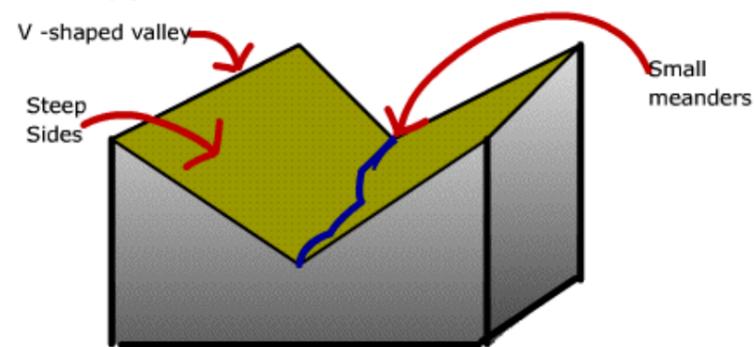


Distinctive Environments

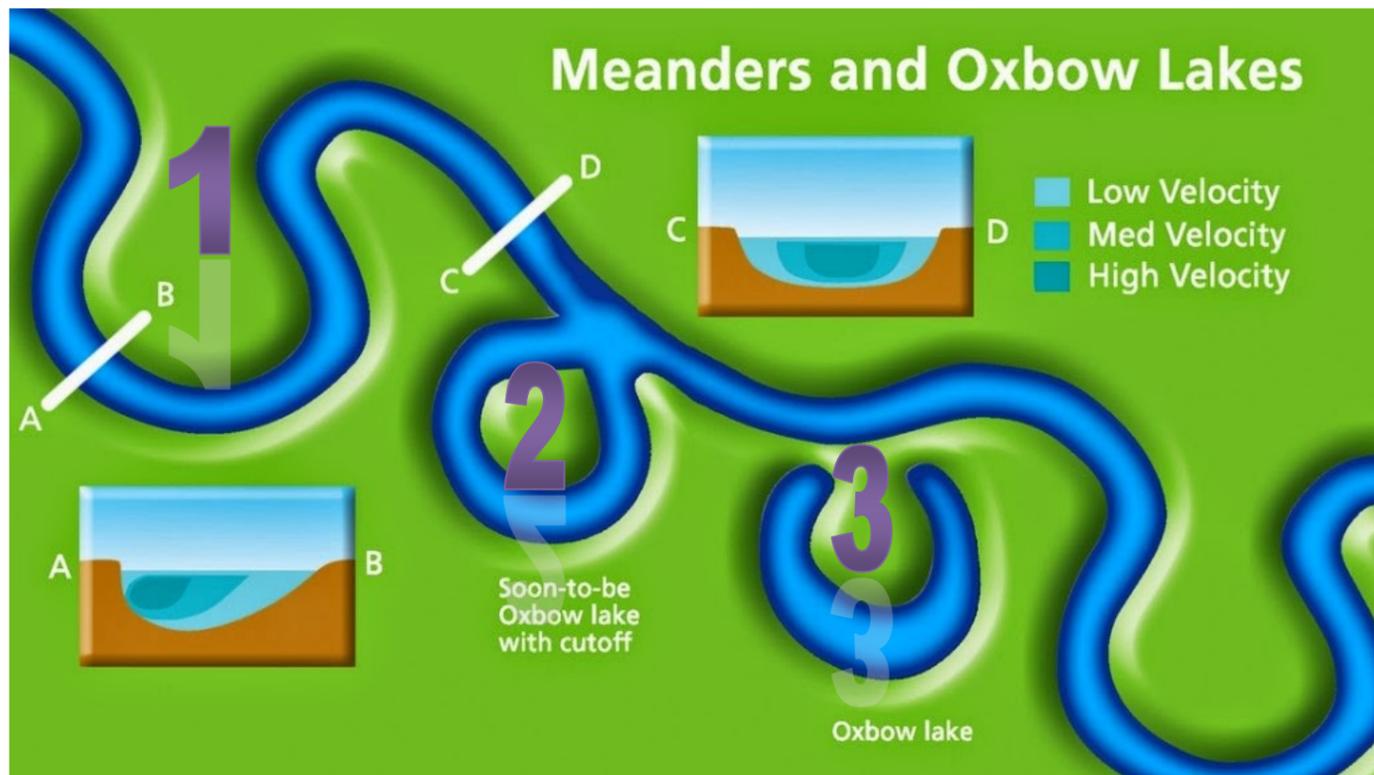
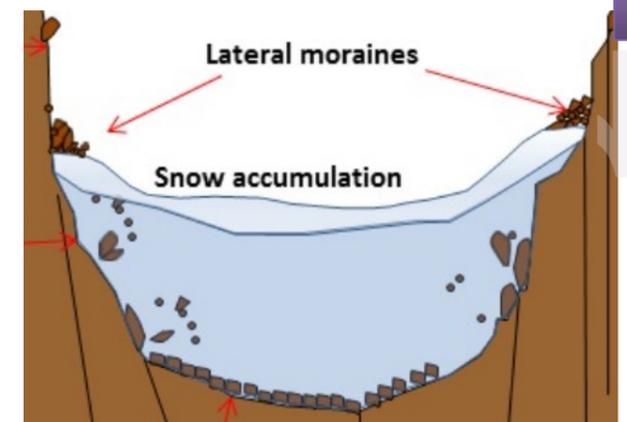
Upper Course



2018 Summer Exam Week

Processes and features: Upper course

Rivers erode (downwards) vertically in the upper course, which creates 'v-shaped' valleys. Some valleys are 'U' shaped, these have been created by glaciers. Ice sheets are MUCH wider than rivers, so an easy way of remembering is to think of a letter U and a V, the bottom of the letter U is much wider and flatter.



Processes and features: Middle course

Rivers erode (across) laterally in the **middle** course, which results in rivers becoming far bendier and winding (aka meanders). Meanders show evidence of erosion and deposition. On the outside bends, the flow is faster and allows erosion to happen. Abrasion and hydraulic action undercut the river bank and a **river cliff** is formed. On the inside bend where the water is shallower, flow is slower due to increased levels of friction and the river deposits (dumps) its load to create a **slip off slope**. It is also common to see **mass movement** like landslides and rock falls on bare slopes, which can lead to sediment rolling/falling/sliding into the river channel. Over time the meander will become cut off from the main channel and an ox-bow lake (a horse shoe shaped lake) will be formed.

At '1' on the diagram the two outside bends on the meander will be eroded over time and they will wear back towards one another. '2' shows what this looks like over time. Now the river will flow mainly along the straight section which is quicker and easier for the water. Over time (usually after floods) the bend becomes detached (cut off), leaving the loop aka an oxbow lake.

Case study: River drainage basin in the UK: name = River Severn drainage basin

Source: Plynlimon hills Mouth: Bristol Channel

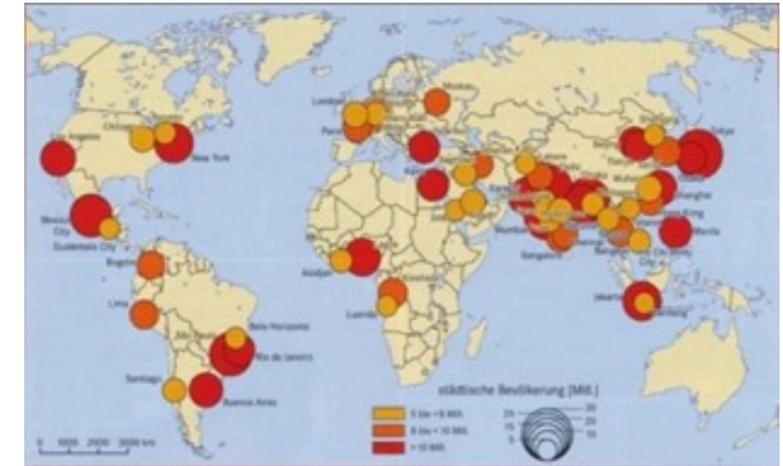
Human activity in the river basin can be helpful and harmful. In the **upper course** humans have built reservoirs to hold water that will later be transferred to towns and cities in England and Wales. The upland areas are largely undeveloped and used as grazing for farm animals like sheep. Water infiltrates the soil and rock, which act like a sponge, this slows the flow of water to the river and can reduce the flood risk. In the **middle course** eg around Ironbridge and Shrewsbury, the areas around the river are more developed and densely populated. The area was once completely wooded (covered in trees). Housing has been put on/around the flood plain. This makes surfaces impermeable and reduces the amount of infiltration. Deforestation reduces interception rates. This speeds the journey of the water to the river channel, causing levels to rise rapidly. Increased levels of water results in reduced friction and greater erosion. If the current is more powerful the river can carry more sediment, which will eventually be deposited downstream. This could make the river flow more slowly at that point and increase the flood risk. Shrewsbury is surrounded by a giant meander bend (aka an **incised** meander). It uses hard and soft engineering to protect its people from flooding. Land Use zoning works well by having land near the river used for open space/sport. This allows infiltration of rain and can be abandoned in Winter and allowed to flood with minimal damage, reducing flood risk down-stream. Lining the river banks with concrete protects from erosion but whilst it is good for Shrewsbury to move the water on more quickly, what about other places downstream? This is why river management needs to consider the whole basin to be sustainable!

Cities are growing. Some cities grow faster than others, usually those located in LIDCs and EDCs. To **calculate % change** you need to do the following steps.

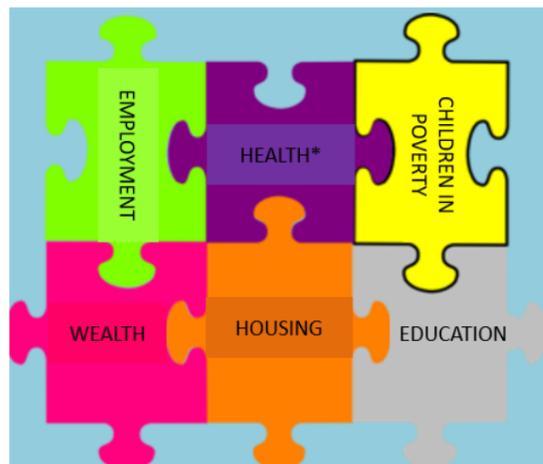
Example: A city had 80 million inhabitants, it now has 100 million. **Step 1:** Calculate the increase ... **100 (current) —80 (past) = difference 20 million.** **Step 2a:** calculate change as a fraction: **change = difference [20] divided by past/starting figure [80]** $20/80 = 0.25$ **Step 2b:** **0.25 x 100** gives you the **percentage**, so in this case 25%

Megacities have populations of at least 10 million. The number of these in the World is increasing. Megacities were once only found in MEDCs, now they are mostly found in the southern hemisphere, mainly in Asia. Cities grow because of two main types of reason:

- A) high rates   of rural to urban migration, when people are pulled by positives like QoL, employment opportunities and better access to health and education
- B) High rates of natural increase within the cities themselves (when birth rate is much higher than death rate)



Cities face a range of challenges, regardless of whether they are found in ACs, EDCs or LIDCs



Inequality is a major problem for the city. The outskirts/suburbs are more well off and the inner city areas more *deprived*. This reflects levels of unemployment. *Unemployment* is higher in the inner city areas, which house the lower paid residents. Housing is mainly terraced houses, which are very old, often 200 or more years. They are small and lack gardens, so are not great for larger families. They were built quickly to house workers in factories around the time of the industrial revolution.

Some have been bought cheaply, done up and sold. Poorer people then cannot afford to buy them. Others are homes to unemployed residents who don't have the £ to improve them. Many of these residents are trapped in a vicious cycle of decline (see diagram far right)

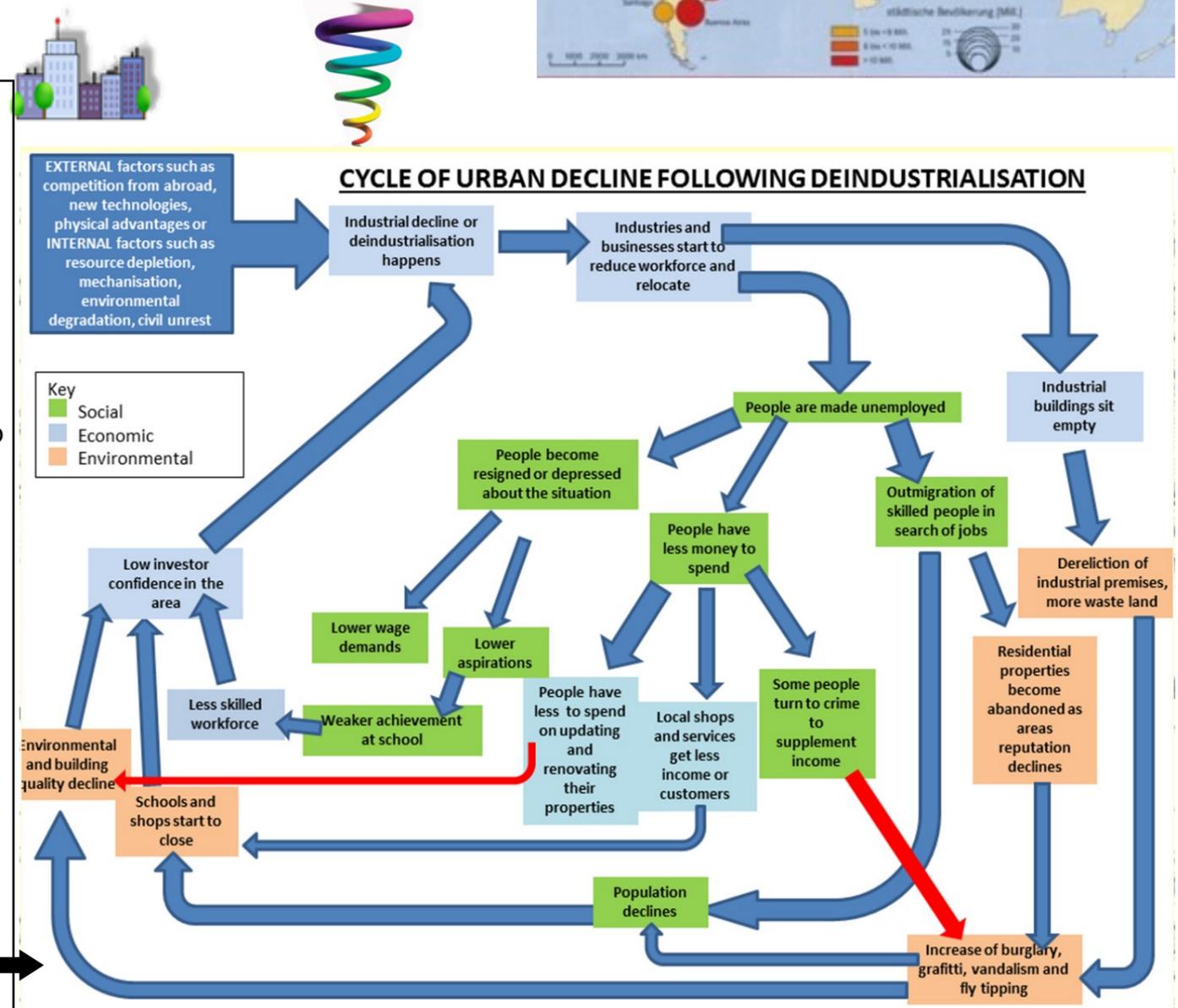
Case study: AC City—Birmingham

Birmingham faces 6 challenges (see opposite) - in the exam the examiner might choose one for you to talk about or you might be given a choice Either way you will be expected to say **WHAT** the challenge (problem) is and **WHY/HOW** this challenge has arisen. Many of Birmingham's problems relate to the fact that

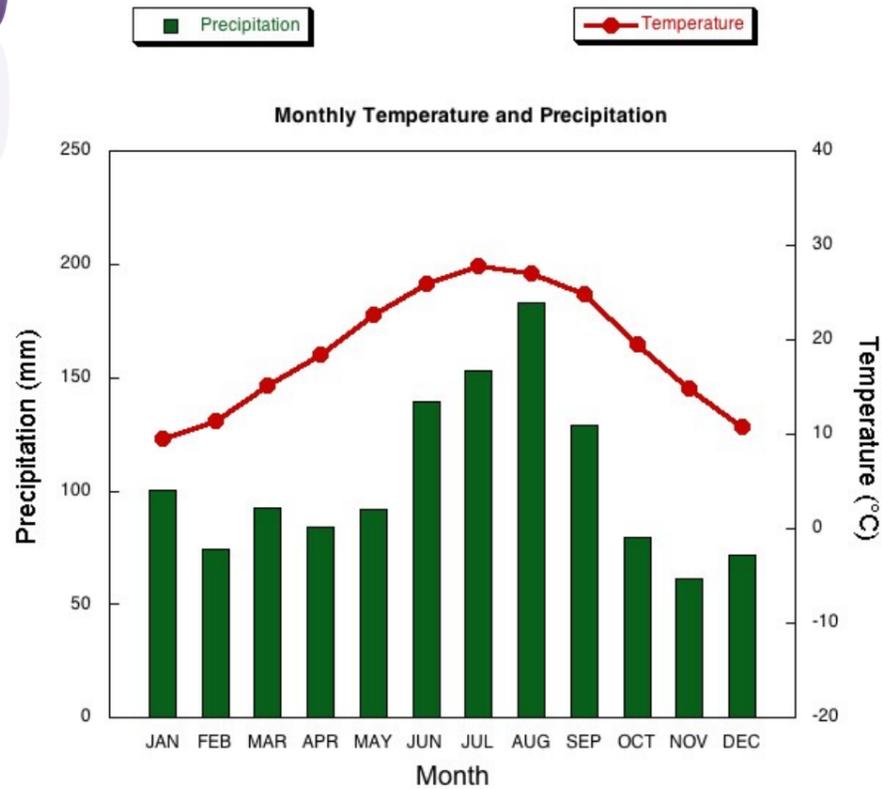
it has been around for a long time (grew massively due to the industrial revolution) so much of its infrastructure (housing, pipework, transport) is a lot older and it costs \$£ to modernise. This is difficult to do now when there's not much space!

Birmingham was once the 'Workshop of the World'. In the 1970s/1980's many of the manufacturing industries that put Birmingham on the map closed down or moved abroad, leaving it with many unemployed persons and a polluted atmosphere to sort out. Those that could escape, did, to the suburbs or to other locations.

<http://www.coolgeography.co.uk/A-level/AQA/Year%2013/World%20Cities/Decline/Cycle%20of%20urban%20decline.png>



Interpreting climate graphs



Sustaining Ecosystems

Precipitation is usually taken to mean **rainfall** (unless on a polar climate graph!). Rainfall is shown as a **bar chart**— the examiner WON'T tell you this!!! Temperature is usually a RED line (unless the exam paper is in black and white).

You will need to be able to calculate MINIMUM and MAXIMUM temperature and rainfall—so have a ruler in the exam.

Make sure you read the numbers off the correct axis and add units, so in this example maximum temperature is 28 DEGREES CELSIUS. Don't write STUPID stuff eg If you were accidentally writing MAXIMUM TEMP is 190 DEGREES, get real, you'd only find that temperature in your OVEN.

RANGE = subtract minimum from maximum so for rainfall would be 175mm—60mm = **range 115mm**

If it says show workings out, DO IT, there's a mark for it. Correct answer w/out them DOES NOT get full marks.

Describe yearly/annual patterns

Do rainfall first—is it all year round or not? Is it constant or are there seasonal variations? In this example—all year round and highest in June to Aug.

Repeat for temperature: constant or variable? Seasonal variations? In this example warmer in Summer (Jun-Aug, max in July), cooler in Sept—May)

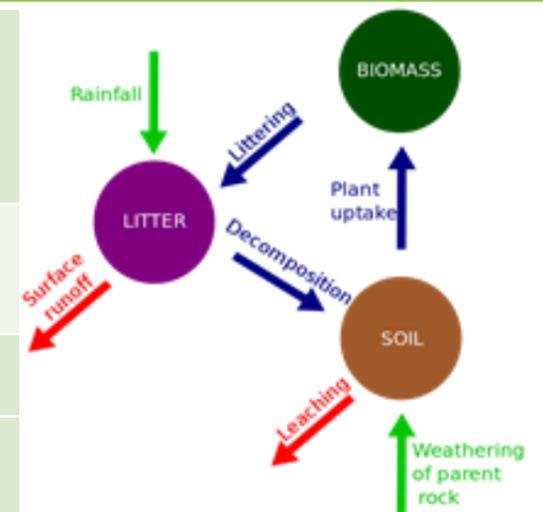
Ecosystem's Components

Abiotic	These are non-living, such as air, water, heat, rock.	
Biotic	These are living, such as plants, insects, and animals.	
Interdependence—links between one component and another eg plants require insects to pollinate them or scatter their seeds	Flora	is plant life occurring in a particular region or time.
	Fauna	is all animal life of any particular region or time.

Nutrient cycle

Plants take in those nutrients where they are built into new organic matter. Nutrients are taken up when animals eat plants and then returned to the soil when animals die and the body is broken down by decomposers.

Litter	This is the surface layer of vegetation, which over time breaks down to become humus.
Biomass	The total mass of living organisms per unit area.
Cycle Speed	Rapid—nutrients in high demand and the warm, damp conditions are ideal for decomposition



Ecosystem Management

Ecosystems need careful management to ensure they have a future. You will be expected to be able to talk about a global example of sustainable management in either the Arctic or Antarctic AND **EVALUATE its success.**

Case Study: Global Scale Sustainable Management: The Antarctic Treaty System

BACKGROUND: Signed by 50 nations in 1961, the Treaty sets aside Antarctica as a scientific preserve, development not allowed, research is

Basic Principles of the Antarctic Treaty

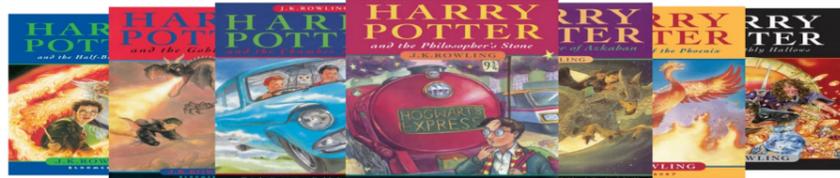
- Bans mining and resource extraction.
- Prevents territorial disputes of the continent.
- Promotes scientific research and co-operation.
- Protects the fragile environments and its wildlife by preventing and managing waste/pollution.

Successful? YES—Treaty has been in place for 50 years with more countries signing up to enforce strict controls and improve its stability. Flora and fauna levels = :-) countries stopped from exploring for gas/oil. **BUT** can't protect from indirect threats like climate change—ice cap melting;

UK in the 21st century

7.1 ai [Phs] UK Physical Characteristics

- Most mountains are located in the **north** and **west**, such as Wales and Scotland.
- These areas have **few roads** and **settlements** but beautiful scenery. – Sparsely populated.
- **South** and **east** of the UK are **flat** with a few hilly areas.
- These areas are suited for **settlements, roads** and **railways** – Densely populated.
- Rivers flow from mountainous areas down to the sea.



7.1 ai [H] UK Population Distribution

Low Population/Sparsely

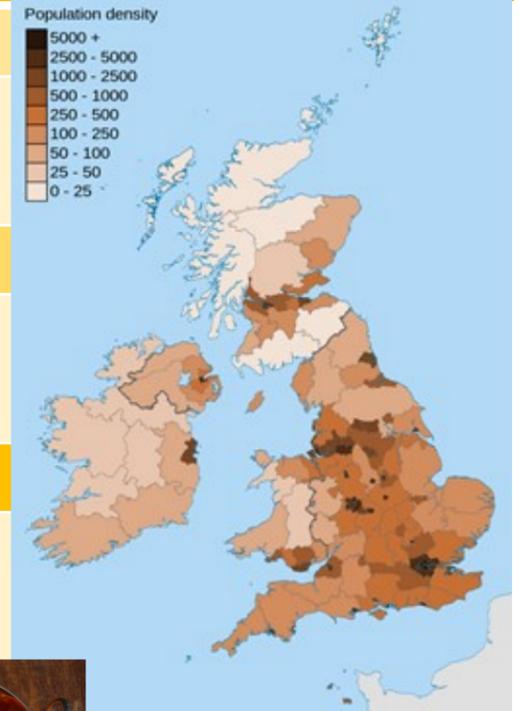
Much of Northern Scotland Reason: **mountainous landscape** and **difficult climate**.

High population/ densely

Rest of the UK (exc London & cities) Reason: **good relief, moderate climate** and **good transport** routes.

Very High/Densely

SE England, in cities eg London Reason: **employment, shops** and **entertainment**. [PULL factors]



7.2bi UK Media Exports

- The UK exports many different types of media
- Examples of media include books, films, computer games, plays, TV programmes
- TV and film are very important to the UK economy
- The media industry **employs 1.7 million** people and **generates £70 billion**.
- **Example: Skyfall** earned **£103 million** at the UK box office alone
- **Example: 400 million Harry Potter books** were sold to 200 territories
- **Peppa Pig**

How global are we?

- UK TV media has 'conquered' 4 of the 6 inhabited continents, only Africa and South America are left.
- Our TV media is most popular in English speaking countries
- Dubbing and translating is helping us to reach non English speaking markets. Selling the rights to make local versions of programmes also helps eg Stromberg = Germany's version of 'The Office'
- This helps other UK businesses too. Fashion and architecture designs in the films create advertising and generate business. People seeing our human landscapes and natural scenery often decide to come here to visit

7.2bii Great British Takeaway

- Fish and Chips was our number 1 take away of choice, not any more—now in 3rd place.
- Sunday Roast—the traditional meal for Sunday, less so now—replaced by other choices (busy lives) and 'Carveries' were 'Sunday' dinner can be eaten daily.
- Number 1 takeaway choice is Chinese.
- Number 2 takeaway choice is Indian.
- English dishes boring and bland a/c to many overseas visitors and immigrants.

Contribution of ethnic groups to UK cultural life

- We are being introduced to other foods and flavours—improves diversity and relationships between different cultural groups.
- Indian & Chinese adapt their dishes to suit our tastes eg Tikka Masala so could argue they are eroding their own food identity to suit us just as we are consuming fewer 'British' dishes as a result.
- Birmingham's Balti Triangle is a major tourist attraction and brings people into the city, creating jobs and promoting multi-culturalism and harmony.
- This generates £ for the local Government to improve infrastructure and public transport