

Year 10 Curriculum Overview Geography 2023-24

Unit title	Paper 1 – Hazards	Paper 2 – Resource management	Paper 1 - Rivers	Paper 1 – Coasts and coastal fieldwork	Paper 2 - Changing Economic World
Approximate number of lessons	22 lessons	10 lessons	12 lessons	9 + 6 fieldwork lessons	14 lessons
Curriculum content	The students will study tectonic hazards, weather hazards and climate change.	Students will study the global distribution of food, water and energy and will look at how the UK deals with the provision of these resources. Students will then study the topic of “Food” in detail, looking at the causes and impacts of food insecurity and different methods of increasing food supply.	Students will study river landscapes including fluvial processes, river landforms and flooding.	Students will study coastal landscapes including processes, landforms and management. Students will also undertake their fieldtrip to Cromer where they will collect geographical data, analyse the data and present their findings and explain their conclusions.	Students will study the following units during their Year 10 geography: <ul style="list-style-type: none"> • Why can our world be described as unequal? • Which strategies exist for closing the development gap? • What is life like in Nigeria?
Links to prior learning	Students have studied tectonic hazards in Year 8 and have studied climate change and its global impacts in year 9.	Students have studied global connections in Year 8, which includes lessons on the origin of the UK’s food and Fair-Trade initiatives.	Students have studied rivers and flooding in Year 7.	Students have studied erosion landforms in Year 7.	Students have studied Africa and Asia in Years 7 and 8
Assessment Overview	Pre-assessment question: To what extent do the effects of a tectonic hazard vary between areas of contrasting wealth? Use one or more named examples in your answer. [9 marks]. Assessment: Two timed assessments with GCSE higher and lower tariff	Assessment: A timed assessment including GCSE higher and lower tariff questions, with prior knowledge included.	Assessment: A timed assessment including GCSE lower and higher tariff questions, with prior knowledge included.	Pre-assessment question: To what extent did the data collected allow us to draw reliable and valid conclusions? Assessment: A timed assessment including GCSE lower and higher tariff	Pre-assessment question: Using an example you have studied, suggest how tourism can help reduce the development gap. Assessment: GCSE-style questions consolidating the major case study of Nigeria.

	<p>questions, comprising a tectonic hazards assessment and a weather hazards assessment. Assessments will also practise students' skills, such as use of figures, maps, and graphs.</p>			<p>questions and practising geographical skills.</p>	
<p>Cultural capital</p>	<p>Visit The Natural History Museum</p> <p>Read "Can We Protect People From Natural Disasters" by Catherine Chambers</p> <p>Read "Disaster by Choice: How our actions turn natural hazards into catastrophes" by Ilan Kelman</p> <p>Tectonic hazards Read "The Tectonic Plates are Moving!" by Roy Livermore</p> <p>Watch "Into the Inferno" on Netflix</p> <p>Watch "A Perfect Planet, Series 1, Episode 1 – Volcano"</p> <p>Watch "The Impossible"</p>	<p>Read "When the Rivers Run Dry, The Global Water Crisis and How to Solve it" by Fred Pearce</p> <p>Research geographical issues in the news e.g. search "water shortage" on the BBC News website</p> <p>Read "Factfulness" by Hans Rosling</p> <p>Watch – Cowspiracy on Netflix</p> <p>Explore 2020 Hunger Map</p> <p>Explore The Global Food security index</p>	<p>Watch "Sacred Rivers" with Simon Reeve</p> <p>Go for a walk along the River Lark (or any other local river) sketch or take photographs of what you can see on the way.</p> <p>Develop your cartographic skills and use an OS map to follow a river to the sea.</p>	<p>Watch "Blue Planet" and "Blue Planet II"</p> <p>Visit the Suffolk or North Norfolk coast and look out for erosion and deposition landforms, and coastal management.</p>	<p>Explore The Global Food security index Select a country, change the graph axis to compare GDP. What can you learn about the UK and Nigeria?</p> <p>Explore The Global Economy Select countries and indicators to create your own graphs. What can you learn about the UK and Nigeria?</p> <p>Read "Global Economy as You've Never Seen it, The 99 Ingenious Infographics That Put It All Together" by Tomas Ramage.</p> <p>Read The Economy of the United Kingdom</p>

	<p><u>Weather hazards</u> Read “Hurricanes vs. Tornadoes vs Tyoons: Wind Systems of the World” by Baby Professor</p> <p><u>Climate Change</u> Watch “Climate Change – the facts” on iPlayer</p> <p>Watch “Climate Change: Ade on the front line” on iPlayer</p> <p>Watch “Before the Flood”</p> <p>Read “Collapse: How Societies Choose to Fail or Survive” by Jared Diamond</p> <p>Read “Factfulness” by Hans Rosling</p> <p>Read “The God Species: How Humans Really Can Save the Planet...” by Mark Lynas</p> <p>Read “No one is too small to make a difference” by Greta Thunberg</p> <p>Read “There is no planet B: A handbook for the make or</p>				
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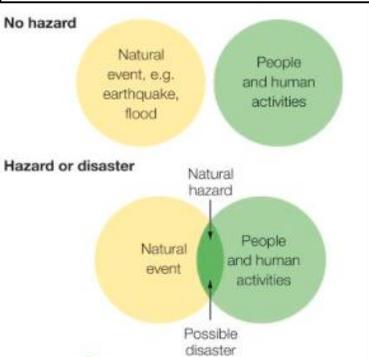
Year 10 Curriculum Overview Geography 2023-24

	break years" by Mike Bernard-Lee				
Link to detailed content (Knowledge Organiser/Unit Overview/Scheme of Learning)	<i>Knowledge organiser</i> 1. <i>Hazards</i>	<i>Knowledge organiser</i> 2. <i>Resource management</i>	<i>Knowledge organiser</i> 3. <i>Rivers and coasts</i>	<i>Knowledge organiser</i> 3. <i>Rivers and coasts</i>	<i>Knowledge organiser</i> 4. <i>Economic World</i>

Knowledge organiser: GCSE – The Challenge of natural hazards

Type of hazard	Example
Atmospheric hazard	Rain, lightning, snow, hurricane.
Geological hazard	Volcano, avalanche, earthquake.

When is a natural event a hazard?
 A natural hazard occurs when a natural event overlaps with human activities.



Distribution of earthquakes
 Earthquakes and volcanoes usually occur on plate margins. They occur in a linear pattern.



Hazard risk is the chance of probability of being affected by a natural event.

Factor	How it affects hazard risk
Urbanisation	Some of the world's largest cities (Tokyo, LA) are at risk of earthquakes. Densely populated urban areas are at great risk from natural events such as earthquakes and tropical cyclones.
Poverty	In poorer parts of the world poverty may force people to live in areas at risk, e.g. unstable slopes prone to flooding/landslides.
Climate change	There may be more intense storms and hurricanes, increased number of floods/droughts and famines.
Farming	Floodplains are fertile for farming.

The structure of the Earth

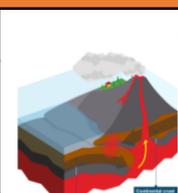
The Crust	Varies in thickness (5-10km) beneath the ocean. Made up of several large plates.
The Mantle	Widest layer (2900km thick). The heat and pressure means the rock is in a liquid state that is in a state of convection.
The Inner and outer Core	Hottest section (5000 degrees). Mostly made of iron and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

Convection Currents	
The crust is divided into tectonic plates which are moving due to convection currents in the mantle.	
1	Radioactive decay of some of the elements in the core and mantle generate a lot of heat.
2	When lower parts of the mantle molten rock (Magma) heat up they become less dense and slowly rise .
3	As they move towards the top they cool down, become more dense and slowly sink .
4	These circular movements of semi-molten rock are convection currents
5	Convection currents create drag on the base of the tectonic plates and this causes them to move.

Types of Plate Margins

Destructive Plate Margin

When the denser plate subducts beneath the other, friction causes it to **melt and become molten magma**. The magma forces its way up to the surface to form a volcano. This margin is also responsible for **devastating earthquakes**.



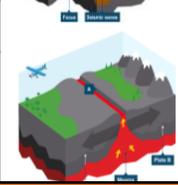
Constructive Plate Margin

Here two plates are **moving apart** causing new magma to reach the surface through the gap. Volcanoes formed along this crack cause a submarine mountain range such as those in the **Mid Atlantic Ridge**.



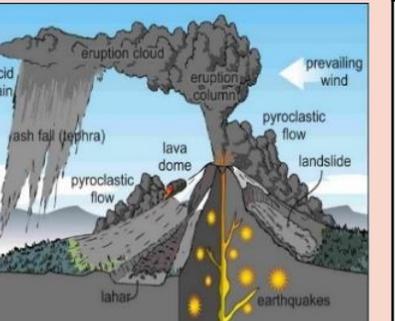
Conservative Plate Margin

A conservative plate boundary occurs where plates **slide past each other** in opposite directions, or in the same direction but at different speeds. This is responsible for earthquakes such as the ones happening along the San Andreas Fault, USA.



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.



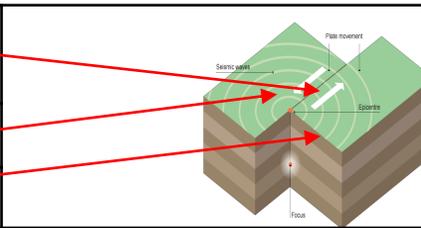
Causes of Earthquakes

Earthquakes are caused when two plates become **locked** causing **friction** to build up. From this **stress**, the **pressure** will eventually be released, triggering the plates to move into a new position. This movement causes energy in the form of **seismic waves**, to travel from the **focus** towards the **epicentre**. As a result, the crust vibrates triggering an earthquake.

The point directly above the focus, where the seismic waves reach first, is called the **EPICENTRE**.

SEISMIC WAVES (energy waves) travel out from the focus.

The point at which pressure is released is called the **FOCUS**.



LIC : Nepal – 25th April, 2015

Causes
 7.9 on the Richter scale. Epicentre was 80km NW of Kathmandu. It is on a destructive plate margin. The Indo-Australian and Eurasian plate are colliding.

Effects
Primary – 9000 people died,, 20, 000 injured. 3 million left homeless, electricity and water supplies, sanitation and communication affected. International airport became congested as aid arrived.
Secondary – landslides and avalanches blocked roads, avalanches on Mount Everest killed 19 people.

Response and Management
Immediate – Search and rescue teams, medical and water supplies arrived quickly from UK, India and China. Helicopters rescued people stranded on Mount Everest.
Long-term – roads were repaired and landslides cleared. Thousands of homeless people to be re-housed. 7000+ schools to be re-built. Repairs to Everest base camp and trekking routes.

LIC : Chile – 27th February, 2010

Causes
 8.8 on the Richter scale. It is on a destructive plate margin. The Nazca Plate is moving beneath the South American plate.

Effects
Primary – 500 killed, 12, 000 injured. Port and airport badly damaged. Much of Chile lost power, water supplies and communication. Cost estimated at US\$30 billion.
Secondary – 1500km of roads damaged, mainly by landslides. Coastal towns devastated by tsunami waves. Fire at a chemical plant.

Response and Management
Immediate – emergency services acted fast. Power and water restored to 90% of homes within 10 days. A national appeal raised US\$60 million.
Long-term – a month after the earthquake, Chile's government launched a housing plan to help nearly 200, 000 households affected. The president announced it would take 4 years to fully recover.

Comparing Nepal and Chile

GDP (a measure of wealth) – Chile – 38th out of 193. Nepal – 109th out of 193. Chile is therefore a wealthier country.
HDI (a measure of the level of development) – Chile – 41st out of 187. Nepal – 145th out of 187. Chile therefore has a higher level of development.



Knowledge organiser: GCSE – The Challenge of natural hazards

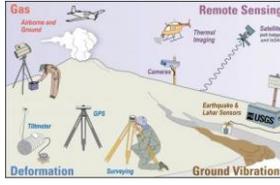
Why people choose to live in hazardous areas

Earthquakes and volcanic eruptions don't happen very often – they're not a big threat. Better building design – can withstand earthquakes – people feel less at risk. People living in poverty have other things to think about – food water, security etc. Some people may not be aware of the risks. Fertile soils – the soils around volcanoes are rich and good for farming. Other benefits include mineral deposits and hot water.

Iceland - Lies on the Mid-Atlantic Ridge, a constructive margin. There are several active volcanoes. There are many benefits – over a million tourists visit Iceland every year. Nearly 90% of all buildings receive their hot water from natural heat sources. Volcanic rocks are used in construction for roads and buildings. 25% of the countries energy is generated by geothermal energy.

How to reduce the risk from tectonic hazards

	Volcanoes	Earthquakes
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Monitoring Using scientific equipment to detect warning signs of events.	As magma rises, volcanoes give warning signs. Remote sensing – detect heat and changes to volcanoes shape, Seismicity – seismographs record earthquakes. Ground deformation – changes to the shape of the volcano are measured using laser beams. Gas – instruments detect gases released as magma rises.	Earthquakes generally occur without warning. 
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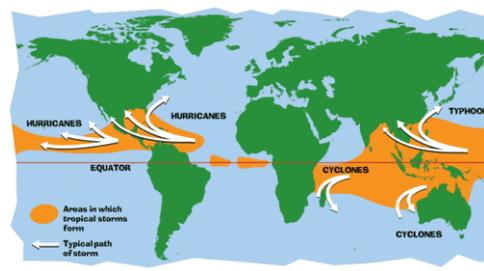
Prediction Using historical evidence and monitoring to make predictions about where and when a hazard may happen	Prediction is based on scientific monitoring.	It is impossible to make accurate predictions about earthquakes due to the lack of clear warning signs. Scientists can however study historical events to identify areas at risk.
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Protection Designing buildings that will withstand tectonic hazards	There is little that can be done to protect people and property. Embankments or explosives can divert lava flows away from property.	Protection is the main way to reduce the risk of earthquakes. Buildings can have walls reinforced with steels and concrete, shock absorbers, open areas nearby for evacuation and automatic shutters on the windows.
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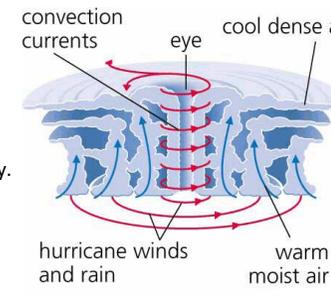
Planning Identifying and avoiding places most at risk	Hazard maps have been produced for many of the world's most dangerous volcanoes, showing the likely areas to be affected. They can be used in evaluation plans.	Maps can be produced to show the effects of an earthquake or identify areas most at risk. High-value land can then be protected in those vulnerable areas.
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Tropical storms

Occur in low latitudes between 5° and 30° north and south of the equator (in the tropics). Ocean temperature needs to be above 27° C.



Sequence of a tropical storm

1. Air is heated above warm tropical oceans.
 2. Air rises under low pressure conditions.
 3. Strong winds form as rising air draws in more air and moisture causing torrential rain.
 4. Air spins due to Coriolis effect around a calm eye of the storm.
 5. Cold air sinks in the eye so it is clear and dry.
 6. Heat is given off as it cools powering the storm.
 7. On meeting land, it loses source of heat and moisture so loses power.
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Typhoon Haiyan

Location/events

November 2013, category 5, winds 275km/hr, waves 15m high.



Effects

Primary effects – 6300 killed, 600,000 displaced, 90% of city of Tacloban destroyed, airport damaged, damage to buildings and power lines and destroyed crops. 400mm of rain caused flooding. Secondary effects – 14 million affected, landslides and blocked roads, ferry services and flights disrupted, shortages of water, food and shelter, outbreak of diseases, jobs lost, looting and violence in the city of Tacloban.

Responses

Immediate responses – international government and aid agencies responded quickly with food, water and temporary shelters. 1200 evacuation centres were set up to help the homeless, UK government sent shelter kits, Philippines Red Cross delivered basic food aid. Long-term responses – rebuilding of roads, bridges and airport facilities, “cash-for-work” scheme – people paid to help clear debris and rebuild the city, thousands of homes re-built away from areas at risk of flooding.

How to reduce the effects of tropical storms

Prediction	Planning	Protection
Monitoring wind patterns allows path to be predicted. Use of satellites to monitor path to allow evacuation	Avoid building in high risk areas Emergency drills Evacuation routes	Reinforced buildings and stilts to make safe Flood defences e.g. levees and sea walls Replanting Mangroves

Extreme weather in the UK

Rain – can cause flooding damaging homes and business.
Snow & Ice – causes injuries and disruption to schools and business. Destroys farm crops.
Hail – causes damage to property and crops.
Drought – limited water supply can damage crops.
Wind – damage to property and damage to trees potentially leading to injury.
Thunderstorms – lightning can cause fires or even death.
Heat waves – causes breathing difficulties and can disrupt travel.
 UK weather is getting more extreme due to climate change. Temperatures are more extreme and rain is more frequent and intense leading to more flooding events. Since 1980 average temperature has increased 1 degree and winter rainfall has increased.

Somerset levels floods, 2014

Location

South-west England, low lying wetlands bordered by the Bristol Channel and Quantock Hills to the west and the Mendip Hills to the north. The area is drained by many rivers, mainly the Tone and Parrett.

Causes

It was the wettest January since records began in 1910. 350mm of rain fell in January and February. High tides and storm surges. Rivers had not been dredged for at least 20 years. They were clogged with sediment.

Effects

Social – 600 houses flooded, 16 farms evacuated, residents evacuated, villages cut-off, power supplies cut off. Economic – cost of flooding = £10 million, 13,000 HA of agricultural land under water for 3-4 weeks, 1000 livestock evacuated, local roads cut off. Environmental – floodwaters contaminated with sewage and other pollutants, debris had to be cleared, stagnant water had to be deoxygenated before being pumped back into rivers.

Responses

Immediate responses – villages used boats to get around. Local community groups and volunteers gave support. Longer-term responses - £20 million Flood Action Plan launched by Somerset County Council. In March 2014, 8km of rivers were dredged to increase capacity, road levels were raised, vulnerable communities now have flood defences, river banks strengthened and raised.

Knowledge organiser: GCSE – The Challenge of natural hazards

Evidence for climate change
The last 2.6 million years is called the Quaternary period. Temperatures have fluctuated a great deal. As a result of climate change, many of the world's glaciers and ice caps are shrinking, Arctic sea ice is less extensive than in the past, low lying islands such as the Maldives and Tuvalu are under threat from sea-level rise and agricultural land in Bangladesh, Vietnam, India and China is under threat.
Ice and sediment cores
Ice sheets are made up of layers of snow, one per year. Gases trapped in layers of ice can be analysed. Ice cores from Antarctica show changes over the last 400 000 years. Remains of organisms found in cores from the ocean floor can be traced back 5 million years.
Pollen analysis
Pollen is preserved in sediment. Different species need different climatic conditions.
Tree rings
A tree grows one new ring each year. Rings are thicker in warm, wet conditions - This gives us reliable evidence for the last 10 000 years.
Temperature records
Historical records date back to the 1850s. Historical records also tell us about harvest and weather reports.

Causes of climate change

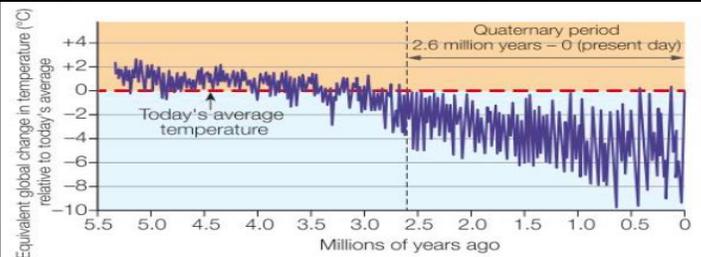
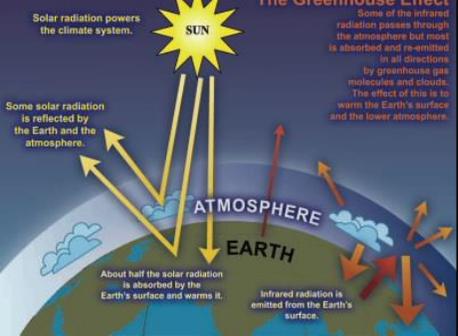
Physical causes	Human causes
<ul style="list-style-type: none"> - Orbital changes – The sun's energy on the Earth's surface changes as the Earth's orbit is elliptical its axis is tilted on an angle. Milankovitch cycles – see image. - Solar Output – sunspots increase to a maximum every 11 years. - Volcanic activity – volcanic ash reflects sunlight away reducing global temperatures temporarily. E.G – Mount Tambora – 1815 – Indonesia – ash and sulphuric acid caused average global temperatures to fall by 0.4°C – 0.7°C and 1816 became known as "The year without a summer". Harvests failed, food shortages, food prices rose, riots. 200, 000 died in Europe due to famine. 	<ul style="list-style-type: none"> Fossil fuels – release carbon dioxide with accounts for 50% of greenhouse gases. Agriculture – accounts for around 20% of greenhouse gases due to methane production from cows etc. Larger populations and growing demand for met and rice increase contribution. Deforestation – logging and clearing land for agriculture increases carbon dioxide in the atmosphere and reduces ability to planet to absorb carbon through photosynthesis.

Milankovitch Cycle

Eccentricity Earth encounters more variation in the energy that it receives from the sun when Earth's orbit is elongated than it does when Earth's orbit is more circular.

Tilt The tilt of Earth's axis varies between 22.2° and 24.5°. The greater the tilt angle is, the more solar energy the poles receive.

Precession A gradual change, or "wobble," in the orientation of Earth's axis affects the relationship between Earth's tilt and eccentricity.



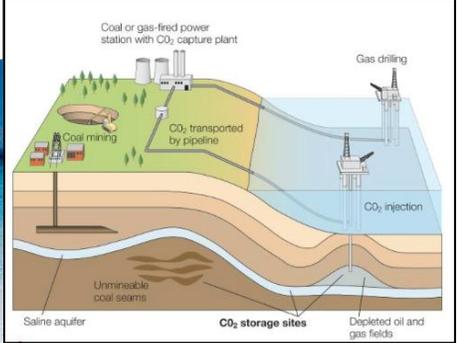
A Average global temperatures for the last 5.5 million years using information from sediment cores



Effects of climate change	
Social	Environmental
<ul style="list-style-type: none"> Increased disease, e.g. skin cancer and heat stroke. Winter deaths decrease with milder winters. Crop yields affected by up to 12% in South America but will increase in Northern Europe but will need more irrigation. Less ice in Arctic Ocean increases shipping and extraction of oil and gas reserves. Droughts reduce food and water supply in sub-Saharan Africa. Water scarcity in South and South East UK. Increased flood risk. 70% of Asia is at risk of increased flooding Declining fish in some areas affect diet and jobs. Increased extreme weather Skiing industry in Alps threatened. 	<ul style="list-style-type: none"> Increased drought in Mediterranean region. Lower rainfall causes food shortages for orangutans in Borneo and Indonesia. Sea level rise leads to flooding and coastal erosion. Ice melts threaten habitats of polar bears. Warmer rivers affect marine wildlife. Forests in North America may experience more pests, disease and forest fires. Coral bleaching and decline in biodiversity.

Managing climate change

Mitigation	Adaptation
<ul style="list-style-type: none"> Alternative energy production will reduce CO2 production such as hydro-electricity, nuclear power, solar, wind and tidal. The UK aims to produce 15% of its energy from renewable sources by 2020. Planting Trees – helps to remove carbon dioxide. Carbon Capture – takes carbon dioxide from emission sources is stored underground. International Agreements e.g. the Paris Climate Agreement. 	<ul style="list-style-type: none"> Changes in agricultural systems need to react to changing rainfall and temperature patterns and threat of disease and pests. Irrigation in the Gambia – drought resistant strains of crops, education, new cropping patterns introduced. Managing water supplies – eg. by installing water efficient devices and increasing supply through desalination plants. Himalayas – millions of people depend on rivers fed by snow melt. Glaciers are retreating which threatens water security in the region. Artificial glacier projects are used where water is collected in winter. It freezes and the "melt" is used to provide water for the local villages. Reducing risk from rising sea levels would involve constructing defences such as the Thames Flood Barrier or restoring mangrove forests, or raising buildings on stilts. Managing rising sea levels in the Maldives – the highest point on the islands is just 2.4m. A 3m sea wall is being constructed around the capital city Malé. Houses are being built on stilts. Mangrove forests are being restored. Their roots trap sediment and offer protection from storm waves.



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Managing rising sea levels in the Maldives – the highest point on the islands is just 2.4m. A 3m sea wall is being constructed around the capital city Malé. Houses are being built on stilts. Mangrove forests are being restored. Their roots trap sediment and offer protection from storm waves.

Resource Challenges

Resources are things that humans require for life or to make our lives easier. Humans are becoming increasingly dependent on exploiting these resources, and as a result they are in high demand.

Significance of Resources

Resources such as food, energy and water are what is needed for basic human development.

FOOD

Without enough nutritious food, people can become **malnourished**. Over one billion people in the world are considered malnourished. A further two billion people suffer from **undernutrition** (malnutrition) – a poorly balanced diet, lacking in minerals and vitamins.

This can make them ill. This can prevent people working or receiving education.



ENERGY

A good supply of energy is needed for a basic standard of living. People need **light and heat** for cooking or to stay warm. It is also needed for industry. Energy is required for economic development.

In the past, countries depended on themselves for energy but now energy is traded worldwide. Energy consumption is increasing as the world becomes more developed. This is especially true for NEE's.

WATER

People need a supply of **clean and safe water** for drinking, cooking and washing. Water is also needed for food, clothes and other products. Water is also vital for crops and food supply and producing energy. As the population grows, more people are faced with a water shortage.

The imbalance in water supply is due to variations in climate and rainfall. Rainwater needs to be captured and stored and this can be expensive.

Many of the world's poorest countries have water shortages.

The UN estimates that by 2050 there will be 50 countries facing water scarcity.



Food in the UK

How is demand changing?

- Due to the population increase, demand for food is also increasing.
- The UK is not self-sufficient – 40% of food consumed is imported (and this is increasing)
- Transporting food by air is expensive.
- **Food miles** = the distance food travels
- It adds to our **carbon footprint**.

Why does the UK import so much food?

- UK produced food is expensive
- UK climate
- Demand for produce all year round
- Demand for greater choice and exotic food all year ground.

Agribusiness

Farming is being treated like a large industrial business. This is increasing food production.

Lynford House Farm

- In East Anglia – 570 ha
- High inputs of chemicals (pesticides and fertilisers) & machinery.
- The land is flat and fertile.
- The main crops are wheat, sugar beet and potatoes.
- Only a small number of workers.

Sustainable Foods

Organic foods that have little impact on the environment and are healthier have been rising. Local food sourcing is also rising in popularity.

Riverford Organic Farms

- Devon, Yorkshire, Peterborough and Hampshire.
- Reduced food miles, supports local farmers, provides local employment.

The Challenge of Resource Management

Energy in the UK

Growing Demand

The UK **consumes less energy** than compared to the 1970s despite a smaller population. This is due to the **decline of industry** and more **energy efficient appliances**.

Energy Mix

The majority of UK's energy mix comes from **fossil fuels**. By 2020, the UK aims for 15% of its energy to come from **renewable sources**. These renewable sources do not contribute to **climate change**.

Changes in Energy Mix

- 75% of the UK's oil and gas has been used up.
- Coal consumption has declined.
- UK has become too dependent on imported energy.
- By 2020 the UK is likely to be importing 75% of its energy.
- The UK's **energy security** is likely to be affected as it relies on imported energy.

Water in the UK

Growing Demand

The average water used per household has risen by 70%. This growing demand is predicted to increase by 5% by 2020.

This is due to:

- A growing UK population.
- Water-intensive appliances.
- Showers and baths taken.
- Industrial and leisure use.
- Watering greenhouses.

Deficit and Surplus

The north and west have a **water surplus** (more water than is required). The south and east have a **water deficit** (more water needed than is actually available). More than half of England is experiencing **water stress** (where demand exceeds supply).

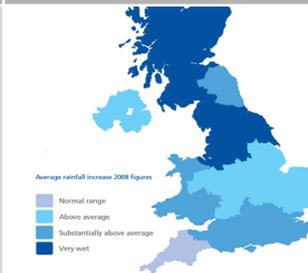
Water Transfer

Water transfer involves moving water through pipes from areas of surplus (Wales) to areas of deficit (London).

Opposition includes:

- Effects on **land and wildlife**.
- High maintenance **costs**.
- The **amount of energy** required to move water over long distances.

Water stress in the UK



Pollution and Quality

Causes of poor quality of water include:

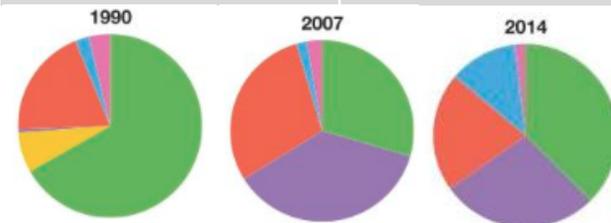
- Leaching from old mines
- Discharge from industrial sites
- Runoff from chemical fertilisers used on farmland
- Water used for cooling powerstations then released back into rivers.

Management

UK has **strict laws** that limits the amount of discharge from factories and farms.

The Environment Agency -

- Monitor the quality of water
- Filter water to remove sediment
- Add chlorine to purify
- Restrict recreational use
- Impose laws on the uses of water



Energy in the UK (continued)

What is fracking?

Natural gas is trapped underground. High-pressure liquids (water, sand and chemicals) are introduced to fracture the rock and release the gas.

Issues of fracking?

- Possibility of earthquakes
- Pollution of underground water sources
 - High costs

Significance of Renewables

- + The UK government is investing more into low carbon alternatives.
- + UK government aims to meet targets for reducing emissions.
- + Renewable sources include wind, solar and tidal energy.
- Although infinite, renewables are still expensive to install.
- Shale gas deposits may be exploited in the near future.

The UK is developing the use of **wind** and **nuclear**.

Nuclear

- They are **expensive** to build.
- Boost economy and provides jobs.
- Issues around the processing and **storage** of toxic waste.
- Warm waste water can harm local ecosystems.
- **Radioactive leaks**

Wind farms

- **Costly** to construct
- Local economy may suffer due to reduced visitors
- Some may attract **tourists**
- Lower energy bills
- **Visual impact** on environment
- No harmful gases
- Reduce the **carbon footprint**
- Noise



Impacts of food insecurity

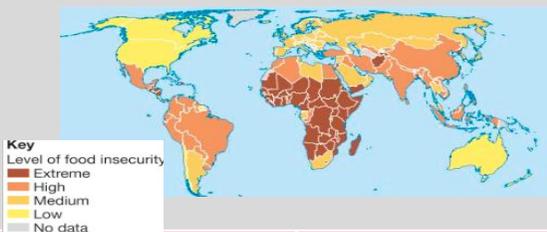
Famine – Famine causes malnutrition, starvation and death. Ethiopia, in the 1980's, 400, 000 people died of starvation, due to political conflict and drought.
Undernutrition – More than 800million people suffered from under nutrition between 2012 and 2014. it is a major problem in Asia and sub-Saharan Africa.
Soil erosion – Soil erosion can occur due to overgrazing, deforestation for farming and growing crops which makes the land unfertile.
Rising prices – Food prices are rising across the world due to increased prices for fertilisers, animal feed, storage, processing and transportation. This affects people in LIC's more.
Social unrest – There has been social unrest in North Africa and the Middle East. These incidents are sometimes called **food riots**.

The Challenge of Resource Management

FOOD

Food security

Food Security is when people at all times need to have physical & economic access to food to meet their dietary needs for an active & healthy life. This is the opposite to **Food Insecurity** which is when a country can't supply enough food to feed its population



Human

- **Poverty** prevents people affording food and buying equipment.
- **Conflict** disrupts farming and prevents supplies.
- **Food waste** due to poor transport and storage.
- **Climate Change** is affecting rainfall patterns making food production difficult.

Physical

- The **quality of soil** is important to ensure crops have key nutrients.
- **Water supply** needs to be reliable to allow food to grow.
- **Pest, diseases and parasites** can destroy vast amounts of crops that are necessary to populations.
- **Extreme weather** events can damage crops (i.e. floods).

Food Supply



Whilst Asia and North America have **high** production outputs (due to intensive farming methods and high investment), **Africa** and **Central America** have **low** production outputs (due to rainfall, low investment and lack of education).

Increasing Food Supply

Hydroponics - A method of growing plants without soil. Instead they use nutrient solution.

Aeroponics – Soil not used. Plants are sprayed with fine water mist containing nutrients.
New Green Revolution - Aims to improve yields in a more sustainable way. They aim to use irrigation, soil conservation and harvesting water. Involves using both GM varieties and traditional and organic farming.

Biotechnology - Genetically modified (GM) crops changes the DNA of foods to enhance productivity and properties.

Appropriate technology – using skills or materials that are cheap and easily available for people in the poorest parts of the world.

Irrigation - Artificially watering the land so crops can grow. Useful in dry areas to make crops more productive.

Daily Calorie Intake



This map shows how many **calories per person** that are consumed on average for each country.

This can indicate the global distribution of **available food** and **food inequality**.

- The UK and Canada have the highest - >3400 calories
 - Most countries consume closer to the recommended daily 2000-2400 calories.
- Food consumption is increasing for several reasons -
- Increased levels of development
 - Growing populations
 - Improved storage and transport

Indus Basin Irrigation System – A large-scale agricultural development

Largest **irrigation** scheme in the world. Involves 3 large and hundreds of small **dams**. Thousands of channels provides water to supports **Pakistan's** rich farmlands. In total, over 1.6 million km of ditches and streams provide irrigation for Pakistan's agricultural land.

Advantages

- Improves food security by adding 40% more land for farming.
- Increased yield & range of foods.
- 14 million ha of land is now irrigated.
- HEP is generated by the main dams.

Disadvantages

- Few take an unfair share of water
- Water is wasted and demand is rising due to population growth.
- High cost to maintain reservoirs.
- Some areas are waterlogged.

Sustainable Food Supply

This ensures that **fertile soil, water and environmental resources are available for future generations**.

Organic Farming - The banned use of chemicals and ensuring animals are raised naturally.

Permaculture – Follows the pattern of natural ecosystems. Includes harvesting rainwater and composting.

Urban Farming - Planting crops in urban areas. i.e. roundabouts.

Seasonal food consumption – only consuming what is in season. Reduces food miles.

Mukueni, Kenya

Makueni Country in Kenya aims to increase their food production sustainably.

Where? Eastern Kenya, small isolated communities, rainfall just 500mm pa.

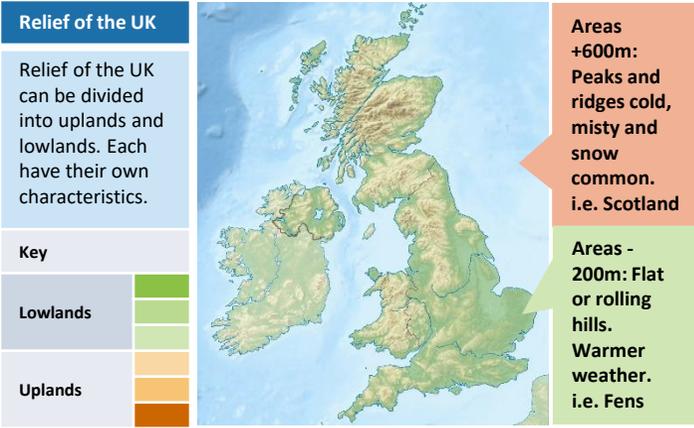
What food is grown? Maize, millet, beans sweet potatoes.

The Makueni Food and Water Security Programme. The programme provided help to two small villages and a primary school.

- Improving access to a clean and safe water supply by building a sand dam for each village.
- Rainwater harvesting tank on the school roof.
- Training programme.
- Growing trees – reduce soil erosion.

The project has been successful.

- Crop yields increased.
- Water-borne diseases reduced.
- School now has safe and clean water.
- Less time wasted collecting water.



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.
Hydraulic Action	Water enters cracks in the cliff, 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.

Mass Movement

A large movement of soil and rock debris that moves down slopes in response to the pull of gravity in a vertical direction.

1	Rain saturates the permeable rock above the impermeable rock making it heavy.
2	Waves or a river will erode the base of the slope making it unstable.
3	Eventually the weight of the permeable rock above the impermeable rock weakens and collapses.
4	The debris at the base of the cliff is then removed and transported by waves or river.

Types of Weathering

Weathering is the breakdown of rocks where they are.

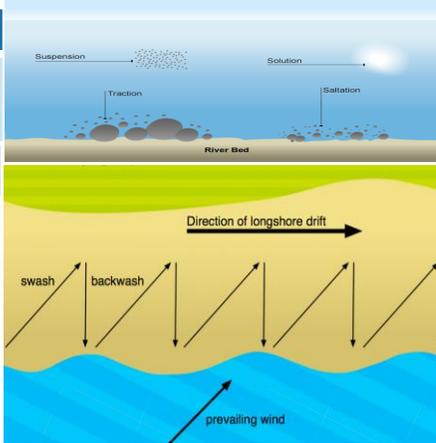
Chemical	Breakdown of rock by changing its chemical composition, e.g. acidic rainwater
Mechanical	Breakdown of rock without changing its chemical composition, e.g. freeze-thaw weathering
Biological weathering	This occurs due to the actions of plants and animals. E.g. plant roots break rocks, animals burrow into weak rocks.

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.

What is longshore drift?

The movement of material along the beach. When the waves approach at an angle, sediment will be moved along in a zig-zag pattern.



Physical Landscapes in the UK

Coastal landforms at Swanage

Where? Dorset, south coast of England. It has many erosional and depositional landforms. It is also known as the Jurassic Coast.

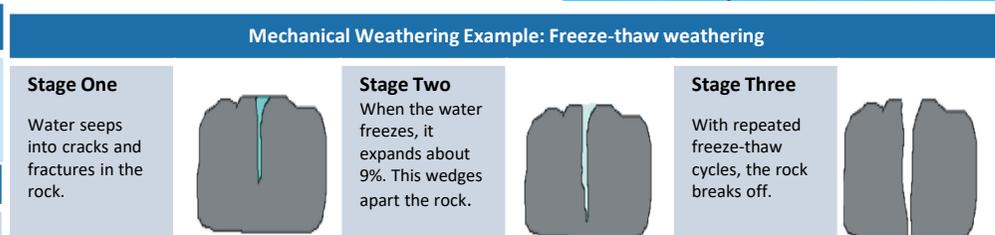
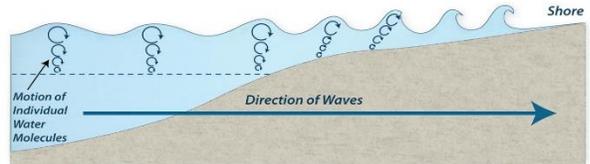


How do waves form?

Waves are created by wind blowing over the surface of the sea. As the wind blows over the sea, friction is created - producing a swell in the water.

Why do waves break?

1	Waves start out at sea.
2	As waves approaches the shore, friction slows the base.
3	This causes the orbit to become elliptical.
4	Until the top of the wave breaks over.



Size of waves	Types of Waves
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<ul style="list-style-type: none"> Fetch how far the wave has travelled Strength of the wind. How long the wind has been blowing for. 	<h3>Constructive Waves</h3> <p>This wave has a swash that is stronger than the backwash. This therefore builds up the coast. They form gentle beaches</p>	<h3>Destructive Waves</h3> <p>This wave has a backwash that is stronger than the swash. This therefore erodes the coast. They form more steep beaches</p>
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Landforms - This indented coastline is called a discordant coastline. The south coast has one rock type – limestone – this forms a concordant coastline. To the south of Swanage is Poole Harbour. A lot of deposition has taken place in this bay. There are two spits at the mouth of the harbour. At Studland there are lagoons, saltmarshes and sand dunes.

Coastal Defences - Hard Engineering Defences

Groynes	Wood barriers prevent longshore drift, so the beach can build up.	£150,000 each, at 200m intervals	<ul style="list-style-type: none"> ✓ Beach still accessible. ✗ No deposition further down coast = erodes faster.
Sea Walls	Concrete walls break up the energy of the wave. Has a lip to stop waves going over.	£5000-100000 per metre	<ul style="list-style-type: none"> ✓ Long life span ✓ Protects from flooding ✗ Curved shape encourages erosion of beach deposits.
Gabions or Rip Rap	Cages of rocks/boulders absorb the waves energy, protecting the cliff behind.	Up to £50,000 per 100m.	<ul style="list-style-type: none"> ✓ Cheap ✓ Local material can be used to look less strange. ✗ Will need replacing.

Coastal Defences - Soft Engineering Defences

Beach Nourishment	Beaches built up with sand, so waves have to travel further before eroding cliffs.	up to £5000,000 per 100m	<ul style="list-style-type: none"> ✓ Cheap ✓ Beach for tourists. ✗ Storms = need replacing. ✗ Offshore dredging damages seabed.
Dune regeneration	Grasses planted to stabilise dunes and help them develop. Fences used to keep people off sand dunes.	£200-1000 per 100m	<ul style="list-style-type: none"> ✓ Cheap ✓ Maintains a natural coastline, popular with people and wildlife. ✗ Time consuming to plant grasses and fence areas off. ✗ Can be damaged by storms.
Managed Retreat	Low value areas of the coast are left to flood & erode. Medmerry Managed retreat, West Sussex – the flat, low lying coast is mainly used for farming and caravan parks. It was protected by a sea wall, but this now need repairing. Due to the low value of the land, it was decided to allow the sea to breach the wall.		<ul style="list-style-type: none"> ✓ Reduce flood risk ✓ Creates wildlife habitats. ✓ Most sustainable option ✗ Compensation for land.

Case Study: Lyme Regis

Location and Background
Located on the south coast of England, on the Jurassic coast. It is a popular tourist destination.

What are the issues?
Much of the town has been built on unstable cliffs. The coastline is eroding rapidly. Many properties have been destroyed. The sea wall has been breached many times.

Management
Phase 1 – 1990-1995 – New sea wall and promenade, 2003-2004 a £1.4 million emergency project was completed to stabilise the cliffs. Hundred of large nails were used to hold the rocks together.
Phase 2 – 2005-2007 – improvements to the sea front, costing £22 million. New sea walls, creation of wide sand and shingle (from the English channel) beach to absorb wave energy, extension of rock armour at The Cobb.
Phase 3 – The plan was to help prevent landslips and erosion to the west of The Cobb. It was decided to leave this area alone as the costs outweighed the benefits.
Phase 4 – 2013-2015 – final phase focused on the coast east of the town. Cost £20 million. Construction of a 390m sea wall in front of the existing wall, nailing, piling and drainage to provide cliff stabilisation to protect 480 homes.

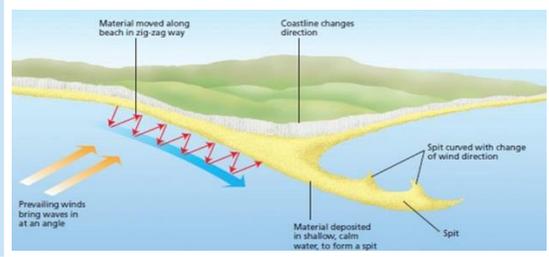
How successful?
Positives – increased visitors due to beaches, defences have stood up to stormy winters, boat owners and fishermen benefit from harbour being better protected.
Negatives – increased visitors lead to conflict with locals, natural landscape spoilt, sea defences interfere with other stretches of coastline.

Formation of Coastal Spits and Bars- Deposition

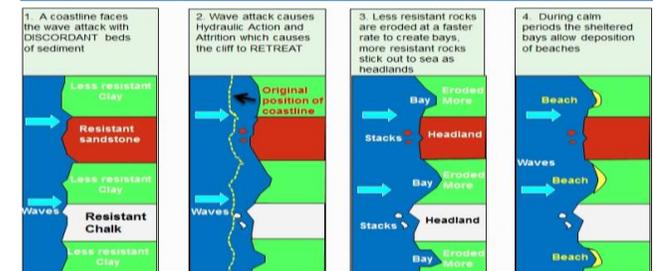
Example: Spurn Head, Holderness Coast.

- Swash moves up the beach at the angle of the prevailing wind.
- Backwash moves down the beach at 90° to coastline, due to gravity.
- Zigzag movement (Longshore Drift) transports material along beach.
- Deposition causes beach to extend, until reaching a river estuary.
- Change in prevailing wind direction forms a hook.
- Sheltered area behind spit encourages deposition, salt marsh forms.
- A bar forms when a spit grows right across a bay.

Physical Landscapes in the UK

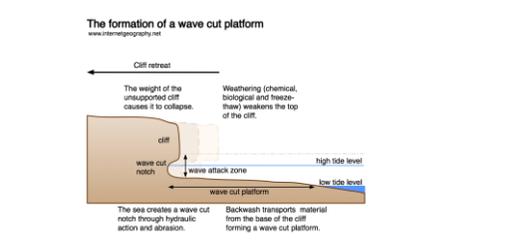


Formation of Bays and Headlands

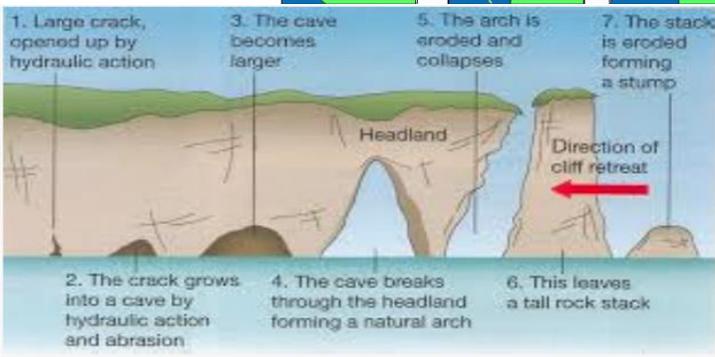


- Waves attack the coastline.
- Softer rock is eroded by the sea quicker forming a bay, calm area causes deposition.
- More resistant rock is left jutting out into the sea. This is a headland and is now more vulnerable to erosion.

Formation of cliffs and wave-cut platforms.



- When a wave breaks against a cliff, erosion will wear away at the bottom on a cliff, forming a wave-cut notch.
- Over a long period of time, the notch will get deeper and deeper, undercutting the cliff.
- Eventually, the cliff above collapses.
- Over time the cliff will retreat
- In its place will be a gentle sloping rocky platform called a wave-cut platform.



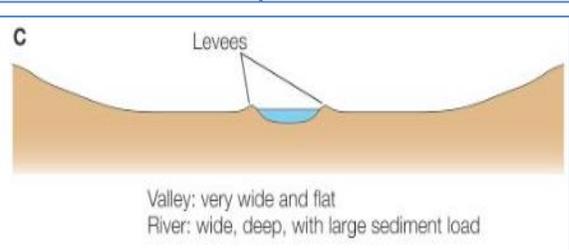
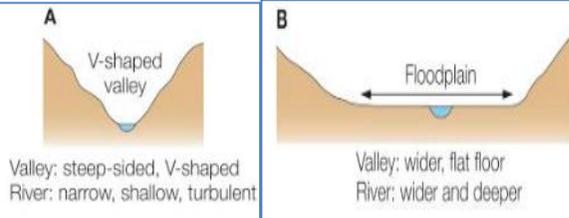
Formation of Coastal Stack

Example: Old Harry Rocks, Dorset

- Hydraulic action widens cracks in the cliff face over time.
- Abrasion forms a wave cut notch between HT and LT.
- Further abrasion widens the wave cut notch to form a cave.
- Caves from both sides of the headland break through to form an arch.
- Weather above/erosion below – arch collapses leaving stack.
- Further weathering and erosion leaves a stump.

Drainage basin Key Terms

Drainage basin	An area of land drained by a river and its tributaries.
Source	The start of the river
Tributary	A small stream that joins a larger river
Confluence	Where a tributary joins a larger river
Mouth	Where the river meets the sea
Watershed	The edge of a river basin.



Water Cycle Key Terms

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

Case Study: The River Tees

Location and Background
Located in the North of England and flows 137km from the Pennines to the North Sea at Red Car.

Geomorphic Processes and landforms
Upper – Features include V-Shaped valley, rapids and waterfalls. High Force waterfall drops 21m and is made from harder Whinstone and softer limestone rocks. Gradually a gorge has been formed.
Middle – Features include meanders and ox-bow lakes. The meander near Yarm encloses the town.
Lower – Greater lateral erosion creates features such as floodplains & levees. Mudflats at the river's estuary.

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.

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.

Features of the upper course - Interlocking spurs

The river cuts down into the valley. If there are areas of hard rock which are harder to erode, the river will bend around it. This creates **interlocking spurs** of land which link together like the teeth of a zip.



Features of the upper course - 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.

Middle Course of a River

Here the gradient get gentler, so the water has less energy and moves more slowly. The river will begin to erode laterally making the river wider.

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, so river takes the fastest route, redirecting flow	Step 4	Evaporation and deposition cuts off main channel leaving an oxbow lake.

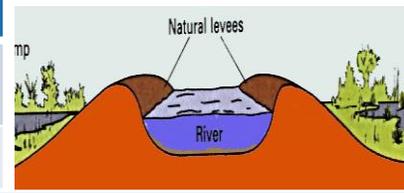
Lower Course of a River

Near the river's mouth, the river widens further and becomes flatter. Material transported is deposited.

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.



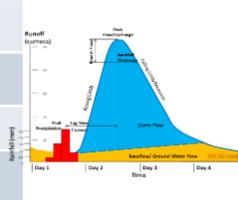
River Management Schemes

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

Hydrographs and River Discharge

River discharge is the volume of water that flows in a river. Hydrographs who discharge at a certain point in a river changes over time in relation to rainfall

1. **Peak discharge** is the discharge in a period of time.
2. **Lag time** is the delay between peak rainfall and peak discharge.
3. **Rising limb** is the increase in river discharge.
4. **Falling limb** is the decrease in river discharge to normal level.



Managing floods at Banbury.

Location and Background
Located in the Cotswold Hills, 50km north of Oxford. Much of the town is on a floodplain of the River Cherwell.

How has Banbury been affected by flooding?
 1988 – the towns railway station and local roads weere closed. Led to £12.5 million damage.150 homes and business affected.
 2007 – floods affected many more homes and businesses.

What has been done to reduce the risk of flooding?
 In 2012 the flood defence scheme was completed.

- A 2.9km embankment built next to M40 to create a flood storage area.
- A361 was raised – improvements to drainage.
- New pumping station
- Creation of a new Biodiversity Action Plan – with ponds, trees and hedgerows to absorb and store water.

Costs and benefits

- The raised A361 can now be open during times of flooding.
- Quality of life for people improved – reduced stress and anxiety for people
- 100 million tonnes of earth required to build the embankment. This created a small reservoir.
- 441 houses and 73 commercial properties protected. Benefits at over £100 million.
- Cost £18.5 million
- Part of the floodplain will be deliberated flooded if river levels are too high.

What is development?

Development is an improvement in living standards through better use of resources.

Economic	This is progress in economic growth through levels of industrialisation and use of technology.
Social	This is an improvement in people's standard of living. For example, clean water and electricity.
Environmental	This involves advances in the management and protection of the environment.

Measuring development

These are used to compare and understand a country's level of development.



Economic indicators examples

Employment type	The proportion of the population working in primary, secondary, tertiary and quaternary industries.
Gross Domestic Product per capita	This is the total value of goods and services produced in a country per person, per year.
Gross National Income per capita	An average of gross national income per person, per year in US dollars.

Social indicators examples



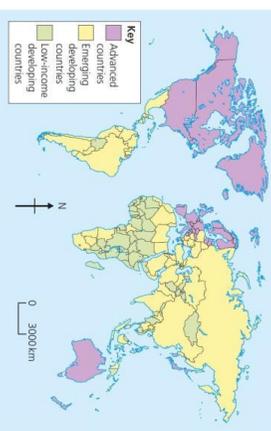
Infant mortality	The number of children who die before reaching 1 per 1000 babies born.
Literacy rate	The percentage of population over the age of 15 who can read and write.
Life expectancy	The average lifespan of someone born in that country.

Mixed indicators

Human Development Index (HDI)	A number that uses life expectancy, education level and income per person.
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Variations in the level of development

LICs	Poorest countries in the world. GNI per capita is low and most citizens have a low standard of living.
NEEs	These countries are getting richer as their economy is progressing from the primary industry to the secondary industry. Greater exports leads to better wages.
HICs	These countries are wealthy with a high GNI per capita and standards of living. These countries can spend money on services.



Causes of uneven development

Development is globally uneven with most HICs located in Europe, North America and Oceania. Most NEEs are in Asia and South America, whilst most LICs are in Africa. Remember, development can also vary within countries too.

Unit 2b



The Changing Economic World

Physical factors affecting uneven development

Natural Resources <ul style="list-style-type: none"> Fuel sources such as oil. Minerals and metals for fuel. Availability for timber. Access to safe water. 	Natural Hazards <ul style="list-style-type: none"> Risk of tectonic hazards. Benefits from volcanic material and floodwater. Frequent hazards undermines redevelopment.
Climate <ul style="list-style-type: none"> Reliability of rainfall to benefit farming. Extreme climates limit industry and affects health. Climate can attract tourists. 	Location/Terrain <ul style="list-style-type: none"> Landlocked countries may find trade difficulties. Mountainous terrain makes farming difficult. Scenery attracts tourists.

Human factors affecting uneven development

Aid <ul style="list-style-type: none"> Aid can help some countries develop key projects for infrastructure faster. Aid can improve services such as schools, hospitals and roads. Too much reliance on aid might stop other trade links becoming established. 	Trade <ul style="list-style-type: none"> Countries that export more than they import have a trade surplus. This can improve the national economy. Having good trade relationships. Trading goods and services is more profitable than raw materials.
Education <ul style="list-style-type: none"> Education creates a skilled workforce meaning more goods and services are produced. Educated people earn more money, meaning they also pay more taxes. This money can help develop the country in the future. 	Health <ul style="list-style-type: none"> Lack of clean water and poor healthcare means a large number of people suffer from diseases. People who are ill cannot work so there is little contribution to the economy. More money on healthcare means less spent on development.
Politics <ul style="list-style-type: none"> Corruption in local and national governments. The stability of the government can effect the country's ability to trade. Ability of the country to invest into services and infrastructure. 	History <ul style="list-style-type: none"> Colonialism has helped Europe develop, but slowed down development in many other countries. Countries that went through industrialisation a while ago, have now develop further.

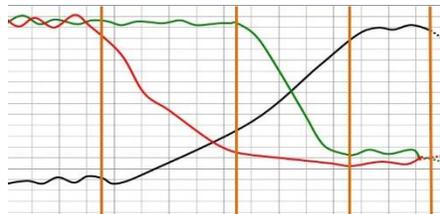
Consequences of Uneven Development

Levels of development are different in different countries. This uneven development has consequences for countries, especially in wealth, health and migration.

Wealth	People in more developed countries have higher incomes than less developed countries.
Health	Better healthcare means that people in more developed countries live longer than those in less developed countries.
Migration	If nearby countries have higher levels of development or are secure, people will move to seek better opportunities and standard of living.

The Demographic Transition Model

The demographic transition model (DTM) shows population change over time. It studies how birth rate and death rate affect the total population of a country.



STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5
High DR High BR Steady	BR Low Declining DR Very High	Rapidly falling DR Low BR High	Low DR Low BR Zero	Slowly Falling DR Low BR Negative
e.g. Tribes	e.g. Kenya	e.g. India	e.g. UK	e.g. Japan

Reducing the Global Development Gap

Microfinance Loans



This involves people in LICs receiving smalls loans from traditional banks.

- + Loans enable people to begin their own businesses
- Its not clear they can reduce poverty at a large scale.

Foreign-direct investment



This is when one country buys property or infrastructure in another country.

- + Leads to better access to finance, technology & expertise.
- Investment can come with strings attached that country's will need to comply with.



Debt Relief

This is when a country's debt is cancelled or interest rates are lowered.

- + Means more money can be spent on development.
- Locals might not always get a say. Some aid can be tied under condition from donor country.

Aid

This is given by one country to another as money or resources.

- + Improve literacy rates, building dams, improving agriculture.
- Can be wasted by corrupt governments or they can become too reliant on aid.



Fair trade



This is a movement where farmers get a fair price for the goods produced.

- + Paid fairly so they can develop schools & health centres.
- Only a tiny proportion of the extra money reaches producers.

Technology

Includes tools, machines and affordable equipment that improve quality of life.

- + Renewable energy is less expensive and polluting.
- Requires initial investment and skills in operating technology



CS: Reducing the Development Gap In Jamaica



Location and Background



Jamaica is a LIC island nation part of the Caribbean. Location makes Jamaica an attractive place for visitors to explore the tropical blue seas, skies and palm filled sandy beaches

Tourist economy



- In 2015, 2.12 million visited.
- Tourism contributes 27% of GDP and will increase to 38% by 2025.
- 130,000 jobs rely on tourism.
- Global recession 2008 caused a decline in tourism. Now tourism is beginning to recover.

Multiplier effect

- Jobs from tourism have meant more money has been spent in shops and other businesses.
- Government has invested in infrastructure to support tourism.
- New sewage treatment plants have reduced pollution.

Development Problems

- Tourists do not always spend much money outside their resorts.
- Infrastructure improvements have not spread to the whole island.
- Many people in Jamaica still live in poor quality housing and lack basic services such as healthcare.

Case Study: Economic Development in Nigeria



Location & Importance

Nigeria is a NEE in West Africa. Nigeria is just north of the Equator and experiences a range of environments. Nigeria is the most populous and economically powerful country in Africa. Economic growth has been base on oil exports.



Influences upon Nigeria's development

Political

Suffered instability with a civil war between 1967-1970. From 1999, the country became stable with free and fair elections. Stability has encouraged global investment from China and USA.

Social

Nigeria is a multi-cultural, multi-faith society. Although mostly a strength, diversity has caused regional conflicts from groups such as the Boko Haram terrorists.

Cultural

Nigeria's diversity has created rich and varied artistic culture. The country has a rich music, literacy and film industry (i.e. Nollywood). A successful national football side.

Industrial Structures

Once mainly based on agriculture, 50% of its economy is now manufacturing and services. A thriving manufacturing industry is increasing foreign investment and employment opportunities.



The role of TNCs

TNCs such as Shell have played an important role in its economy. + Investment has increased employment and income. - Profits move to HICs. - Many oil spills have damaged fragile environments.



Changing Relationships

Nigeria plays a leading role with the African Union and UN. Growing links with China with huge investment in infrastructure. Main import includes petrol from the EU, cars from Brazil and phones from China.

Environmental Impacts

The 2008/09 oil spills devastated swamps and its ecosystems. Industry has caused toxic chemicals to be discharged in open sewers - risking human health. 80% of forest have been cut down. This also increases CO² emissions.

Aid & Debt relief

+ Receives \$5billion per year in aid. + Aid groups (ActionAid) have improved health centres, provided anti-mosquito nets and helped to protect people against AIDS/HIV. - Some aid fails to reach the people who need it due to corruption.

Effects of Economic Development

Life expectancy has increased from 46 to 53 years. 64% have access to safe water. Typical schooling years has increased from 7 to 9.

Case Study: Economic Change in the UK



UK in the Wider World

The UK has one of the largest economies in the world. The UK has huge political, economic and cultural influences. The UK is highly regarded for its fairness and tolerance. The UK has global transport links i.e. Heathrow and the Eurostar.



Causes of Economic Change

De-industrialisation and the decline of the UK's industrial base. Globalisation has meant many industries have moved overseas, where labour costs are lower. Government investing in supporting vital businesses.

Towards Post-Industrial

The quaternary industry has increased, whilst secondary has decreased. Numbers in primary and tertiary industry has stayed the steady. Big increase in professional and technical jobs.

Developments of Science Parks

Science Parks are groups of scientific and technical knowledge based businesses on a single site.

- Access to transport routes.
- Highly educated workers.
- Staff benefit from attractive working conditions.
- Attracts clusters of related high-tech businesses.

CS: UK Car Industry



Every year the UK makes 1.5 million cars. These factories are owned by large TNCs. i.e. Nissan.

- 7% of energy used there factories is from wind energy.
- New cars are more energy efficient and lighter.
- Nissan produces electric and hybrid cars.

Change to a Rural Landscape

Social

Rising house prices have caused tensions in villages. Villages are unpopulated during the day causing loss of identity. Resentment towards poor migrant communities.

Economic

Lack of affordable housing for local first time buyers. Sales of farmland has increased rural unemployment. Influx of poor migrants puts pressures on local services.



Improvements to Transport



A £15 billion 'Road Improvement Strategy'. This will involve 10 new roads and 1,600 extra lanes. £50 billion HS2 railway to improve connections between key UK cities. £18 billion on Heathrow's controversial third runway. UK has many large ports for importing and exporting goods.

UK North/South Divide

- Wages are lower in the North.
- Health is better in the South.
- Education is worse in the North.
- + The government is aiming to support a Northern Powerhouse project to resolve regional differences.
- + More devolving of powers to disadvantaged regions.