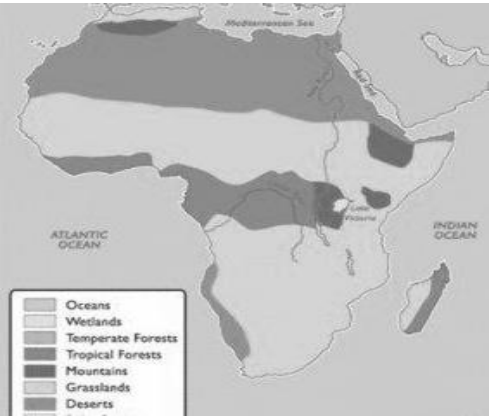
Africa: Knowledge Organiser

Biomes of Africa

The sheer size of Africa means a variety of different biomes can be found within the continent. Varied biomes results in varied wildlife. Mountain regions can be found in the north and east, deserts in the north and south. The largest desert is the Sahara which runs east to west across the continent. The Kalahari and Namib can be found on the south west coast. Tropical rainforests lie on and 5 degrees north and south of the equator. Grasslands encircle the rainforests to the north, east and south.



The battle for Africa's Mineral Wealth

Conflict diamonds- Sierra Leone. United Nations definition- "...diamonds that come from areas controlled by forces against fair and internationally recognised governments, and are used to fund military action against those governments."

Positives of diamonds in Sierra Leone:- Increases countries economy so they can spend more money on infrastructure, services etc. Also creates jobs. Diamond sales generate in Sierra Leone $125 million every year, 50% of all money the country takes.

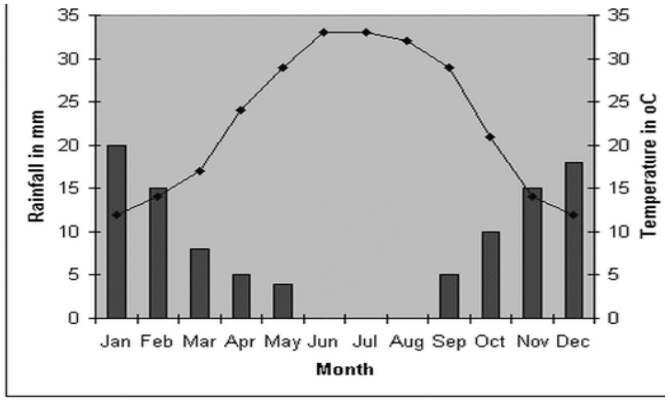
Negatives of diamonds in Sierra Leone:- Government couldn't control the diamond mines, so the rebels (RUF) took control of buig parts of the country and started a civil war. Thousands were killed and many children were forced to fight.

Who is to blame for the problems? Smuggler, General Taylor, Sierra Leone government, consumer, RUF

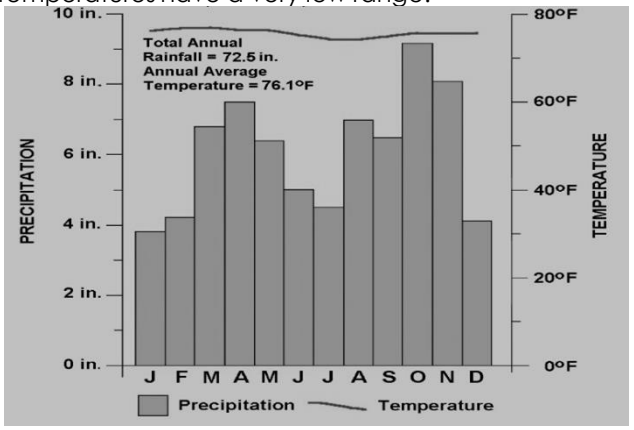
Contrasting Climates

Deserts are near the equator so temperatures are hot. Higher temperatures means water evaporates very quickly. There are not many plants in the desert so there is nowhere for water to be stored. If there are mountains nearby then any precipitation will fall over them. The winds that sweep across deserts come overland so they pick up very little moisture; this reduces the amount of precipitation.

This climate graph shows the climate of the Sahara. Note that rainfall does occur in the desert during some months of the year. Temperatures may seem low due to the fact they get very low at night time. This is due to a lack of cloud cover to trap any heat that has built up during the day.



By contrast equatorial climates shows very different characteristics. Precipitation occurs all year round and temperatures have a very low range.



Desertification

Desertification is when land turns into desert due to climate change and human activities. This is a huge problem in Africa as lots of farmers rely upon the land to make living. It is a particular problem in the Sahel region (sub Saharan).

Causes of Desertification

Deforestation:
1. Trees are chopped down for fire wood.
2. The soil is looser as there are no roots and is dried out by the sun
3. The land turns into desert.

Over Grazing:
1. More cattle are allowed to graze on the land
2. This leaves the ground bare.
3. The sun and wind dry out the land and it turns to sand.

Climate Change has led to hotter, drier climates in areas of Africa. This means a reduced amount of vegetation can establish, stabilise soil and trap moisture.

Effects of Desertification

As the soil is less stable it is more likely to be eroded by wind. As soils become infertile, fewer crops can be grown and so food shortages can lead to famine. People are forced to migrate to other areas in search of fertile soils. Native animals also die out as vegetation loss impacts local food chains.

Responding to Desertification

Afforestation – Planting new trees stabilises soils and prevents soil erosion.

Integrated farming – Limiting the number of animals kept and encouraging famers to grow crops alongside animals. Animal waste can be used to fertilise crops.

Drought resistant crops – Famers can use crops which are able to withstand drought and grow in drier conditions.

Population growth – A slower population growth would reduce the pressures on farmland. Educating people about contraception may help to reduce population growth.

Welcome to Lagos

Case study to show an example of raid population growth- Lagos, Nigeria. Fastest growing city in the world.

Opportunities:- Employment, more services, better schools, better sanitation, development of oil industry.

Challenges:- Slums, overcrowding, low paid jobs, dangerous working conditions, crime, environmental degradation, government corruption.

Year 8 - Climate Change

Climate Change

Climate change is a large-scale, long-term shift in the planet's weather patterns and average temperatures. Earth has had tropical climates and ice ages many times in its 4.5 billion year history.

What causes Climate Change?

Climate Change is not down to one single factor. It is caused by a number of different Human and Physical factors. Climate is often incorrectly considered to be a fairly recent phenomena solely down to humans. However studies of past climates show that it has always occurred and is not only caused by human activity.

Human Causes
Population growth – An increased in the number of people leads to an increase in CO2 emissions. This then traps more heat in our atmosphere.
Deforestation – Trees absorb C02 in photosynthesis and act as sponges for CO2. Removing trees has led to more CO2 in the atmosphere and so more heat being trapped.
Fossil Fuel Consumption – The consumption of fossil fuels (coal/oil/gas) releases large amounts of carbon emissions in the atmosphere which means more heat being trapped.
Agriculture – Trees are often removed to make more land suitable for farming. Cattle ranching produces large amounts of a green house gas called methane.
Natural Causes
Orbital Change – the Earth has natural warming and cooling periods caused by Milankovitch cycles or variations in the tilt and/or orbit of the Earth around the Sun (Wobble, roll and stretch theory).
Volcanic Eruptions - When volcanoes erupt, they release a mixture of gases and particles into the air. Some of them, such as ash and sulphur dioxide, have a cooling effect, because they reflect sunlight away from the earth. Others, such as CO2, cause warming by adding to the greenhouse effect.
Solar Flares - Sometimes areas of the Sun will suddenly appear much brighter. These bright spots are called solar flares. They are areas where a large amount of energy is released to the surface of the Sun. A huge amount of heat then escapes from the sun's surface.

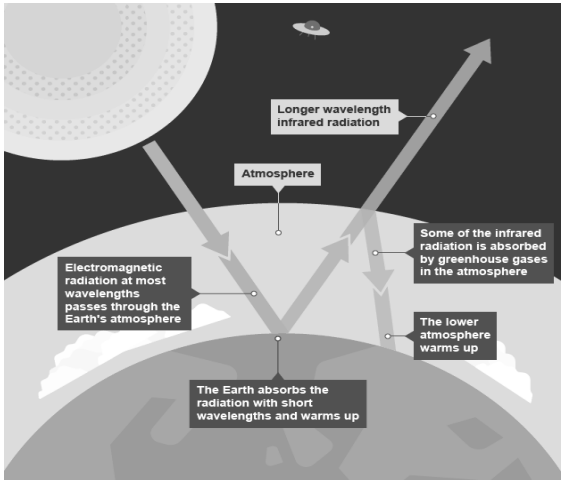
Case study of a fossil fuel- OIL

Positives (Dubai)
A city within the United Arab Emirates. Before 1966 was a small poor fishing village. In 1966 they discovered oil. This stimulated the economy and the city grew massively.
Positive impacts are that oil provides 1/3 of all of Dubai's money. The remaining 2/3 of the money is linked to oil indirectly e.g.- Tourism. Tourism is linked to oil as all the huge infrastructure projects and tourist resorts have been moistly funded by oil revenues.
Negatives- Nigeria (Niger Delta)
Though oil provides 98% of Nigeria's money, it has many negatives. One of the main negatives is that shell oil who drill the oil in Nigeria allow oil spills to pollute the environment on a daily basis. This creates job losses as fisherman lose their jobs as all the fish die, and local vegetation e.g.- mangroves are poisoned as well!. Finally Terrorists are active in the area fighting against the oil companies that pollute the environment.

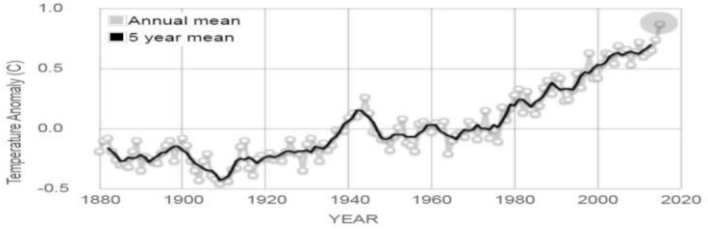
What is the Greenhouse Effect?

The greenhouse effect is a naturally occurring effect. It happens when thermal energy is trapped in the earths lower atmosphere by greenhouse gases such as carbon dioxide (CO2).

-Energy from the sun bounces off the earth's surface as some of this energy is absorbed by the gases forming the atmosphere. Roughly 30% of this absorbed energy is then radiated back towards the earth.
-This effect causes the earth's average temperature to be around 15°C.
-Without the natural greenhouse effect, the earth's average temperature would be around -18°C. This would be far too cold to sustain many forms of life.



-A build of CO2 and other greenhouse gases has led to less heat escaping. This is known as the enhanced Greenhouse Effect and has led to a an increase in average global temperatures and climate change.
-The graph below shows how mean yearly temperatures have increased since 1880.



Effects Of Climate Change

The potential effects of climate change are wide and varied. When examining them we should consider the; social, economic and environmental impacts.
Social – impacts upon people
Economic – impacts upon the economy
Environmental- impacts upon the environment e.g. Wildlife

Many effects will have social, economic and environmental effects.

It is also worth remembering that climate change will have positive as well as negative effects. Some examples of different effects are given below:

-Arctic Ocean ice sheet could melt away near north pole
-Increased rice crops in China
-South Australia able to grow more crops as it gets warmer
-Reduced rainfall in the Amazon rainforest, Brazil
-Stronger hurricanes in the Caribbean
-Ski resorts in the Alps close down due to lack of snow and ice
-Increased flooding in Bangladesh
-Increased threat of bush fires in the USA
-Increased desertification in some areas of Africa
-Species migration

Responding to Climate Change

There are two main categories when we look at responses to climate change; **Adaptation** and **Mitigation**.
Adaptation is when we change our lives and respond in order to cope with any changes happening due to climate change.
Mitigation is when we plan ahead and try to tackle the causes of climate change

Adaptation	Mitigation
Building more flood defences	Renewable energy such as; wind turbines and solar panels
Changing the types of crops grown	Afforestation
Using drought resistant food crops	Waste recycling
Turning ski resorts into mountain bike resorts	Electric cars
	Insulating homes
	International agreements

Year 8: Globalisation and fashion industry

Globalisation

Globalisation is how the world is becoming interconnected and countries are becoming more interdependent. Interdependent- When 2 countries are dependent on one another.

Apple iPhone

The plastic	Gross National Income (Money earned by residents of a country including money earned abroad).
Made/ assembled	ASSESMBLED IN Shenzhen, a SEZ in China. High factories with large human rights abuses.
Minerals such as coltan and cobalt	Mined in brutal conditions in the eastern Congo. Many people have died from this metal
Designed	Designed in SILICON VALLEY California

Nike T shirt chain of production

The chain of production is the journey a t-shirt takes from plant to your house.

- Nike designs T-shirt in Nike world HQ in Oregon USA
- Farmers grow cotton in India, perfect location due to climatic conditions
- Cotton sent to mill to be woven into cloth (India)
- Cloth sent to factory in India to be made into T-shirt (labels added). These are often sweatshops with long working hours and poor working conditions
- Transported across ocean in container ship, all over the world
- Taken to shops to be put on sale in the places such as the UK
- Bought by consumer

Key terms

Standard of living : the economic level of a person's daily life.
Quality of life :is a social measure of well being e.g. Life expectancy or Literacy Rates.
HIC : High Income Country (rich)
NEE : Newly Emerging Economies e.g. India/China.
LIC : Low Income Country (poor)
Globalisation Globalisation is how the world is becoming interconnected and countries are becoming more interdependent. Interdependent- When 2 countries are dependent on one another
TNC- Tran's national corporation- TNCs or multinational corporations (MNCs) are companies that operate in more than one country

Cotton farmer

Global cotton trade

Cotton is the most important of all natural fibres, accounting for almost half of all textiles in the world. It is an excellent clothing material with a huge variety of uses. Because it is so strong it can be made into fine, thin textiles, as well as hard-wearing fabrics like denim.

Cotton is now the world's most important non-food crop, covering five per cent of the planet's cultivated land area. It is grown in more than 80 countries around the world. For a good crop a long, sunny growing season, with at least 180 frost-free days and plenty of water, is needed.

Most cotton farmers in India live in poverty. They can earn as little as 7p an hour, work in blazing hot sun, long hours, and sometimes can't find work at all. The cotton farmers life revolves around the price they can sell their cotton at.
When cotton prices are low, they struggle; when it is high, they do slightly better.
Worldwide cotton prices are going down as more and more countries are starting to produce it. Also, less cotton is being grown by farmers due to climate change. But in addition to the problems that plague farmers in India, the situation in cotton is worse because the global cotton trade is heavily subsidised by governments in other countries.
Subsidy encourages farmers to increase the output of a particular product like cotton by partially offsetting the production costs e.g. in 2017 in the USA, the government paid farmers $490m to grow cotton. This meant that the farmers could sell their cotton cheaper than Indian farmers who were not offered a subsidy by their government. This meant the world bought American cotton, not Indian cotton.

TNC's- NIKE

Transnational corporations
TNCs or multinational corporations (MNCs) are companies that operate in more than one country. They often have factories in countries that are not as economically developed because labouris cheaper. Offices and headquarters tend to be located in the more developed world. Unilever, McDonalds and Apple are all examples of TNCs.

Advantages	Disadvantages
• Creation of jobs = • stable income. More reliable than farming. • Improved education and skills. • Investment in • Infrastructure - e.g. new roads - helps locals as well as the TNC help to exploit natur al resources. • A better developed economic base for the country.	• Fewer workers employed, considering the scale of investment • Poorer working conditions • Damage to the environment by ignoring local laws • Profits going to companies overseas rather than locals • Little reinvestment in the local area • Factories are often footloose and jobs insecure. If labour costs increase, the company may move elsewhere • Natural resources being over-exploited.

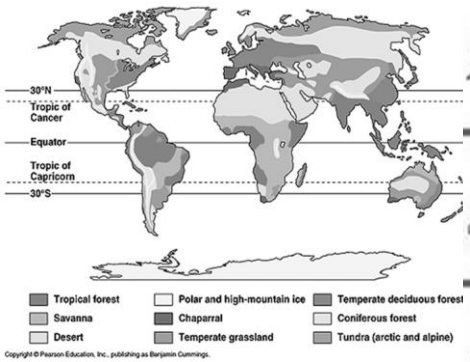
Nike in Indonesia

The factories are located in the Indonesian capital of Jakarta. The Nike world HQ is located in Oregon, USA

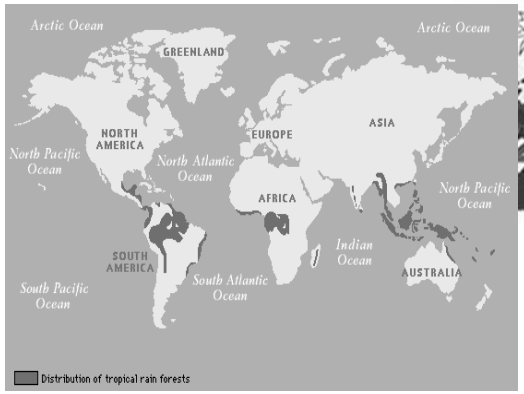
Category	Positives	Negatives
Economic. This is to do with…MONEY	• Factory workers $1.25 an hour • Workers in NIKE WORLD HQ and sports starts paid very well e.g- Ronaldo earnt $20 million in 2017 from Nike	• Some say $1.25 is not enough to earn to maintain a good QOL.
Social. This is to do with PEOPLE'S LIVES	• Provided with a job, therefore reduced unemployment in many LIC countries • Nike improves some roads, infrastructure in local towns so people benefit from that.	• Living conditions of workers poor, poor housing, lack of sanitation, basic diet. • Children often cant afford to go to school as workers cant afford it
Environmental. This is to do with THE ENVIRONMENT	• Nike world HQ environment is spotless with good maintenance	• Nike dump leftover shoe rubber in streets, and burn rubber releasing toxic fumes which harms peoples QOL as children get lung diseases

Knowledge Organiser: Rainforests

Where are the worlds biomes found
Biome = a large naturally occurring community of flora and fauna occupying a major habitat, e.g. tundra.



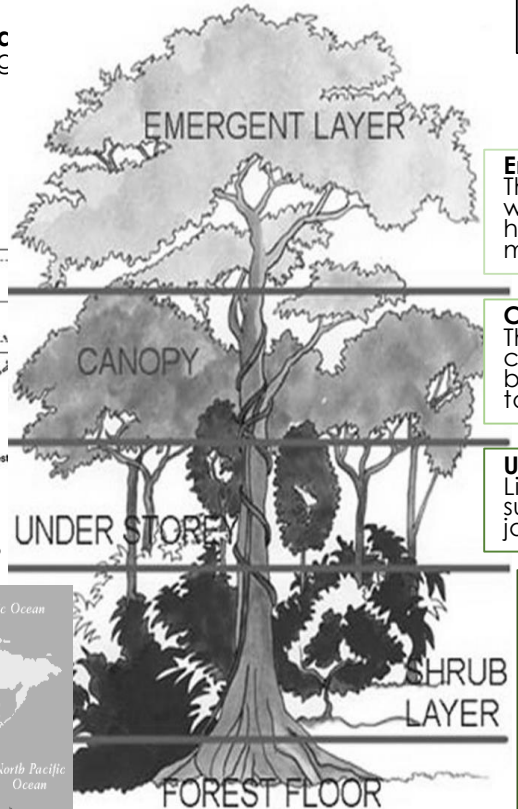
Where are the rainforests located?



What is deforestation?
Deforestation is the cutting down and removal of trees by humans.

Malaysian Deforestation
Since 2000, some 140200ha of forest have been lost on average every year.

Causes of deforestation
- ✓ Agriculture
- ✓ Dams
- ✓ Logging
- ✓ Mining
- ✓ Oil Extraction
- ✓ Ranching
- ✓ Road Building



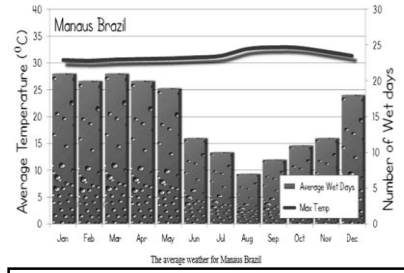
The layers of the rainforest

Emergent Layer:
The tallest trees are the "emergents," towering as much as 200 feet above the forest floor, with trunks that measure up to 16 feet around. Most of these trees are broad-leaved, hardwood evergreens. Sunlight is plentiful up here. Animals found here include eagles, monkeys, bats and butterflies.

Canopy Layer:
This is the primary layer of the forest and forms a roof over the two remaining layers. Most canopy trees have smooth, oval leaves that come to a point. It is a maze of leaves and branches. Many animals live in this area as food is abundant. These animals include: snakes, toucans and tree frogs.

Under Storey/Under Canopy Layer:
Little sunshine reaches the area, so the plants have to grow larger leaves to reach the sunlight. The plants in this area seldom grow to 12 feet. Many animals live here, including jaguars, red-eyes tree frogs and leopards. There is also a large concentration of insects here.

Shrub Layer:
It is very dark down here. Almost no plants grow in this area as a result of the lack of light. Since hardly any sun reaches the forest floor, things begin to decay quickly. A leaf that might take one year to decompose in a regular climate will disappear in 6 weeks. Giant anteaters and alligators live in this layer.

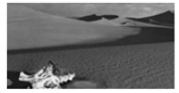
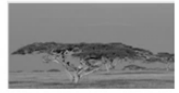


What is ecotourism?
This is tourism directed towards natural environments, where the tourists intend to support conservation efforts and observe wildlife.

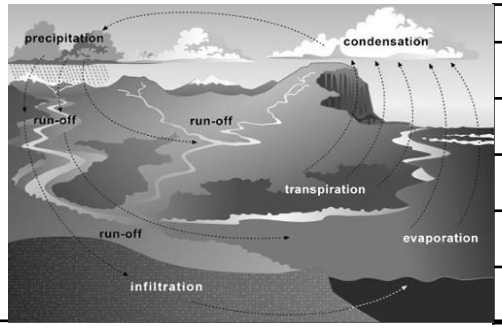
Ecotourism
- Usually involves small numbers of visitors.
- Uses local guides
- Uses local foods
- Lower carbon footprint
- Ecofriendly

The Amazon

Sustainable Development: meets the needs of the current population without compromising the needs of future generations.

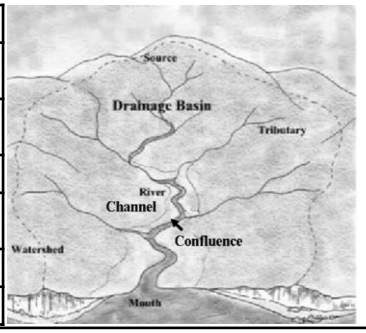
Biome	Description	Photo
Deciduous forest	Can be found in the eastern half of North America, and the middle of Europe. There are many in Asia, too. There are no extremes of climate. It has four distinct seasons: spring, summer, autumn and winter. In autumn, the leaves on trees change colour, and in winter, they lose their leaves	
Desert	This area is very hot and extremely dry. Because of this, very little grows – only very hardy plants such as cactus, which can survive drought.	
Tropical Rainforest	A very hot and wet biome that is located on or near the equator, an has the greatest biodiversity (variation of plants and animals) found anywhere on Earth.	
Savannah	A hot and dry grassland scattered with shrubs and isolated trees, which can be found between a tropical rainforest and desert biome.	
Coniferous	This biome is also called the taiga. It is a cold woodland located north of temperate deciduous forests. It is the largest biome, covering about 50 million acres of land, which constitutes about 17% of the Earth's land area and can be found in Canada, Europe, Asia and the United States of America.	
Tundra	It is below freezing at night all year round; this biome covers one-fifth of the land on Earth. There is little rain, a short growing season, and poor nutrients. The word "Tundra" comes from Lappish (the language of Lapland), which means "land with no trees".	

Rivers Knowledge Organiser



Water Cycle - Key Terms	
Precipitation	Moisture falling from clouds as rain, snow or hail.
Interception	Vegetation prevents water reaching the ground.
Surface Runoff	Water flowing over the surface of the land into rivers
Infiltration	Water absorbed into the soil from the ground.
Transpiration	Water lost through leaves of plants.

Drainage Basin - Key Terms	
Drainage basin	An area of land drained by a river and its tributaries.
Watershed	The area of high land forming the edge (boundary) of the drainage basin
Source	Where the river begins.
Tributary	A small river or stream that joins a larger river.
Confluence	The point at which two rivers meet.
Mouth	Where a river meets the sea.



Types of Erosion

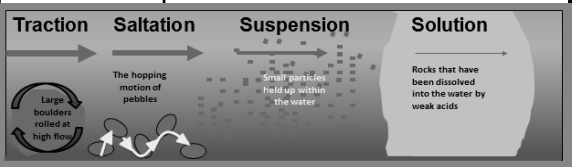
The break down and transport of rocks – smooth, round and sorted.

Attrition	Rocks that bash together to become smooth/smaller.
Solution	A chemical reaction that dissolves rocks.
Abrasion	Rocks hurled at the base of a cliff to break pieces apart or scraped against the banks and bed of a river.
Hydraulic Action	Water enters cracks in the cliff, or river bank, air compresses, causing the crack to expand.

Types of Transportation

A natural process by which eroded material is carried/transported.

Solution	Minerals dissolve in water and are carried along.
Suspension	Sediment is carried along in the flow of the water.
Saltation	Pebbles that bounce along the sea/river bed.
Traction	Boulders that roll along a river/sea bed by the force of the flowing water.



What is Deposition?

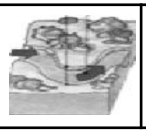
When the sea or river loses energy, it drops the sand, rock particles and pebbles it has been carrying. This is called deposition. Heaviest material is deposited first.

Upper Course of a River

Near the source, the river flows over steep gradient from the hill/mountains. This gives the river a lot of energy, so it will erode the riverbed vertically to form narrow valleys.

Formation of Ox-bow Lakes

Step 1



Erosion of outer bank forms river cliff. Deposition inner bank forms slip off slope.

Step 2

Further hydraulic action and abrasion of outer banks, neck gets smaller.

Step 3

Erosion breaks through neck, normally during a flood, so river takes the fastest route, redirecting flow

Step 4

Deposition on the outer edges of the channel cuts off the meander leaving an oxbow lake.

Lower Course of a River

Near the river's mouth, the river widens further and becomes flatter. Material transported is deposited at the sides of the river, or when it meets the sea.

Formation of Floodplains and Levees

When a river floods, fine silt/alluvium is deposited on the valley floor. Closer to the river's banks, the heavier materials build up to form natural levees.

- ✓ Nutrient rich soil makes it ideal for farming.
- ✓ Flat land for building houses.

Case Study - Boscastle flood August 16th 2004

Boscastle is a small village in Cornwall. It has a permanent population of under 1000. 90% of jobs in the village are linked to tourism.

Effects of flood - 100 homes and 25 businesses damaged. 75 cars and 8 boats washed away. 150 people had to be rescued. Damage cost £15 million.

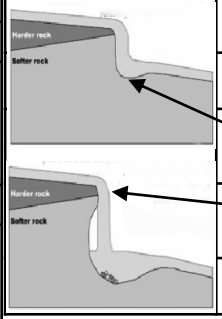
Causes of flood - 5 hours of heavy rain (3 inches in 1 hour), Impermeable rock, steep valley sides, thin soils limit vegetation. Buildings narrowing river channel. Narrow bridges trapped debris.

Responses to flood - Scheme cost £4.6 million. Beds of rivers lowered by 6 ft and channels widened. Bridges widened. Car park raised by 5m. Trees removed from near river.

Middle Course of a River

The gradient gets gentler. The river starts to speed up. The river erodes laterally making the river wider.

Formation of a Waterfall



1) River flows over alternative types of rocks.

2) River erodes soft rock faster creating a step.

3) Further hydraulic action and abrasion form a plunge pool beneath.

4) Hard rock above is undercut leaving cap rock which collapses providing more material for erosion.

5) Waterfall retreats leaving steep sided gorge.

River Management Schemes

Soft Engineering	Hard Engineering
Afforestation – plant trees to soak up rainwater - reduces flood risk. **Demountable Flood Barriers** put in place when warning raised. **Managed Flooding** – naturally let areas flood, protect settlements.	**Straightening Channel** – increases velocity to remove flood water. **Artificial Levees** – heightens river so flood water is contained. **Deepening or widening river** to increase capacity for a flood.

Physical and Human Causes of Flooding.

***Physical:* Prolong & heavy rainfall** Long periods of rain causes soil to become saturated leading runoff.	***Physical:* Geology** Impermeable rocks causes surface runoff to increase river discharge.
***Physical:* Relief** Steep-sided valleys channels water to flow quickly into rivers causing greater discharge.	***Human:* Land Use** Tarmac and concrete are impermeable. This prevents infiltration & causes surface runoff.