



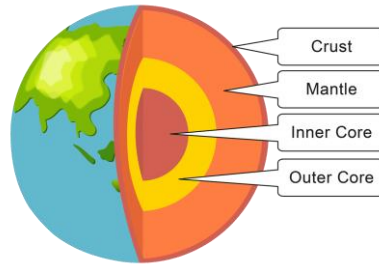
Knowledge Check 1  
Content



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?



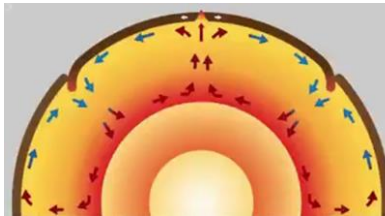
- Crust: Thinnest layer (5-70km thick); solid rock
- Mantle: Thickest layer (2,900km thick); semi-molten rock; 2 layers
- Inner Core: Temperature of the sun (>5,700°C); solid; nickel & iron
- Outer Core: Temperature 4,000-5,700°C; liquid; nickel & iron

### 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



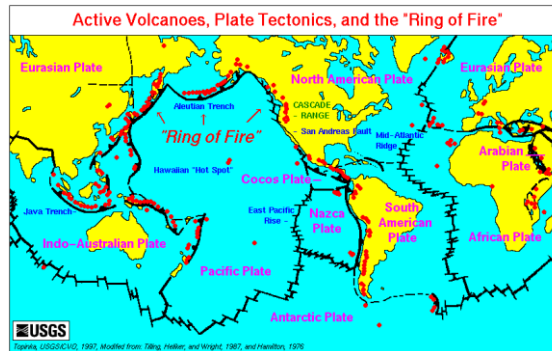
### Why do the plates move?

#### Convection Currents

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

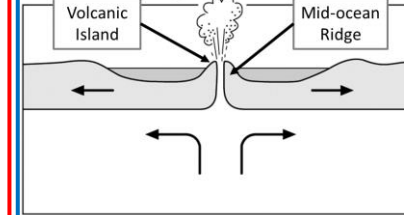
### How are volcanoes distributed?

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



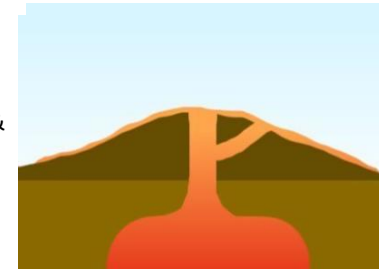
### What are the characteristics of constructive margins and shield volcanoes?

#### Constructive margin



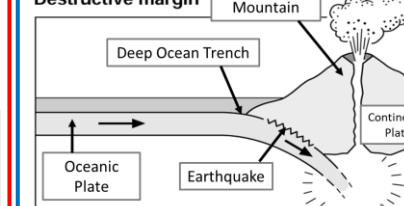
- Plates move **apart**
- Magma rises to fill the gap
- Lava cools to form new sea floor creating a ridge
- Layers build to form a volcanic island

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



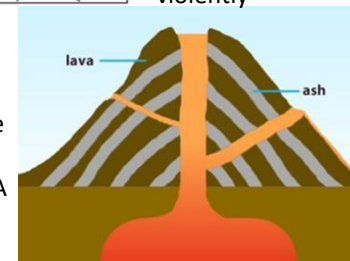
### What are the characteristics of destructive margins and composite volcanoes?

#### Destructive margin



- Move **together**
- Denser oceanic plate **subducts**
- Friction causes earthquakes
- Oceanic plate melts creating viscous magma
- Volcano erupts violently

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





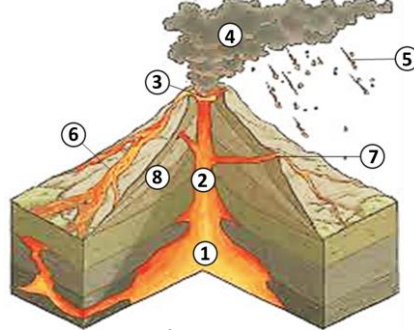
Knowledge Check 3  
Content



Knowledge Check 4  
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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

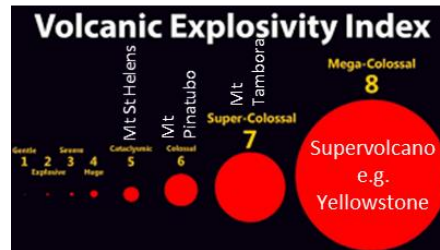
### What is the structure of a volcano?



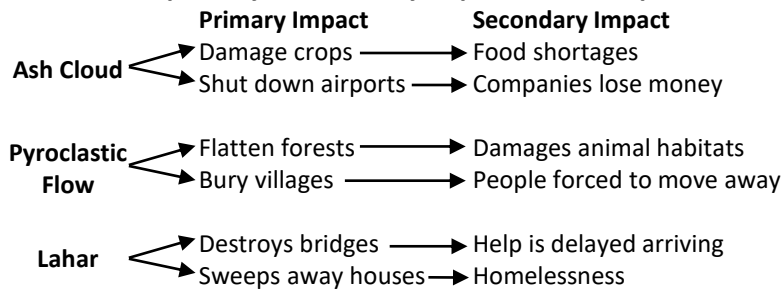
No.	Feature
1	Magma Chamber
2	Main Vent
3	Crater
4	Ash Cloud
5	Volcanic Bombs
6	Lava Flow
7	Secondary Vent
8	Layers of ash and lava

### How are eruptions classified?

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



### What are the primary & secondary Impacts of an eruption?

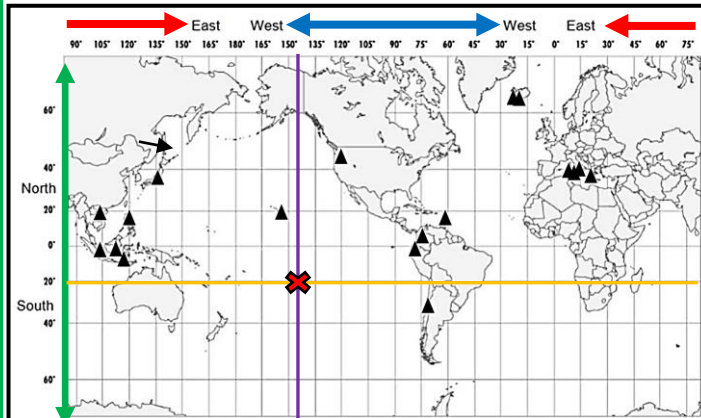


### Eruption Example - Mt Pinatubo, Philippines (1991)

<b>Info</b>	<b>Primary Impacts</b>	<b>Secondary Impacts</b>
<ul style="list-style-type: none"> <li>Composite volcano</li> <li>Destructive plate margin</li> <li>VEI 6</li> </ul>	<ul style="list-style-type: none"> <li>Ash cloud blocked out the sun</li> <li>1.2m lost homes</li> <li>800km<sup>2</sup> of farmland lost</li> </ul>	<ul style="list-style-type: none"> <li>Lowered global temperatures by 0.5°C</li> <li>Diseases spread in aid camps</li> <li>Farmers lost jobs</li> </ul>

### Why Live Near Volcanoes?

- Geothermal energy is renewable and produces no emissions.
- Ash adds minerals to soils making them fertile which increase crop yields.
- Exporting valuable minerals like gold grow the economy
- Tourism increases jobs in hotels, bars, restaurants



### How do you find 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.



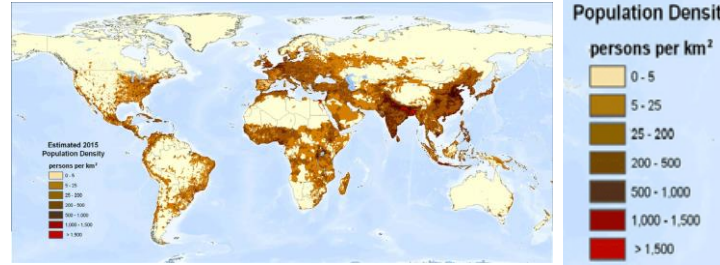
Knowledge Check 1  
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Knowledge Check 2  
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Key Vocabulary	
Birth Rate	The number of people born per year per 1000 people
Death Rate	The number of people who die per 1000/year.
Densely Populated	lots of people living in an area
Expendable income	spare money after bills are paid.
Megacities	A city with a population of more than 10 million
Migration	When someone moves from one location to another
Population distribution	how a population is spread over an area.
Population growth rate	The difference between the birth rate and death rate
Rural	Relating to the countryside Sparsely Populated: few people living in an area
Urban	relating to towns/cities
Urbanisation	an increase in the proportion of people living in urban areas.

### How is the population of the world distributed?



- Global population is unevenly distributed.
- Very high cold latitudes of the planet are sparsely populated, as well as the world's vast hot deserts.
- South and east Asia, Europe and western/eastern North America are all densely populated.

### Why are populations changing?

- The developing world is growing much faster than the



Increase Birth Rate	Decrease Birth Rate
Children work	Education
High infant mortality	Birth control
Early marriage	Expensive childcare



Increase Death Rate	Decrease Death Rate
War	Medicine
Food shortages	Clean Water
Disease	Old age pension

### Why are people in the developing world moving to cities?

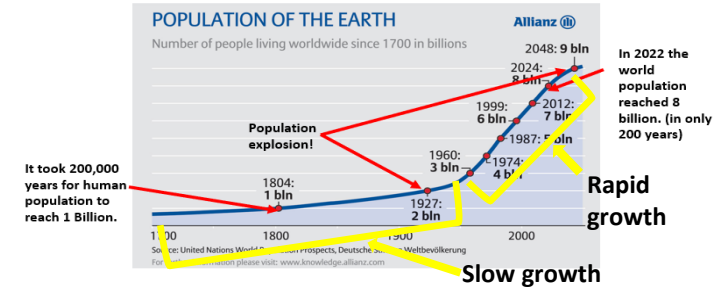
Individuals move in search of a better life. They move due to:



- few services
- lack of job opportunities
- unhappy life
- poor transport links
- natural disasters
- wars
- shortage of food

- access to services
- better job opportunities
- more entertainment facilities
- better transport links
- improved living conditions
- hope for a better way of life
- family links

### Why has global population increased so rapidly?



- Modern medicine – Many diseases can be cured and are vaccinated against e.g. measles.
- Better food production – higher yields of food mean fewer people die from hunger and food costs less.

### What are the impacts of population growth?

<b>Social</b>	<ul style="list-style-type: none"> <li>• Increased war over resources such as food and fossil fuels</li> <li>• More pandemics</li> </ul>
<b>Economic</b>	<ul style="list-style-type: none"> <li>• Cost of living will increase</li> <li>• Not enough jobs</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>• Urban growth destroys habitats</li> <li>• Air and water pollution from transport and farming.</li> </ul>

### What are the opportunities and challenges of megacities?

Opportunities	Challenges
<ul style="list-style-type: none"> <li>• Better paid jobs</li> <li>• Expendable income</li> <li>• Better social life</li> <li>• Better access to water, internet, electricity.</li> <li>• More access to education</li> </ul>	<ul style="list-style-type: none"> <li>• Air/water/noise pollution</li> <li>• Traffic</li> <li>• Squatter settlements</li> <li>• Loneliness</li> <li>• Lack of available housing</li> <li>• Crime</li> </ul>



Knowledge Check 3  
Content

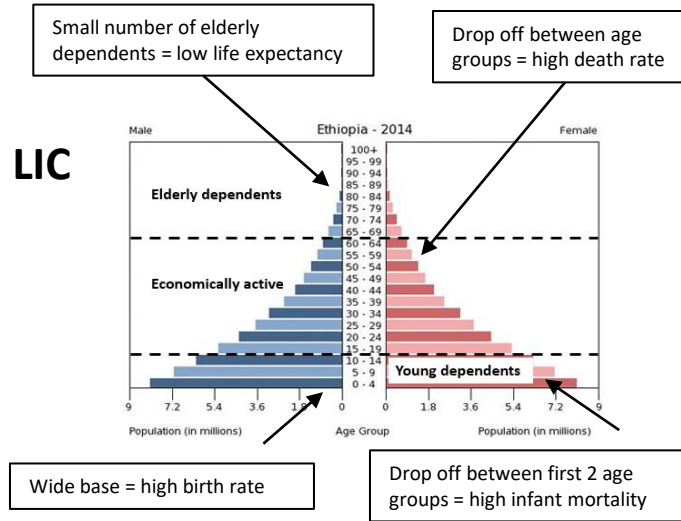


Knowledge Check 4  
Content

Key Vocabulary	
<b>Ageing population</b>	A population with a large proportion of elderly dependents.
<b>Contraception</b>	Use of artificial methods to prevent pregnancy.
<b>Economically Active</b>	People of working age (15-65) in a population
<b>Elderly Dependents</b>	People over the age of 65 in a population.
<b>Fertility Rate</b>	The average number of children a woman has in a country.
<b>HIC</b>	income country
<b>LIC</b>	Low income country
<b>NEE</b>	Newly Emerging Economy
<b>Population Pyramid</b>	A graph representing the population of an area.
<b>Slum</b>	An area of poorly built illegal houses
<b>Sterilisation</b>	Removing someone's ability to have children
<b>Young dependents</b>	People under the age of 15 in a population.

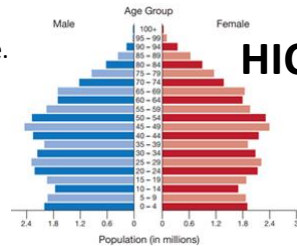
### What are population pyramids?

- They show the population structure in terms of age and gender.
- Their shape is determined by the development of the county.





### What would a rich country look like?

- Large number of economically active.
- Small number of young dependants, due to smaller families and the role of women in the workplace.
- More elderly dependants due to good healthcare.



### How are the populations of the UK and India different?

Large Elderly Population 	Large Young Population 
<b>Positives</b> <ul style="list-style-type: none"> <li>• Strong family bonds.</li> </ul>	<b>Positives</b> <ul style="list-style-type: none"> <li>• Boosts the economy due to large workforce</li> <li>• More tax money improved people's lives.</li> </ul>
<b>Negatives:</b> <ul style="list-style-type: none"> <li>• Puts strain on healthcare.</li> <li>• Needs to be supported by economically active.</li> </ul>	<b>Negatives:</b> <ul style="list-style-type: none"> <li>• More competition for jobs</li> <li>• Not enough housing in cities.</li> </ul>

### What are the challenges of India's population?



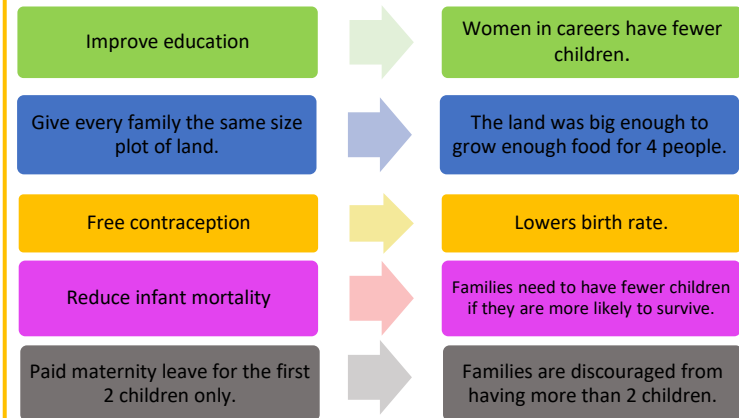
- The rapid increase in population means that it is difficult for the government to build affordable homes
- This means migrants are forced to build their own homes which lack even the basic amenities.
- Competition for unskilled work is high & wages remain low.

### What are squatter settlements like?



- A squatter settlement is an area of illegal dwellings made from make shift materials. They are usually found in undesirable locations close to the city.
- They are unsafe, compact and often overcrowded.
- They lack basic amenities like water, sewage and electricity.
- Disease is common and the environment is unpleasant.
- Litter often builds due to a lack of waste disposal.

### How did Kerala control its rapidly growing population?



### Did it work?

- Kerala now has an annual growth rate of just 1.2%.
- More girls in Kerala go to university than boys.
- Higher adult literacy (98%) and life expectancy (73) than the rest of India



Knowledge Check 1  
Content



Knowledge Check 2  
Content

Key Vocabulary:	
Collision Boundary	When two continental plates move into each other.
Monsoon	A sudden change from a dry season to a wet season.
Plateau	A flat, high altitude area.
NEE	Newly Emerging Economy

### Where is India?

India is located in:

- The northern hemisphere,
- South Asia
- To the south of China
- To the east of Pakistan
- On the Indian Ocean



### What India's physical features?

<b>Bodies of water</b>	Indian Ocean, Bay of Bengal, Arabian Sea
<b>Mountains and plateaus</b>	Western and Eastern Ghats, Himalayas, Deccan Plateau
<b>Rivers</b>	Ganges, Brahmaputra
<b>Deserts</b>	Thar Desert

### How developed is India?

India is a NEE.

**Development indicators:**

**GNI per Capita:** \$7100

**Birth Rate:** 17 per 1000

**Life Expectancy:** 69

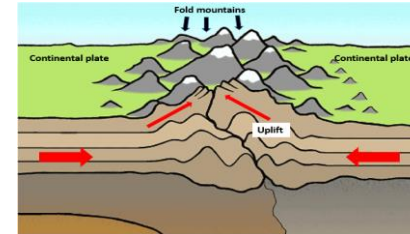
**Adult Literacy:** 76%

**Infant Mortality:** 28

### How did the Himalayas form?

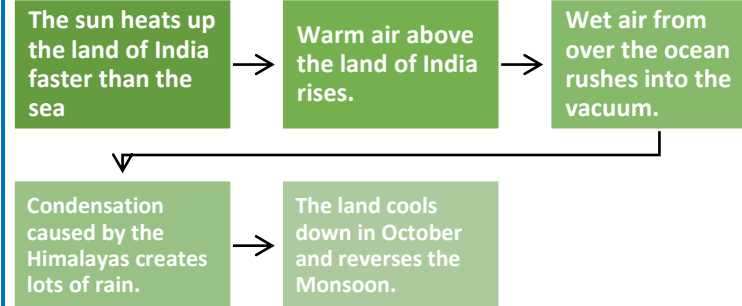
#### Collision Boundary

- **200Ma** - India was located off the coast of Australia. (70Ma)
- **70Ma** - India moved north towards Asia.
- **50Ma** - The Tethys sea between the continents closed.
- **40Ma** - the sea floor buckled upwards which created fold mountains.



#### What is a monsoon climate?

The monsoon occurs in summer (June-September) and is characterised by extremely heavy rain.



#### What are the impacts of a monsoon climate?

- Flooding destroys homes and fields.
- The cast amount of water provides hydration and sanitation.
- Mineral-rich sediment is deposited in deltas which means lots of food can be grown.





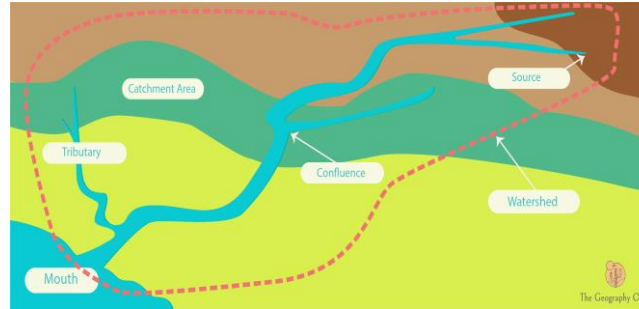
Knowledge Check 3  
Content



Knowledge Check 4  
Content

Key Vocabulary:	
Abrasion	Material scrapes the bottom of the river channel.
Attrition	Sediment particles knock each other and break down.
Confluence	The point at which two rivers meet.
Deposition	When a river puts down what it is carrying.
Discharge	The amount of water flowing in a river.
Drainage Basin	The area from which a river gets its water.
Erosion	Wearing away of the land.
Gorge	Steep cliffs either side of a river valley.
Hydraulic Action	Water forces air into crack in rocks.
Landform	A natural feature of the land.
Meander	A bend in a river.
Mouth	The end of a river where it meets the sea.
Plunge Pool	The deep pool below a waterfall.
Sediment	Material carried by a river.
Source	The start of a river.
Tributary	A smaller river that joins the main channel.
Watershed	The boundary between two drainage basins.

### What are the features of a drainage basin?

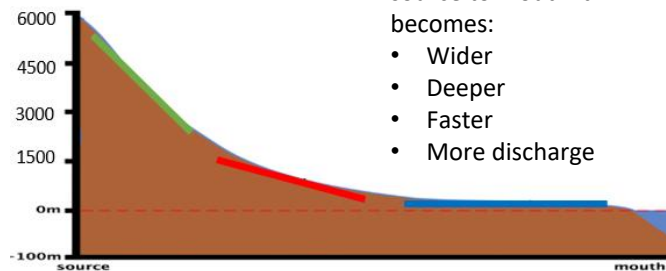


**Input-** Water entering the system/area e.g. **Precipitation**  
**Output-** Water leaving the system/area e.g. **Evaporation**

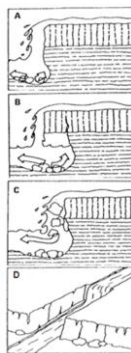
### How does a river change from its source to mouth?

As a river flows from source to mouth it becomes:

- Wider
- Deeper
- Faster
- More discharge



### How does a waterfall form on the upper course?

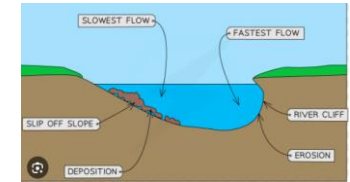


1. Falling water boulders loosen and wear away the softer rock.
2. The hard rock above is undercut as erosion of the soft rock continues.
3. The hard rock collapses into the plunge pool.
4. Erosion continues and the waterfall leaving a gorge behind.

### How do meanders change over time into Ox-Bow lakes?

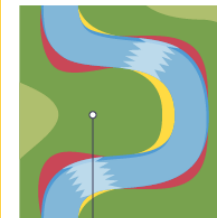
In a meander:

- **Outside bend** – fast water erodes the bank.
- **Inside bend** – slow water deposits sediment

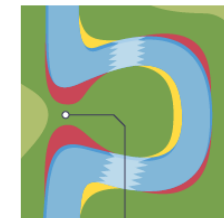


Over time this causes meander to enlarge...

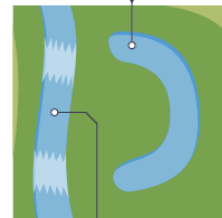
Cut off / abandoned meander or Oxbow lake



Erosion makes the neck narrow



During floods river takes shortest course through the neck



New straighter river course

Areas of deposition (yellow) Areas of erosion (red)

### What landforms are found in the lower course?

- Deltas form when rivers approach their mouth.
- Water slows down as it flows into the ocean
- This causes deposition
- The deltaic lobe forms and sticks out to sea as sediment collects over time

