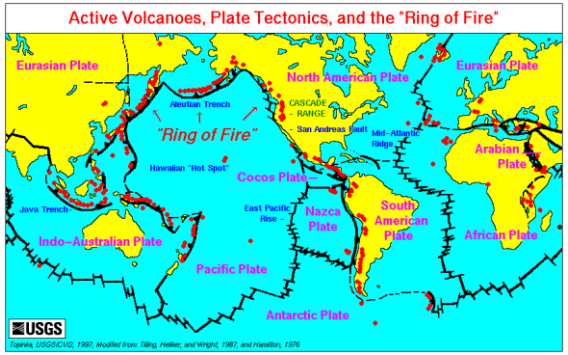
Why do the plates move?

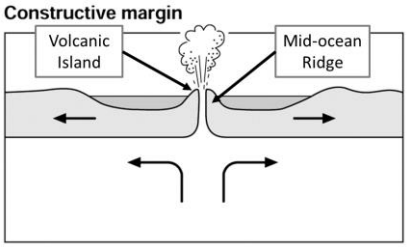
Convection Currents

1. Heat from the core causes the mantle to rise to the surface
2. Rising magma **pushes** plates **apart**
3. Sinking magma **pulls** the crust down into the mantle (**subduction**)

How are volcanoes distributed?

- Mostly along plate margins
- In linear patterns
- 70% are around the 'Ring of Fire'
- Large clusters in Iceland, Japan and south-east Asia

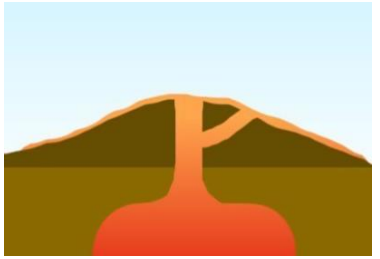


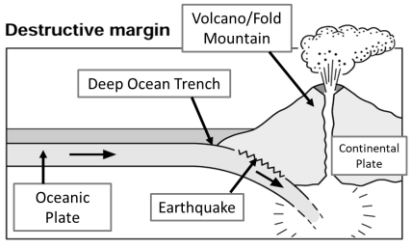


1. Plates move **apart**
2. Magma rises to fill the gap
3. Lava cools to form new sea floor creating a ridge
4. Layers build to form a volcanic island

What are the characteristics of shield volcanoes?

- Gently-sloping sides
- Formed by layers of lava
- Eruptions frequent & gentle
- Fluid lava
- E.g. Kilauea and Mauna Loa, Hawaii

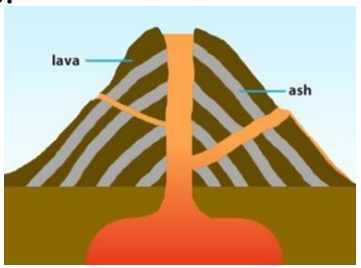




1. Move **together**
2. Denser oceanic plate **subducts**
3. Friction causes earthquakes
4. Oceanic plate melts creating viscous magma
5. Volcano erupts violently

What are the characteristics of composite volcanoes?

- Steep-sided
- Formed by layers of ash and lava
- Eruptions are explosive
- Lava is viscous
- E.g. Mt. St. Helens, USA & Mt. Pinatubo, Indonesia



Montgomery Academy Geography Dept.

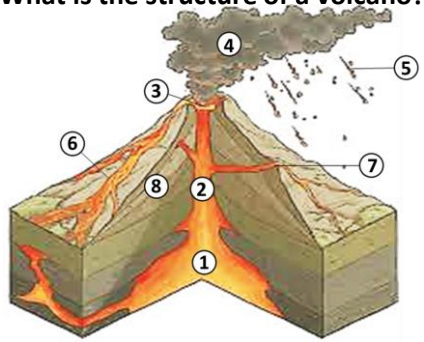
KS3 Knowledge Organiser - Volcanoes

Knowledge Check 3 Content

Knowledge Check 4 Content

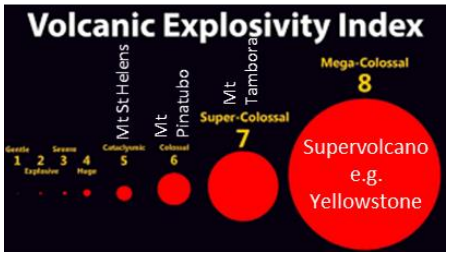
Active Volcano	Has erupted recently
Ash Cloud	Microscopic bits of rock blown out of the top of a volcano
Crater	Circular opening at the top of the volcano
Dormant Volcano	Has not erupted recently, but may erupt again
Extinct Volcano	Won't erupt again
Fertile Land	Land that has lots of nutrients
Geothermal Energy	Using the Earth's heat to generate energy
Hazard Mapping	Highlighting areas of high risk during an eruption
Lahar	Mudflow of volcanic debris and water
Magma Chamber	Large underground pool of molten rock
Main Vent	Tube which magma travels to the surface
Mitigate	Make something that's bad, less severe, serious or painful
Monitoring	Watching volcanoes to detect warning signs of an eruption
Primary Impact	Something caused directly by the eruption
Pyroclastic Flow	A cloud of hot gas and rock which flows down the mountainside
Risk	A situation involving danger
Secondary Impact	Knock-on impacts caused by the primary impact
Volcanic Explosivity Index (VEI)	Measures how explosive an eruption is

What is the structure of a volcano?



No.	Feature
1	Magma Chamber
2	Main Vent
3	Crater
4	Ash Cloud
5	Volcanic Bombs
6	Lava Flow
7	Secondary Vent
8	Layers of ash and lava

- Measures how explosive an eruption is on a scale of **0-8**
- Each level is **10 times** more explosive than the previous



Primary & Secondary Impacts

	Primary Impact	Secondary Impact
Ash Cloud	Damage crops	Food shortages
	Shut down airports	Companies lose money
Pyroclastic Flow	Flatten forests	Damages animal habitats
	Bury villages	People forced to move away
Lahar	Destroys bridges	Help is delayed arriving
	Sweeps away houses	Homelessness

Eruption Example - Mt Pinatubo, Philippines (1991)

Info
- Composite volcano
- Destructive plate margin
- VEI 6

Primary Impacts
- Ash cloud blocked out the sun
- 1.2m lost homes
- 800km² of farmland lost

Secondary Impacts
- Lowered global temperatures by 0.5˚C
- Diseases spread in aid camps
- Farmers lost jobs

Why Live Near Volcanoes?

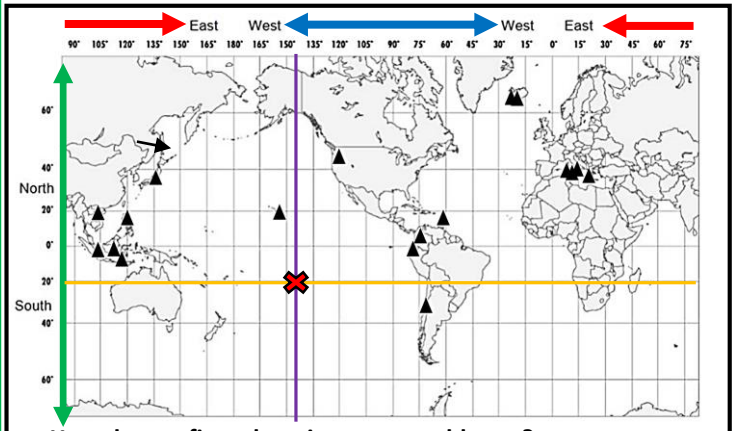
- Geothermal energy is clean (no CO_2) and cheap
- Fertile soils increase crop yields
- Exporting valuable minerals increases economy
- Tourism increases jobs in hotels, bars, restaurants etc.


Geothermal energy

Fertile land


Mining


Tourism



How do you fins a location on a world map?.

Step 1. Find how far **east**/**west** the location is. When the point is located, draw a straight line vertically down the map.

Step 2. Find how far **north or south** the location is. Once located, draw a straight horizontal line across the map.

Step 3. where the lines intersect, that is the point you are looking for.

Example: Locate point **143w**/**21s.** The example above shows the lines drawn and where they intersect.