

# T1

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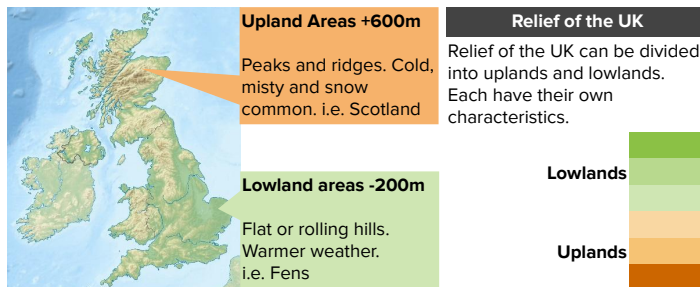
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# Landscapes and physical processes

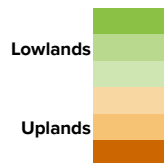


## Geography Knowledge Organiser

### 1.1.1 - Distinctive landscapes



**Relief of the UK**  
Relief of the UK can be divided into uplands and lowlands. Each have their own characteristics.



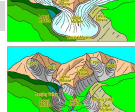
#### Glaciation in the UK

Over many thousands of years, glaciation has made an impression on the UK's landscape. Today, much of upland Britain is covered in u-shaped valleys and eroded steep mountain peaks.

**During the ice age**  
Ice covered areas eroded and weathered landscapes to create dramatic mountain scenery.



**After the ice age**  
Deep valleys and deposition of sediment revealed



#### What is a landscape?

A landscape has visible features that make up the surface of the land. Landscapes can be broken down into four 'elements'.

#### Landscape Elements

- | Physical                             | Biological                            |
|--------------------------------------|---------------------------------------|
| -Mountains<br>-Coastlines<br>-Rivers | -Vegetation<br>-Habitats<br>-Wildlife |
| Human                                | Variable                              |
| -Buildings<br>-Infrastructure        | -Weather<br>-Senses                   |

### 1.1.2/3 - Human activity

**Honeypot site** - A location which attracts a large number of tourists who, due to their numbers, place pressure on the environment and local people.  
**Carrying capacity** - The number of people which a region can support without damaging the location and environment.  
**Visitor pressure** - tourists who, due to their numbers, place stress on the environment and local people.

Positives of visitor pressure	Negatives of visitor pressure
-------------------------------	-------------------------------

Employment opportunities are created to meet the demands of the tourists	Jobs are often seasonal or part time. This makes it harder to support family.
Tourism brings in money and will boost the local economy	There is overcrowding in the peak seasons
There will be upkeep of the area, making it a clean place to live	Businesses are designed for the tourists
Crime can be reduced due to higher levels of employment	There can be congestion on the roads
	Scenic walks and hikes are damaged by footpath erosion

- (1.1.3) **Management: repairing footpaths**  
**Stone pitching** - This technique involves digging stone into the ground to form good solid footfalls. This ancient technique is used extensively in the central fells using stone which is naturally occurring.  
**Soil Inversion** - A digger is used to construct a ditch drain. The soil removed from the drain is placed alongside to create a hard wearing walking surface. Grass seed mix is then sown to encourage vegetation to bind all the works together.  
**Sheep wool** - The fleece is placed between the soil and the stones to prevent the stone from sinking into the soil. This creates a 'floating' path and also absorbs some water to slow surface runoff.

### 1.2.1 - Processes & landforms (Rivers)

#### Erosion

- Attrition** - Rocks that bash together to become smooth/smaller.
- Solution** - A chemical reaction that dissolved 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.

#### Transportation

- 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.

#### Deposition

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

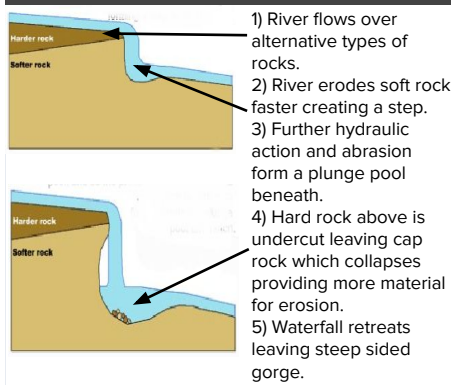
#### Freeze-thaw weathering

- Stage One**  
Water seeps into cracks and fractures in the rock.
- Stage Two**  
When the water freezes, it expands about 9%. This wedges apart the rock.
- Stage Three**  
With repeated freeze-thaw cycles, the rock breaks off.

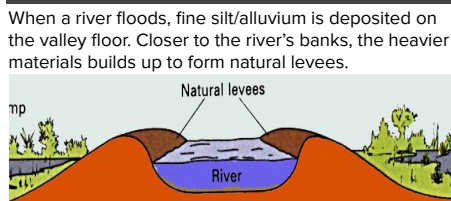
#### Weathering

- Chemical**  
Action of chemicals within water dissolving the rock.
- Biological**  
Rocks that have been broken down by living organisms or plant roots.

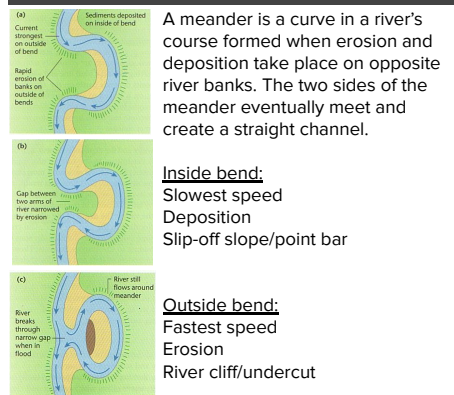
#### Formation of a waterfall



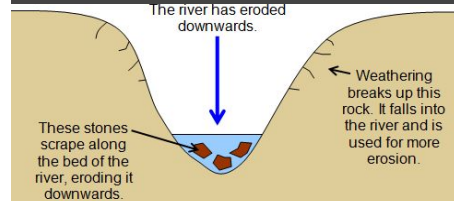
#### Formation of floodplains and levees



#### Formation of a meander

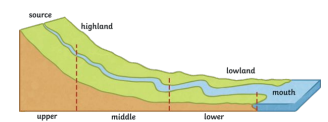


#### Formation of a V-shaped valley



#### River long profile

- Upper course**  
Near the source, the river is 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.
- Middle course**  
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.
- Lower course**  
Near the river's mouth, the river widens further and becomes flatter. Material transported is deposited.



# 1.2.1 - Processes & landforms (Coasts)

### Formation of bays and headlands

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

### Formation of coastal landforms

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

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### Types of coastline

**Concordant**  
A concordant coastline occurs where the bands of differing rock types run parallel to the coast. The outer hard provides a protective barrier to erosion of the softer rocks further inland. Sometimes the outer hard rock is punctured allowing the sea to erode the softer rocks behind. This creates a cove which is a circular area of water with a relatively narrow entrance way from the sea.

**Discordant**  
Discordant coastline occurs where bands of differing rock type run at right angles to the coast. The different resistance to erosion leads to the formation of headlands and bays.

Concordant coast with only 1 rock type

Discordant coast with many rock types

### Formation of coastal spits (longshore drift)

- 1) Swash moves up the beach at the angle of the prevailing wind.
- 2) Backwash moves down the beach at 90° to coastline, due to gravity.
- 3) Zigzag movement (Longshore Drift) transports material along beach.
- 4) Deposition causes beach to extend, until reaching a river estuary.
- 5) Change in prevailing wind direction forms a hook.
- 6) Sheltered area behind spit encourages deposition, salt marsh forms.

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### Mass movement

Mass Movement is the downhill movement of cliff material

**Rockfall** As the weathering processes weaken the structure of the cliff rock fragments fall away.

**Landslide** Large blocks of the cliff slide down to the base of the cliff due to erosion weakening the base of the cliff

**Slumping** When soft rocks like clay become too wet from rainfall and weakened by erosion, the entire cliff face slips down in a curve, making steps in the cliff

### Wave-cut landforms

1. The sea attacks the base of the cliff between the high and low water mark.
2. A wave-cut notch is formed by erosional processes such as abrasion and hydraulic action - this is a dent in the cliff usually at the level of high tide.
3. As the notch increases in size, the cliff becomes unstable and collapses, leading to the retreat of the cliff face.
4. The backwash carries away the eroded material, leaving a wave-cut platform.
5. The process repeats. The cliff continues to retreat.

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# 1.2.2 - Rates of change

**Climate**  
The rainfall map of the UK shows variations in rain. Less precipitation occurs in low land areas. East England Most precipitation occurs in upland areas. Scotland.

**These differences mean...**  
Uplands experience more weathering, erosion and mass movement.

**Geology**  
Some rock types erode faster than others (sedimentary limestone or clays erodes quicker than metamorphic granite). The direction rocks are layered in can also affect this eg. concordant or discordant coastlines

**Human activity**  
Humans can increase rates of change such as footpath erosion on cliffs or building on floodplains but humans can also put management in place is slow erosion or transport processes, like dams, groyne, river dredging & afforestation.

# 1.3.1 - Drainage basins

### Hydrological cycle

**Surface runoff**- water runs across the ground to a river  
**Infiltration**- water seeps into the soil in the ground  
**Percolation**- water seeps into rock deeper in the ground  
**Groundwater flow**- water flows through the soil and rock in the ground

### Drainage basin

- Condensation**- when water vapour cools to form clouds  
**Evaporation**- where water is turned into water vapour (gas)  
**Precipitation**- any water that falls from the sky (rain, snow etc)  
**Interception**- vegetation traps water before it reaches the ground  
**Transpiration**- water is evaporated from the leaves of vegetation

- Drainage Basin**- is the area of land drained by a river and its tributaries  
**Watershed**- the area of high land forming the edge of a river basin  
**Source**- where a river begins  
**Mouth**- where a river meets the sea  
**Tributary**- a small river or stream that joins a larger river  
**Confluence**- the point at which two rivers meet  
**Main river channel**- main river flow in the drainage basin  
**Floodplain**- flat land on the sides of the river that takes the overflow water

# 1.3.2 - River flooding

**Factors influencing how rivers flood:**

- Steep Slopes** - If the land surrounding a river is steep, rainfall will run quickly across the ground as surface runoff, increasing the river's discharge
- Urbanisation** - Roads and pavements are built using a tarmac, an impermeable material. Rainfall flows quickly over tarmaced surfaces as it cannot infiltrate into the ground, leading to rapidly increasing discharge
- Geology** - If a drainage basin has impermeable rock, water is unable to percolate into the rock. As a result, the rainfall flows into the river via throughflow and surface run off
- Heavy or prolonged rainfall** - A high volume of rainfall will cause a river's discharge to increase rapidly, increasing the chances of the river bursting its banks
- Vegetation** - Trees intercept rainfall as it falls from the sky. If there is a lack of vegetation, more rainfall reaches the ground and eventually the river, seeing a large increase in discharge

# 1.3.3 - Flood management

**Hard Engineering** - Hard engineering management involves using artificial structures, such as dams and embankments which try to control rivers. They tend to be expensive.

**Soft Engineering** - Soft engineering management is a more natural approach to manage flooding, it does not involve building artificial structures, but takes a more sustainable approach to managing the potential for river flooding.



## River defences

### Hard Engineering

**Channel straightening** Removing meanders, increases velocity to remove flood water.

**Artificial Levees** Man-made banks heighten river so flood water is contained.

**Channel widening** Makes river wider to increase capacity for a flood.

### Soft Engineering

**Afforestation** Planted trees soak up rainwater, reduces flood risk.

**Managed Flooding** Naturally let some areas flood to protect settlements.

# Home study questions



## DEVELOPING

**Describe** how tourists can have benefits and negatives to honeypot sites [3 marks]

**Explain** why a waterfall migrates backwards the source [4 marks]

## SECURING

**Analyse** the pattern of average precipitation (rainfall) in the UK (1 . 2 . 2) [6 marks]

**Explain** the difference between discordant and concordant coastlines [4 marks]

## MASTERING

'Urbanisation is the most significant factor in flooding' **To what extent** do you agree with this statement? [8 marks]

**Sketch and annotate** the formation of a spit [6 marks]

## CHALLENGE

**Create** a spider diagram to show how all the erosional processes and landforms of rivers and coasts are linked

**Draw** out a river long profile and **label** where the different landforms and processes would usually occur



# T2

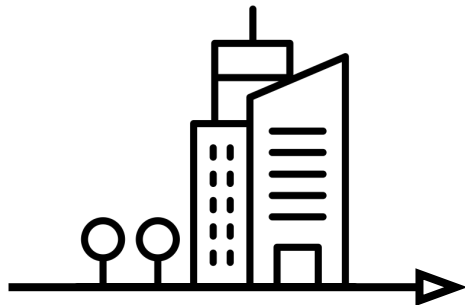
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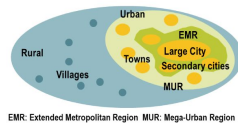
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## Rural-urban links



Geography Knowledge Organiser

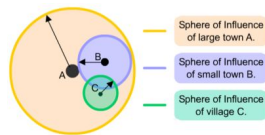
### 2.1.1 - Rural-urban continuum



A **rural-urban continuum** is the gradual change from a very built up urban area (like a large city) through to rolling countryside and sparsely populated villages. There is no clear line between urban and rural, as represented by the diagram

#### Service provision

As we move along the continuum from the most rural to the most urban locations, the number of services provided by each settlement increases. For example, in a small village there is likely to be a post office and a. However, in a large city there are a large number of shops, supermarkets, banks, hospitals and entertainment providers.



A **sphere of influence** is the area around the settlement from which people are attracted to visit or work due to the services the settlement provided. Large cities have more services so have a larger sphere of influence in the area

#### Counter-urbanisation

The movement of people from urban to rural areas to live.

#### Reasons for counter-urbanisation:

- Housing** - cheaper & bigger
- Transport** - improved roads and increased car ownership
- Employment** - more workplaces now located on urban-rural fringe
- Environmental factors** - less noise and air pollution

#### Impact of counter-urbanisation:

- Higher house prices** - increased demand
- Decrease in traditional services** - (village shops) residents now shop in urban areas
- Increase need for local schools**
- Traffic congestion**
- Commuting - People often choose to live in cheaper rural areas and commute to work rather than paying higher urban prices, or just work from home*

### 2.1.2 - Changing rural areas

#### Rural change

- Counter-urbanisation, sphere of influences and technological change has led to:
- Reduction or change in employment opportunities in rural area
  - Closure of rural services like banks and post offices
  - Increase in house prices rural areas, especially in accessible "commuter belt"
  - Increased "second" home ownership
  - Some locals can no longer afford local houses
  - Reduction in bus services

Some of the more remote rural areas have experienced lots of negative changes. These include **depopulation** and **deprivation**. Deprivation is often characterised by a lack of public transport, healthcare and education.

#### Spiral of deprivation



#### Sustainable rural community

- Things that need to be considered when creating a sustainable community;
- Availability of jobs** – encourage jobs based in rural areas by encouraging more companies to locate there
  - Education** – ensuring local schools remain open
  - Healthcare** – ensure all locals can access healthcare (transport links to cities)
  - Village services** – encouraging shops, pubs and post offices to remain open
  - Transport** – ensuring public transport runs regularly and can be accessed by all
  - Internet** – ensure fast and reliable broadband

### 2.2.1 - Changing population

#### UK population change factors

- |   |   |  |
|---|---|--|
| <b>Social</b><br><b>Healthcare</b> - free and accessible for all, so people are living longer<br><b>Marriage/culture</b> - People are marrying later and having a family later, reducing the number of children they can have | <b>Economic</b><br><b>Careers</b> - many women now chose to have a career, than start a family<br><b>Maternity pay</b> - Getting paid while looking after a newborn child encourages more people to have children | <b>Political</b><br><b>Contraception</b> - is widely available<br><b>Mat-/Pat-ernity rights</b> - Mothers and Fathers now have the rights to paid leave to care for a newborn, so encouraging more people to have children |
|---|---|--|

#### UK migration

- |   |   |
|---|---|
| <b>Migration to the UK</b><br>Stable government<br>More available jobs<br>Good healthcare system<br>Already have family in the UK<br>Good education system<br>Better rates of pay | <b>Migration within the UK</b><br>Cost of housing cheaper somewhere else<br>Change in lifestyle - retiring to a rural area<br>Searching for work - more jobs in a cities<br>Moving to reduce the commuting time - live closer to work<br>Moving closer to family for care needs |
|---|---|

#### UK's ageing population

- |  |   |  |
|--|---|--|
| <b>Causes</b><br>Low birth rate and low death rate means we have more people living for longer (high life expectancy). The UK now have more people aged 60+ than ever before | <b>Social/Health effects</b><br>- OAPs have more health issues, straining NHS<br>- Increased demand for care homes and carer services<br>- More people living longer increases demand for homes | <b>Economic effects</b><br>- Not enough working aged population to pay taxes<br>- Healthcare, free public transport etc costs the state more money<br>- Pension costs for government increases |
|--|---|--|

### 2.2.2 - UK towns and cities



#### Egan's wheel

Egan's wheel outlines the criteria that needs to be met for a community to be sustainable. There is a social, economic and environmental focus. All of these categories must be met in order to have a sustainable community in urban and rural places.

#### Greenfield development

Greenfield sites are those that have not been built on before.



They are easier and cheaper to build on as there's nothing to knock down and there's more land available.

But this isn't sustainable as it is destroying the natural environment and animal habitats.

#### Brownfield development

Brownfield sites are those that have been built on before and is often derelict.



Planning permission is often easy to obtain and there are already existing services.

This is a more sustainable method of development however space is often limited and it can be expensive.

### 2.2.3 - Changing retail

#### Retail change in the UK

- |  |  |   |
|--|--|---|
| <b>Economic factors</b><br>More home delivery firms making deliveries cheaper, congestion in cities, free parking in out of town centres, high city centre parking costs | <b>Cultural factors</b><br>Car dependant society, habit of bulk buying weekly or monthly shops | <b>Technological factors</b><br>Development of high speed broadband, improved websites that can be used to compare prices, internet banking |
|--|--|---|

#### Out of town centres

- |  |   |
|--|---|
| <b>Benefits</b><br>Large free parking areas<br>Less congestion at out of town location<br>Quick and easy access (near motorway network)<br>Often room for expansion<br>Near suburban housing | <b>Costs</b><br>Can cause decline in city centre<br>Can increase congestion out of town<br>Often has the same chain stores at out of town centres – so does not support smaller independent shops.<br>Land use conflicts in out of town areas – areas in high demand from business parks and golf courses |
|--|---|

#### Internet shopping

- |  |  |
|--|--|
| <b>Benefits</b><br>Convenient and often cheaper<br>Can buy products not available locally<br>Can buy at any time or any location<br>Less time consuming<br>Traffic congestion is reduced<br>Jobs created for those delivering products | <b>Costs</b><br>Not everyone, (the elderly) have internet<br>Goods might be difficult to return<br>City centre shops might close, leads to jobs losses and decline<br>More delivery vans = more congestion<br>Using bank details can lead to fraud |
|--|--|

## 2.3.1 - Global urbanisation

Distribution of global cities



As a result of globalisation, places around the world are now more connected than ever before. **Global cities** have become key globally connected places.

Although global cities are distributed widely across the world it is not an even distribution. For example;  
 North America, Western Europe and South Asia have clusters of global cities  
 Africa has very few  
 India has 8  
 China has 14

### Changes over time

The rate of urbanisation varies across the world. In many HICs the period of rapid urbanisation occurred back in the 1800s, whereas many LICs are experiencing it at the moment.

## 2.3.2 - Urbanisation in global cities

### London (HIC global city)

#### Reasons for growth

**Natural population change** – from the migrants and young workers who were attracted to the city for work  
**Migration** – the UK attracted many from ex-colonies as well as people from other EU countries  
**Connections** – London is the financial capital of UK and for most of the global finances too. It has the stock exchange. It is also home to large MNCs. London is also a major trading and transport hub.

#### Way of Life

The UK has huge numbers of cultures and races, as well as white British people there are huge numbers of migrants from India, Pakistan, Bangladesh, Canada, USA, Kenya, Zimbabwe and other ex-British colonies  
 London houses a major world financial centre and a range of business specialisms which attract a highly skilled workforce.  
 However London's unemployment rate was one of the highest in the UK



### Challenges

#### Poverty

Often people who live in inner-city areas experience a poor quality of life. This is because the inner-city is typically a zone with older housing and declining industry. There is a lack of housing provision; access to services; access to open land; safety and security.

#### Traffic Issues

London has massive problems with congestion. From the 1950s, car ownership has grown at a very quick rate. The increasing population of the city has meant roads are crowded and transport services such as the underground and buses struggle to cope

#### Urban decline

Some areas of a London suffers from out-migration of people and businesses, derelict buildings, high unemployment. This was common in the inner cities of the UK in the 1980s, leading to further poverty in these areas.

### Mumbai (NIC global city)

#### Reasons for growth

**Natural population change** – in 1974 the fertility rate was 4, although this has now reduced to 1.8. Natural change was therefore a big factor in the 1970's and 1980s but less so now.  
**Migration** – the pull factors for Mumbai are cheap rail travel, jobs and better education. The push factors from the surrounding countryside are poor standards of housing, healthcare and sanitation.  
**Connections** – Mumbai is the financial capital of India and home to the stock exchange. It is also home to large MNCs.

#### Way of Life

Mumbai is a city of contrasts. One obvious one is the difference between rich and poor. Many well education people live in expensive properties while the majority of the city live in slums and work in the informal economy (in roles such as street vendors and rubbish collectors)  
 In the slums there is a lack of sanitation, adequate housing and open sewers are just some of the issues that face people living in these areas. Disease often spreads quickly due to the conditions and lack of health care facilities.



#### Informal sector

**Wages are low** = families unable to save and cannot afford to send children to school = children fail to get an education and forced to work in informal sector  
**Informal workers don't pay tax** = government does not raise income and cannot afford to invest in schools or hospitals = **children fail to gain a good education** and forced to work in the informal sector.

#### Challenges

**Reducing poverty and deprivation** – with such a large proportion of people living in slums. Education opportunities for these people are being increased, in addition to improved healthcare and sanitation.  
**Housing** – the majority of people live in slums, are pavement dwellers or live in crawls (four or five story tenement buildings with shared facilities). These areas suffer from overcrowding and the risk of fire, flooding or collapse.

## 1.3.3 - Connected global cities

**Global Cities are connected to each other and other places around the world by:**



**Finance and Trade** - global cities are the world's financial centres as banks locate their head offices in these cities and decisions regarding world trade are made here. This makes them very important places for the economy.



**Migration and Culture** - global cities attract economic migrants from all over the world. This pattern of migration results in cultural diversity which means that new languages, traditions, foods, celebrations and religions are brought to the country. For example in London over 250 languages are spoken.



**Governance and Decision-Making** - global cities are home to some of the most influential businesses and companies in the world where decisions made can influence the rest of the globe. For example the UN has headquarters in New York and yet employs 41,000 people worldwide.



**Ideas and Information** - global cities are home to many of the world's largest television and film industries, broadcasting all across the globe.



**Transport Hubs** - global cities are home to some of the world's largest airports which allow for the movement of people, goods and tourists across the globe. For example about 158 flights arrive at Dubai International Airport.

## Home study questions

### DEVELOPING

**Define** what an rural-urban continuum is [2 marks]

**Explain** how the spiral of deprivation leads to depopulation [4 marks]

### SECURING

**Analyse** the distribution in global cities around the world (2.3.1) [6 marks]

**Explain** why building on brownfield sites is more sustainable than on greenfield sites [4 marks]

### MASTERING

'The challenges associated with an NIC global city are more difficult to solve than those of HIC global cities' **To what extent** do you agree with this statement? [8 marks]

**Decide** why Europe and North America has the most significant concentration of global cities [6 marks]

### CHALLENGE

**Link** greenfield and brownfield developments to as many different elements of this module as possible

**Create** a spider diagram to show how Newcastle is linked to the rest of the world (a connected global city)



# T3

## Tectonic hazards



### Geography Knowledge Organiser

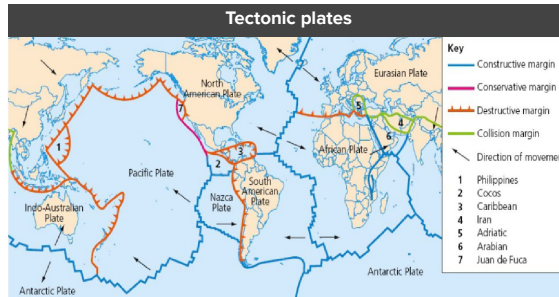
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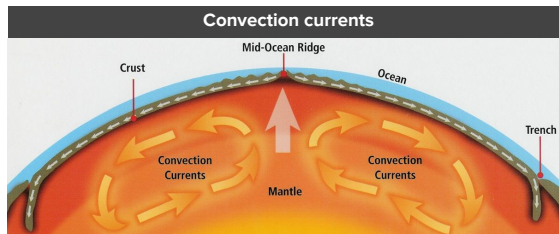
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### 3.1.1 - Tectonic processes and landforms



The earth is made up of a series of layers. The outer layer is called the crust. This is made of 2 different types:

- Continental Crust** (which is on average 35km thick)
- Oceanic Crust** (which is much thinner, between 6-8km)



Heat from the core causes **convection currents** in the mantle and these currents slowly move the plates

**Tectonic boundaries**

**Constructive**

Mid-oceanic ridge, Oceanic crust

**Destructive**

Deep ocean trench, Fold mountain, Oceanic crust, Continental crust

**Conservative**

Friction builds up as plates force past each other.

**Hot spot**

Island chain, Pacific Plate, Magma plume, Oceanic crust

1. Intense radioactivity in the Earth's interior creates a large column of magma (known as a magma plume)
2. The plume rises, melting and pushing through the crust above
3. The plume lies in a fixed position under the plate – as the plate move over it, a series of new volcanoes are created along the plate

### 3.1.1 - Tectonic processes and landforms

**Volcanic landforms**



**Shield volcano characteristic**

- Low profile
- Wide base
- Thin runny lava
- Made up of layers of lava
- Frequent and gentle eruptions



**Stratovolcano characteristic**

- High profile
- Narrow base
- Thick, slow lava
- Made up of layers of mainly ash
- Infrequent and violent eruptions

Feature	How it is formed	Found at
Ocean trench	Where subduction takes place	Destructive
Fold mountain	Continental crust is crushed and folded upwards	Destructive
Ocean ridge	As lava cools a ridge is formed under the sea	Constructive
Rift valley	Where 2 continental plates pull apart	Constructive
Caldera	A large depression or crater formed by large stratovolcanoes or supervolcanoes	Destructive & hotspot
Cinder cone	Bowl shaped crater of a shield volcano	Constructive
Lava tube	Under the ground, basic lava develops a hard crust through which lava flows	Constructive
Geysers	Water in the ground heated by the magma explodes onto the surface	Destructive & hotspot

### 3.2.1 - Tectonic impacts

**Volcano effects**

**MONTSERAT 1995-7**

- Health**
  - Ash clouds caused breathing problems
  - 19 deaths
  - 100s injured
- Infrastructure**
  - The capital, Plymouth, has been covered in layers of ash and mud
  - Lahars have destroyed large areas urban areas
  - The only airport was destroyed
- Economy**
  - Farmland abandoned (significant unemployment)
  - Prevented tourism so tourism economy suffered
  - Capital city is abandoned and rebuilt in the north

**Earthquake effects**

**HAITI 2010**

- Health**
  - 250,000 people died.
  - 300,000 people were injured.
  - Cholera spread through temporary camps
- Infrastructure**
  - Airport and port damaged
  - 30,000 buildings collapsed
  - Hospitals and medical centres were destroyed
- Economy**
  - Damage to the main clothing industry
  - Tourist industry will take years to recover
  - Infrastructure damaged reduced trade, imports and exports

**Tsunami effects**

**SOUTHEAST ASIA 2004**

- Health**
  - Over 220 000 deaths
  - 650 000 injured
  - 5-6 million needing emergency aid
- Infrastructure**
  - 1,000s of railway lines, roads, bridges and airports were destroyed
  - Hospitals within 30mi of the coastline were destroyed
  - Water supplies contaminated
- Economy**
  - Fishing industry devastated
  - Tourism, dropped 80%
  - Reconstruction cost billions of pounds

**Vulnerability to tectonic hazards**

- Physical factors**
- Duration** - the longer a hazard lasts the more severe the impact
- Predictability** - hazards that hit with no warning have a larger impact
- Volcanoes**
- Lava flows** - Molten rock flows down the side of a volcano (Local)
- Lahars** - Volcanic mudflows consisting of a mixture of ash and water (Local)
- Pyroclastic flow** - Burning clouds of gas and ash (Local)
- Ash clouds** - Ash thrown into the atmosphere (Regional/National/Global)
- Earthquakes**
- Magnitude** - the stronger the hazard the more severe the impacts

- Human factors**
- Wealth** - poor people are less able to withstand disasters and recover from it
- Education** - where populations are able to read and write, written messages can be used to spread warning or give advice about how to cope
- Governments** - can support education and can pass building regulations
- Age** - children and the elderly are more vulnerable
- Health** - healthy people are more able to cope
- Population density** - the more people living in the area the more that will be affected
- Time of the day** - e.g. earthquakes in rush hours have a more devastating effect
- Emergency services** - richer countries have well trained and well resourced response

## 3.2.2 - Tectonic management



**Earthquakes are difficult to predict but there are some monitoring techniques:**

- Laser beams can detect plate movement
- A seismometer is used to pick up vibrations in the earth's crust. These can lead up to an earthquake



**Monitoring Techniques used to predict volcanic eruptions include:**

- Remote sensing. Satellites monitor gas emissions and thermal imaging can work out the temperature within the volcano.
- Seismometers can pick up movements in the earth which sometimes occur before an eruption.



**Tsunami warning system:**

- Following the 1960 Chilean earthquake the Pacific countries decided to set up the Pacific Tsunami Warning System (PTWS).
- This is a network of seismometers and ocean buoys that detect earthquakes and ocean movements.
- Warnings are then given to local centres, which warn local people using the TV, radio, text messages and sirens.

### Hazard planning strategies

**Hazard Mapping** highlights areas affected by or vulnerable to earthquakes, volcanoes and tsunamis so planning and money can be targeted at these areas

**New building technology** can also reduce the impact of earthquakes. Often they are built to absorb the energy and withstand the earth's movement

**Emergency planning:**

- An exclusion zone can be set up around a volcano
- Lava flows can be diverted

Emergency services can be trained and given the equipment needed

People put together emergency kits which include first aid items, blankets etc.



## Home study questions



### DEVELOPING

**Describe** how a hot spot creates island arcs [2 marks]

**Compare** the differences between shield volcanoes and stratovolcanoes [4 marks]

### SECURING

**Analyse** the distribution of the 3 different plate boundaries around the world (3 . 1 . 1) [6 marks]

**Explain** how tsunamis impact the health and infrastructure of a country [6 marks]

### MASTERING

'Human vulnerabilities are responsible for more deaths than the physical risks associated with tectonic hazards' **To what extent** do you agree with this statement? [8 marks]

**Explain** how tectonic hazards are managed [4 marks]

### CHALLENGE

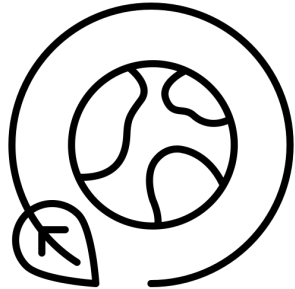
**Research** the responses to the 3 hazard case studies (Montserrat, Haiti and SE Asia) and add these to the space below

**Explain** how tsunamis are a secondary effect of earthquakes



# T5

## Weather, climate and ecosystems



### Geography Knowledge Organiser

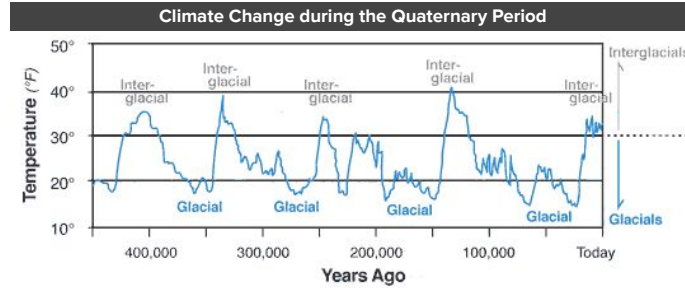
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### 5.1.1 - Climate change evidence



Over a long period of time (the last 400,000 years) there have been natural cycles of cooling and warming. The periods of time the average global temperature was below 15°C are known as **glacials**, and periods of warmth are known as **interglacials**.

Evidence for climate change	
	Ice cores from the Antarctic show the amount of CO <sub>2</sub> and methane in the atmosphere have changed over the last 420,000 years
	Historical records, such as diary extracts
	CO <sub>2</sub> levels in the atmosphere
	Measurements by the met office show temperature has increased by 0.6°C over the past 100 years.

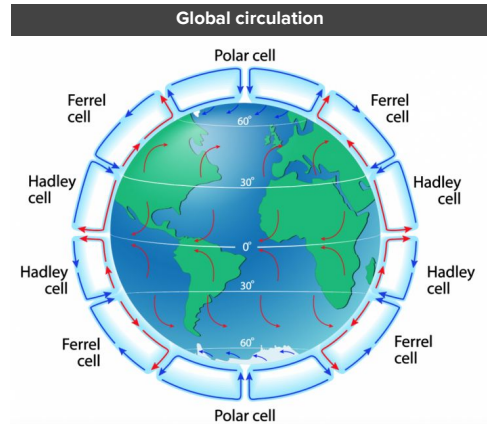
### 5.1.2 - Climate change causes

**Carbon cycle**

**Greenhouse effect**

The greenhouse effect is natural but humans have worsened the impacts. Carbon Dioxide and Methane are greenhouse gases which trap heat in the atmosphere. As more gases build up more heat is stored, warming the planet.

### 5.2.1 - Weather hazards



1. At the equator insolation heats the Earth which heats the air above
2. Hot air rises creating low pressure – as it rises it travels north and south
3. This air eventually cools and sinks at about 30° north/south of the equator – this creates high pressure
4. This air then returns to the equator (known as the intertropical convergence zone ITCZ)

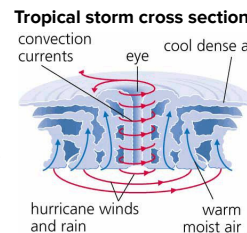
**Low pressure & tropical storms**

Warm air rises because it is less dense. When it reaches the edge of the atmosphere it cannot rise any further and moves north and south. The edge of the atmosphere is cold and so the air cools too. Low pressure can create a hazard called a tropical storm, which is also known as a hurricane, cyclone or typhoon

**Tropical storm causes (CYCLONE PAM 2015)**  
 Occurred near the island chain of Vanuatu in the South Pacific  
 Tropical storms can only form over large/deep oceans  
 Ocean temperatures of at least 27°C  
 Water depth of at least 50 meters  
 Gentle winds in the atmosphere to draw air up from water surface

**Tropical storm effects (CYCLONE PAM 2015)**  
 11 people died  
 90000 homeless  
 Hospitals and schools destroyed  
 Widespread destruction of fruits, vegetables, root crops and livestock  
 Stormsurge flooded coastal areas and contaminated freshwater supplies

**Tropical storm responses (CYCLONE PAM 2015)**  
 Emergency aid sent by Australia, Fiji, New Zealand and UK  
 153 temporary school built  
 Repairs to infrastructure to provide safe drinking water  
 Blankets & tents given to those made homeless  
 28 schools used as evacuation centres



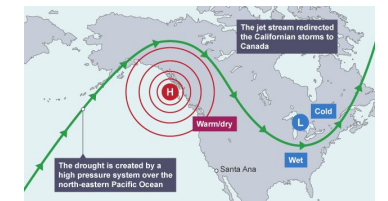
**High pressure & droughts**

As the air cools in the outer atmosphere it becomes heavier and starts to sink. This air moves back to the ground. This is called high pressure. As the air reaches the surface it starts to warm again and the cycle continues. High pressure can produce a hazard called a drought - a long period of no available water due to intense heat.

**Drought causes (CALIFORNIA 2012)**  
 The jet stream was further north than normal, pushing low pressure systems north and allowing high pressure systems to sit over the state creating a heat wave.

**Drought effects (CALIFORNIA 2012)**  
 A hosepipe ban was introduced  
 Homes were destroyed by wildfires  
 Hydroelectric power dams stopped producing electricity  
 Crops could not be grown and 17,000 agriculture jobs were lost  
 Fish died as high temps caused an oxygen decrease

**Drought responses (California 2012)**  
 12,500 water metres installed in homes  
 400,000 water saving toilets installed  
 3.2 million square feet of turf removed.  
 50% of Orange County's water supply is now imported from other areas.



## 5.2.2 - UK weather variations

**Weather** - the conditions of the atmosphere over a short period of time, often a day  
**Climate** - the weather of a place averaged over a period of time, often 30 years

### Factors affecting Climate in the UK



**Latitude** –the north of the UK has cooler temperatures than the south  
**Altitude** – mountain areas have cooler temperatures. Temperatures decrease by 1°C for every 200m of elevation.



**Ocean currents** – the North Atlantic drift brings warmer water to the UK, keeping the climate milder in winter and cooler in summer.



Different winds directions also bring different **air masses**:

- Pm** North westerly brings polar maritime air (cool and showery)
- Tm** South westerly brings tropical maritime (mild and wet)
- Pc** Easterly brings polar continental (cold and dry)
- Tc** South easterly brings tropical continental (warm and dry)
- Am** Northerly brings arctic air (cold and snow in winter)



### Low Pressure (depressions)

Begin in the Atlantic and move east

Brings rain, cloud and wind

Air rises, cools and condenses forming clouds

### High Pressure (anticyclone)

Low wind speed, stable conditions with no clouds

In summer they bring hot weather, which may lead to drought

In winter they bring cold (frosty) nights

### Microclimate

**Physical features** - hills, trees can block the wind and sun. Water cools the air

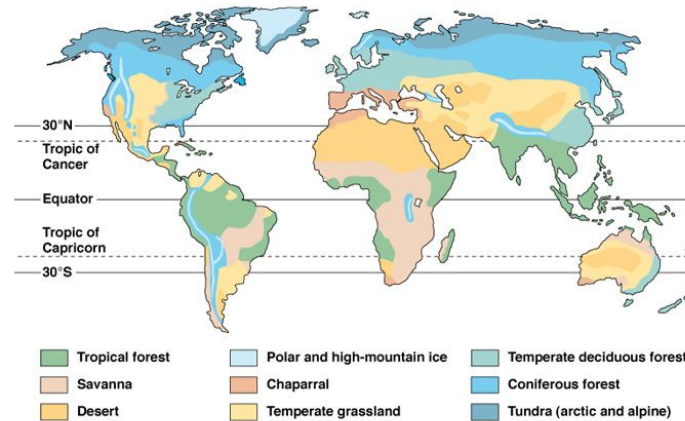
**Shelter** - Buildings, trees and hills can shelter from the wind

**Surface (albedo)** - dark surfaces heat up quicker than light surfaces

**Buildings** - Buildings store up heat and redirect wind direction

**Aspect** - locations facing south have sun all day, the north doesn't receive sunlight

## 5.3.1 - Ecosystems



Large scale **ecosystems** are known as **biomes**.

**Climate** – the most important factor in determining their distribution

**Rainfall** – the amount and patterns determine the distribution of biomes

**Temperature** – when rainfall is reliable and distributed evenly temperature becomes the most important factor

**Other factors can also have an influence e.g.**

Tropical rainforests are located either side of the equator where hot and wet conditions allow continuous growth of plants

## 5.3.2 - Ecosystem processes

### Tropical rainforest characteristics

**Shrub layer.** It is dark and gloomy with very little vegetation.

**Under canopy.** It is the second level up. There is limited sunlight. Saplings wait here for larger plants and trees to die

**Canopy.** This is where the upper parts of most of the trees are found. The canopy is typically about 65 to 130 feet (20 to 40 metres) tall.

**Emergents.** These are the tops of the tallest trees in the rainforest. These are much higher, and so are able to get more light than the average trees in the forest canopy.



### Nutrient cycle

The rainforest nutrient cycling is rapid. The hot, damp conditions on the forest floor allow for the rapid decomposition of dead plant material. This provides plentiful nutrients that are easily absorbed by plant roots.



### Water cycle

The roots of plants take up water from the ground and the rain is intercepted as it falls - much of it at the canopy level. As the rainforest heats up, the water evaporates into the atmosphere and forms clouds to make the next day's rain.



### Carbon cycle

Rainforests contain about 40 to 50% of the carbon in the biomass, and very little in the soil due to the rapid nutrient cycling



### Key services

- Regulating climate and air quality
- Preventing Soil Erosion
- Carbon Storage
- Provisioning Goods (food, fuel)
- Flood prevention

### Biodiversity

Biodiversity is the variety of plant and animal life in a particular habitat, a high level of which is considered to be important and desirable. The tropical rainforest has a higher level of biodiversity than savannah

## 5.3.2 - Ecosystem processes

### Savanna characteristics

**Grasses and trees** - The savanna is a grassland with scattered trees and shrubs.

**Rainy and dry seasons** - Savannas have two distinct seasons in regards to precipitation. There is a rainy season in the summer with around 15 to 25 inches of rain and a dry season in the winter when only a couple of inches of rain may fall.

**Large herds of animals** - There are often large herds of grazing animals on the savanna that thrive on the abundance of grass and trees.

**Warm** - The savanna stays pretty warm all year.



### Nutrient cycle

Nutrients are cycled quickly during the dry season in the tropical heat. Wildfires are common and nutrients are returned to the soil when vegetation burns.



### Water cycle

All most all rain falls during the rainy season. Vegetation quickly absorbs and stores this water for the dry season. Little water is lost by transpiration due to waxy leaves and low surface area of the plants.



### Carbon cycle

Majority of carbon is stored in vegetation with a lesser amount in soil. During dry seasons, wildfires can burn vegetation, releasing CO<sub>2</sub> into the atmosphere.



### Key services

- Preventing Soil Erosion
- Carbon Storage
- Provisioning Goods (food, fuel)

### Small scale ecosystem: sand dunes

Sand Dunes are a build up of sand around vegetation. This requires loose sand and prevailing winds which blow on-shore. They are formed through a processes known as succession. As plants die and decompose it nourishes the soil making it better quality and now more fragile plants will start to grow.

## 5.4.1 - Human uses

### Gwynt y Môr offshore wind farm

Offshore wind farms are located in the sea close to the shoreline as winds are stronger, unobstructed and do not impose on cities/population as much. Gwynt y Môr is located 15km off the north coast of Wales

The demand for renewable energy is increasing as non-renewables such as coal and gas are depleting

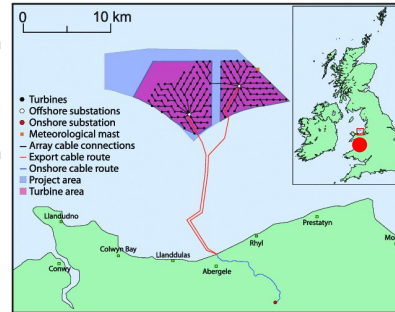


### Advantages

Produces power for 400,000 homes

Creates 100+ jobs

Helps with global climate change efforts



### Disadvantages

RSPB says it affects bird migrations and their normal routines

National Trust has concerns over affecting heritage and tourism

Locals are opposed as it spoils the natural beauty

## 5.4.2 - Human impacts

### Tropical rainforest uses

#### Advantages:

**Infrastructure,** hospitals and education can be improved

**Raw materials,** eg tropical hardwoods such as ebony and mahogany, can be sold for a good price abroad.

**Large-scale farming** brings money into the country and provides food and jobs.

**Small-scale farming** provides food for rainforest communities.

#### Disadvantages:

**Land clearance** for farming, transportation and mining can lead to **deforestation.**

**Loss of fertile soils** that make farming possible are quickly washed away when the forest is cleared.

**Loss of animal habitat** occurs when trees are cut down. Hence, deforestation can result in endangering animals and plant life, or even causing them to become extinct.

### Savanna uses

#### Advantages:

**Small-scale farming** provides food for rainforest communities.

**Raw materials,** eg fuel (firewood)

#### Disadvantages:

Large areas of grassland have been turned into **farmlands** for growing crops and for rearing cattle.

Animals have been **hunted** for their valuable body parts or for sport.

**Loss of fertile soils** that make farming possible are quickly washed away when the forest is cleared.



## 5.4.3 - Ecosystem management

### Tropical rainforest management



**Selective logging** – only cutting down older trees and not rare species. The International Forest Stewardship Council makes people aware of products made from sustainable timber.



**Agro-forestry** – growing new trees alongside crops



**Wildlife corridors** – connecting separated areas of forest with strips of vegetation so animals can move between areas



**Eco-tourism** – encouraging small groups of sustainable tourism. Money made is used to protect the ecosystem and uses local tour guides and companies.



**Debt-swaps** – HICs cancel debts which LICs have, if they protect their rainforests from over-exploitation

### Savanna management



**Crop rotation** – growing different crops and giving the land time to rest between planting to allow soil to recover nutrients



**Afforestation** – planting more trees to protect the soil



**Drought-resistant crops** – Planting genetically modified crops which can withstand long periods of water shortage



**Population control** – Encouraging people to have fewer children so less crops and water are needed in the area



## Home study questions



### DEVELOPING

**Describe** the economic effects of a low pressure hazard [3 marks]

**Give** three ways that humans have influenced the carbon cycle [3 marks]

### SECURING

**Analyse** the pattern of temperature change over the last 450 million years (5.1.1) [6 marks]

**Explain** how low pressure systems forms [3 marks]

### MASTERING

**Discuss** how sustainable the use of one ecosystem is [8 marks]

**Explain** the factors that influence changes in weather for the UK [6 marks]

### CHALLENGE

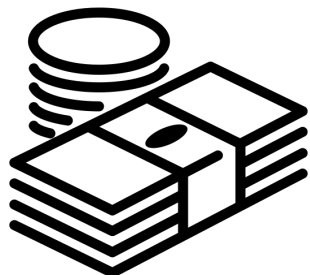
**Decide** how deforestation would affect the nutrient, water and carbon cycles in the tropical rainforest - present your decision as a paragraph or concept map

**Evaluate** how successful you think management strategies for the savanna ecosystems are



# T6

## Development and resource issues



### Geography Knowledge Organiser

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## 6.1.1 - Measuring development

### Measures of development

- Gross domestic product (GDP)** - the total value of all goods and services produced within a country
- Gross National Income (GNI)** - (per capita) average wage per person
- Employment structure** - the type of work people do (for example, primary, secondary, tertiary)
- Poverty** - the % of the population that earn less than \$1.90 a day
- Limitations of these measures**
  - They only measure wealth and not social factors (like life expectancy)
  - They do not show inequality in country (gap between rich and poor)
  - They do not show the cost of living (ie. the amount that can be bought with the average wage)

### Development continuum

A development gap exists between richer and poorer countries. The "Brandt" line splits the world into more developed "global north" countries and less developed "global south" countries.



However, the Brandt line is a bit too simplistic. In reality there is a "development continuum". This is a sliding scale from super rich countries to the very poor. The World Bank splits countries into 4 categories based on their Gross National Income (GNI):

- HICs** with GNI of \$12,736 or above
- Upper Middle Countries** with GNI between \$4126 and \$12735
- Lower middle countries** with GNI of \$1046 to \$4125
- LICs** with GNI of \$1045 or less

## 6.2.1 - Uneven development

### Causes of uneven development

Trade involves buying goods from other countries (imports) and selling them (exports). **HICs** generally export valuable goods such as electronics, cars and financial products. They import cheaper primary products like tea, sugar and coffee. **LICs** do the opposite. This means they earn little and remain in poverty

The prices of these products go up and down but HICs tend to have the biggest influence over them. LICs lose out when the price drops, but have little control over it. Increasing this trade and changing the balance of imports/exports is essential for LICs to develop. Some HICs impose tariffs (import costs) and quotas (a limit to the amount of imports) which also affects LICs.

### Multinational corporations (MNCs)

MNCs have grown as a result of globalisation. Often they are free to decide where they locate many aspects of their company. The headquarters is usually found in a global city such as London. However, other parts of the company can be located around the world. Factors like, government incentives, location of raw materials, labour costs and reduced costs for buildings and land make a difference.



Advantages of MNCs in LICs	Disadvantages of MNCs in LICs
Created jobs and improved local skills	Investment could be transferred to other countries quickly
Pays higher wages than most local Companies	They has large demand for energy/water
Helped attract more MNCs	They have reputation for workers abuse
Contributes to tax which helped pay for schools, hospitals etc.	They might undermine national culture



## 6.2.1 - Uneven development

### Tourism

As a result of globalisation the tourist industry has grown rapidly. It now accounts for 1-in-11 jobs worldwide. It is increasingly becoming important for low and middle income countries. Rapid growth is due to:

- Early retirement & higher life expectancy mean people can spend time travelling
- People earn more so have more disposable income
- Modern aircraft make is cheaper and quicker
- The internet allows people to research destinations

- Mass tourism** Where tens of thousands of people going to the same resort often at the same time of year
- Enclave tourism** Where tourists pay one price and get all travel, accommodation, food and drink in one place
- Cruise holidays** Cruise ships sell all inclusive packages

Advantages of tourism in LICs	Disadvantages of tourism in LICs
Employs thousands directly and hundreds of thousands indirectly, bringing billions to the economy	Many tourist development are partly owned by foreign companies. Some profits leak (send) overseas
Tourism is encouraging new skills and improving language skills of locals	Jobs are seasonal, many people lose their jobs in the wet or winter season
New services such as transport can be used by tourists and locals	The growth of sex tourism can become an issue in some countries
New national parks are being created to protect wildlife and encourage tourism	The arrival of tourists can cause a decline in local cultures, for example loss of language or religious traditions



## 6.2.2 - Managing development

### Aid

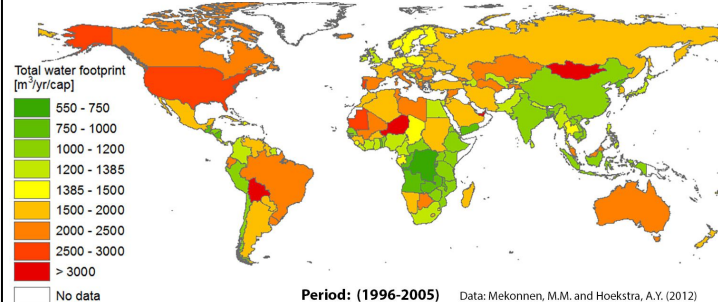
Aid is the transfer of resources from a richer country to a poorer country. Different types of aid include:

- Bilateral aid** – between two countries
- Multilateral aid** – money donated by richer countries via organisations such as the UN
- Short term emergency aid** – immediate relief following a natural disaster
- Long term development aid** – a sustained programme of aid which aims to improve the standard of living
- Debt abolition** – when richer countries cancel debt owed by poorer countries
- Aid from non-governmental organisations (NGO's)** – given through charities such as Oxfam.

Advantages of aid for LICs	Disadvantages of aid for LICs
Emergency aid saves lives and reduces misery	Aid can increase dependency on the donor country
Development aid can lead to long term improvements and increase standards of living	Profits from the large projects can go to multinationals and donor countries
Assistance in developing natural resources benefits global economy	Aid doesn't always reach the people who need it and can be kept by corrupt officials
Aid for industrial development creates jobs and aid for agriculture increases food supply	Aid can be spent on prestige projects in urban areas rather than in the areas of real need
Provision of medical training and supplies improves health	Aid can be used as a weapon to exert political pressure on the receiving country



## 6.3.1 - Water demand



The global consumption of water is rising. This is because:

- Population is rising**
- Economic development** - The more developed a nation the more water used
- Increased need by agriculture** - irrigating crops
- Industrial growth** - As more MNCs invest in NICs and LICs the more water needed
- Consumerism** - HICs use appliances like dishwashers and washing machines

**Water footprint - a measure of humanity's use of fresh water and/or polluted**  
We don't just use water to drink and for hygiene reasons. 70% of our water is used to produce food (crops & animals). Industries use water in 'cooling processes'. Water is need in thing like clothing - fabrics have to be grown.

**Water security - the capacity to safeguard the sustainable availability and access to drinking water**  
The UK generally have excellent access to water all year round. Some places don't, where water isn't clean or always available. Sometimes it's too expensive to transport or access (economic scarcity) or it's not available due to droughts (physical scarcity).

## 6.3.2 - Water sustainability



**Dams:** Dams block the flow of a river, creating a large reservoir to the rear which can be used all year round. Dams can be expensive to build, and the reservoir may flood local settlements and ecosystems.



**Water transfers:** When water is transferred from an area that has a surplus of water to an area that is experiencing a shortage. This may be conducted within a country, but it can also be conducted from one country to another. For example, Lesotho transfers water to areas of South Africa experiencing physical water scarcity.



**Desalination plants:** Desalination is the process by which salt is extracted from water. At these plants, salt is removed from seawater to make it safe to drink. Such plants are extremely expensive to run.



**Water conservation:** This is when an attempt is made to actually use less water in the first instance. For example, many toilets have dual-flush systems to reduce the amount of water used. In addition, meters may be installed within households so residents can check their water usage

### Over-abstraction of groundwater

India is a country that is over extracting its groundwater (the water table is 4m lower than in 2000)

#### Reasons for this

- Some states like Gujarat have a long dry season
- Surface stores (like reservoirs) are often polluted
- Cheap electricity has encouraged farmers to dig deeper wells

#### Solutions

The government can build more dams (this is an example of top down development) Farmers could be encouraged to conserve water e.g. rainwater harvesting (this is bottom up development)

## 6.4.1 - NIC regional development

### India's regional patterns

Northeast has higher levels of poverty (over 30% of people)

South has the least levels of poverty (less than 10%)

The east generally has lower levels of poverty (around 15%)

### Physical reasons

**Northern India** is more mountainous and dry, so it has poor soil and climate to grow crops. **The south** has a more humid climate with rains.



### Political reasons

**Kerala (in the south)** funds education and encourages families to have fewer children = better quality of life (less pressure on resources)

**Kashmir (in the north)** has seen conflicts/wars and is in a mountainous area = not very populated, poor access, dry climate.

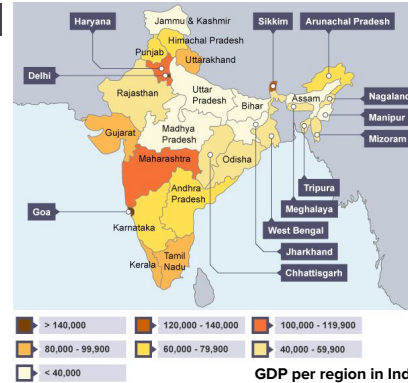
**Maharashtra (in the east)** has the capital city and attracts lots of industries like manufacturing and has ports for trade



### Cultural reasons

India had a **caste system** (some people had more rights than others). Although it's illegal now it still has an impact on people today with types of jobs people can do.

**Girls and women are discriminated** against particularly in rural areas



## 6.4.2 - UK regional development

### UK's regional patterns

There is a north-south divide in the UK for development. The divide recognises the social and economic differences between Southern parts of the UK (more developed) and the rest of the UK (less developed).



### Economic reasons

With the **largest markets located in the south-east**, which also includes **good access to European markets**, companies have greatest potential to **maximise profits by locating in the south**.



### Social reasons

With over 20 million people of the UK's population living within a one hour commute of London, many **businesses prefer to locate themselves close to their customers**, and within **commuting distance of their staff**. **Many universities are in the south** of the UK, including Oxford and Cambridge, which provide many workers - who **employers may perceive as being most skilled** and desirable.



### Political reasons

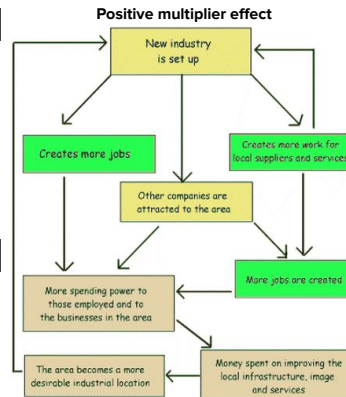
**Many large companies have headquarters (HQ) in the south-east**, making it easier to make crucial decisions. Even though government policy has tried to encourage investment in other parts of the UK it is **still more convenient for other smaller businesses to start up where there is already infrastructure** to support.



## 6.4.3 - Managing UK development

### Positive multiplier effect

Regional inequality can be reduced by investment in deprived areas of the UK. Various strategies have been used in the past which usually includes investing in infrastructure in an area which is deprived to try and promote a **positive multiplier effect**. However, when industries close there is also a **negative multiplier effect**.



### National strategies

**Giving power to local authorities** e.g. regional mayors (Manchester/Leeds)

The **creation of the "Northern Powerhouse"** which is a proposal to boost economic growth in the North of UK, this would attract investment and create skilled jobs in the area

The **improvement of transport links** to the Northern places in the UK. This improves accessibility, attract new investment and therefore may create a positive multiplier effect (eg. HS2)

**Relocation of major business and offices**, sometimes head offices in other parts of the UK, such as Manchester. This encourages other businesses to invest in the areas

### Local strategies (Newcastle)

**Newcastle Enterprise Package** - supporting new business

**Newcastle Science City** - a partnership between Newcastle University, Newcastle City Council and the European Regional Development Fund supporting the innovation and technology sectors

**The Millennium Bridge** - crossing the river Tyne

## Home study questions

### DEVELOPING

**Outline** the measures of economic development [3 marks]

**Give** three reasons why LICs receive less money from international trade [3 marks]

### SECURING

**Analyse** the pattern of global water usage (water footprint) (6.3.1) [6 marks]

**Describe** what a water footprint is [2 marks]

### MASTERING

**Evaluate** which factor/reason (social, economic or political) is the most significant cause of UK regional inequality [8 marks]

**Decided** whether foreign aid is overall a good or bad thing for LIC development [8 marks]

### CHALLENGE

**Create** a concept map to show how MNCs and tourism are linked and how these are also linked to uneven development in LICs/NICs

**Research** how the High Speed railway 2 (HS2) project will have benefits for the north of England



# T7

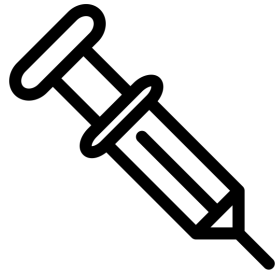
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# Social development



Geography Knowledge Organiser

## 7.1.1 - Measuring development

### Measures of social development

- Life expectancy** - The average age a person is expected to live
- Literacy rates** - % of people in a population that can read or write
- Infant mortality rate** - Number of babies per 100 live births who die under the age of 1
- Average number of people per doctor**
- Average food (calorie) consumption**
- Number of homeless people**
- Deaths from unsafe water and sanitation**

### Measures of gender development

Gender equality is ways in which a country can be measured through social development. So a comparison between genders is useful, such as:

- Fertility rate** - The average number of births to a woman in her lifetime
- Male/female literacy rates**
- Male/Female life expectancy**
- Male/female food consumption**
- Male/female employment rate**
- Gender development index (GDI)** - measures gender inequalities in three key aspects: *reproductive health, empowerment and economic status*

### Human development index (HDI)

A measure of the development in a country taking into account wealth, education and average life expectancy. The human development index (HDI) is calculated from four development indicators and measures a country's progress across a range of factors:

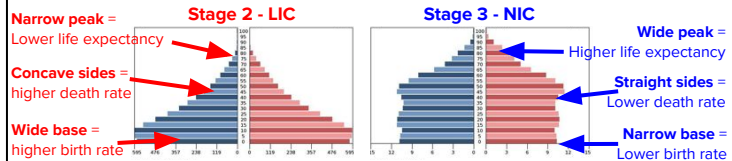
- Average length of schooling in years**
- Literacy rates**
- Gross national income (GNI)** - The average income in a country per person

## 7.2.1 - Development issues in Africa and Asia

### Changing birth rates and death rates

Higher birth rates	Lower birth rates	Higher death rates	Lower death rates
Children provide labour on farms (E) Large families are seen as a sign of virility (S) Women may lack education and stay at home to raise a family rather than work (S) A high infant mortality rate encourages larger families to ensure survival of some children (S)	People tend to marry later and therefore have reduced child-bearing years (S) Women are educated and often follow careers which delay starting families (P) The high cost of living means it is expensive to raise children (E) Couples prefer to spend money on holidays & cars (E)	HIV, Ebola and other difficult to control diseases are having an impact on death rates in LICs (S) In HICs, the increasingly higher proportion of elderly people in ageing societies is leading to an increase in death rates (S)	Better healthcare and vaccination programmes are more available to people (P) Less physically demanding jobs put less stress on people physically (S) People are educated about health and hygiene (P) Water supplies are more reliable and cleaner (P)

### Population structure



## 7.2.1 - Development issues in Africa and Asia

### Child labour

It is estimated that there is currently 168 million child workers and 73 million of these are children under the age of ten. Sub-Saharan Africa has the highest number of child workers mainly working on farms farming products such as cocoa and cotton.

- Poverty** - parents need money or their parents have died
- No (free) education** - have to pay or no formal education
- AIDS** - Disease means a lot of middle-aged people are too ill or have died - so children are the only option



### Primary education challenges

In 2010 there were 4.98 million children in child labour, whereas by 2011 there were 4.35 million child labourers. The lack of education is a key cause of child labour. Out of the 62% of India's children that do not attend school, 62% of those are girls. The reasons for this include:

- Poor quality of school buildings**, facilities and teaching.
- Attitude to women in society**: many families still have an oppressive attitude towards women
- Many girls are expected to marry young** through arranged marriages.
- The **fear that sexual harassment of girls** may bring dishonour to the girl's family.

### Responses to child labour

**The International Labour Organisation (ILO)** - It collects data from different countries and uses this data to set targets which can be used to monitor progress. The ILO then makes recommendation to individual governments as to how this can be achieved in their country which frequently include:

- Improving access to education** for all children so that they can succeed in life
- Creating more trade unions** to prevent and protect against child labour
- Improving social security systems** so that the poorest in society are supported rather than them relying on their children (sick pay & unemployment benefits)

### International refugee movements

Forced migrants are those we call refugees and asylum seekers. They have been pushed out of their homes but there aren't pull factors attracting them to somewhere

- Refugee** - Someone who has fled their home due to serious risk to life or liberty
- Asylum seeker** - Someone who has applied to another country for protection/support as a refugee

### Causes of forced migration

- Lack of food/water** - often causes by droughts or blights (plant diseases)
- Natural disasters** -flooding, earthquakes, tsunamis etc.
- War & conflict** - either between countries or civil war (inside one country)
- Persecution** - risk to life or liberty due to politics, sexual orientation, religion, ethnicity

### Responses to forced migration

**National governments in Europe**  
 - Germany and Sweden see the refugees as victims and have welcomed them to their countries and help them to integrate into their societies  
 - Austria is trying to limit the number of refugees to 80 a day  
 - The UK has agreed to accept 20,000 refugees from Syria by 2020 and it will accept more unaccompanied Syrian child refugees

**International agreements**  
 With an increasing numbers of migrants from Asia and Africa reaching Europe illegally the following changes have been made:  
 - In 2016 border controls were temporarily introduced to 7 Schengen countries  
 - An EU naval operation has been put into place to monitor the Mediterranean Sea to prevent human smuggling and trafficking  
 - EU member states agreed to provide task forces of national experts and support teams to work in hotspots such as Greece and Italy to expedite refugee screening

## 7.2.2 - Health issues in Africa

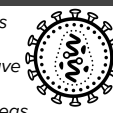
### High infant mortality rate (IMR)

**Neonatal infection** - a high rate of infection from the process of delivering the baby  
 10% of early childhood deaths are caused by diarrhoea  
 The **lack of skilled birth attendants** leads to many children dying within 24 hours of being born  
**Lack of vaccinations** and mosquito nets to stop diseases

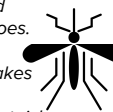


### Human immunodeficiency virus (HIV) Malaria

**HIV is disease which attacks the body's immune system.**  
 Over 70% of people who have HIV live in Africa. Infection rates are higher in urban areas



**Malaria is a disease passed on by parasites in mosquitoes.**  
 Infection rates are higher nearer water sources like lakes & rural areas. Children and pregnant women are most at risk



Emotional impact on relatives and families, as well as on the individual (S)  
 Cost involved in treating the disease, eg. drugs means that most people go without treatment (E)(S)  
 Those infected will not eventually be able to work, lowering the productivity and potential wealth of a country (E)(P)  
 Leads to fewer jobs and less wealth in a country (E)  
 Children may be left without parents and brought up by their grandparents (S)

Large number of children aged under five die (S)  
 Adults are too weak to work which leads to a loss of productivity (E)  
 People remain poor and do not have a lot to eat (S)(E)  
 A country's limited resources are used up in health care rather than in education or improving services (E)(P)  
 Tourists may be less likely to visit a country so there is less revenue (E)

# 7.2.2 - Health issues in Africa

## Health issues responses



Investment in medical care and treatment in hospitals **(HIV/Mal)**



Health campaigns (adverts) about risks and prevention **(HIV/Mal)**

Free condoms **(HIV)** and mosquito nets for beds **(Mal)**

UN's AIDS Fast Track programme - leading education & funding **(HIV)**



UN's 'roll-back malaria' programme which leads a worldwide government response **(Mal)**



The '**Roll Back Malaria**' initiative had over 500 partners working together to provide a co-ordinated response to the disease. One of the UN's Millennium Development Goals is that the incidence of the disease should have reduced by 2015. Today the UN fast track strategy is aiming to end the epidemic by 2030 through contraception, education and medication.



### Top-down approach



### Bottom-up approach



Decisions are made at governmental level and usually involve a high cost. Communities likely to be affected by the decisions have no say as to what is done.

Decisions are made by the local communities that they will affect. They try to help communities by helping them to help themselves.

The advantages of these types of schemes are that they may be part of a strategic plan which aims to develop the infrastructure of the country. However, the frequently lead the country into debt and the jobs that are created are often not for the local community.

The advantages of these types of schemes are that they are small scale and so cost much less, are more sustainable and usually meet the needs of the local community better.

# Home study questions



## DEVELOPING

**Describe** the economic effects of a low pressure hazard [3 marks]

**Explain** why using HDI is better than GDP or GNI for measuring development [4 marks]

## SECURING

**Analyse** the differences between the stage 2 and stage 3 population pyramids (7.2.1) [6 marks]

**Explain** why infant mortality rate (IMR) is an important factor to judge development [3 marks]

## MASTERING

**Evaluate** how successful the responses have been in stopping international refugee movements into Europe [8 marks]

**Discuss** why poverty and poor development often leads to more child labour [6 marks]

## CHALLENGE

**Discuss** how diseases like HIV and malaria can have significant impacts on a country's social and economic development. Record your discussion as a paragraph or spider diagram

**Evaluate** whether top-down or bottom-up approaches are better for improving the health development of LICs