Key ideas and key content: a student guide (Pearson specification B)

Component 2: UK Geographical Issues

This is assessed by Paper 1 (90-minutes). It contains three sections. You answer all questions in Sections A and B and you choose either coastal change and conflict OR river processes and pressures in C1 and dynamic urban areas OR changing rural areas in C2. *This year you will be answering questions about the fieldwork of others.

Topic 4 The UK's Evolving Physical Landscape	
Specification key idea's	**Key content**
4.1 Geology and past processes have influenced the physical landscape of the UK	Geology is the study of the structure and substance of rocks. Past tectonic processes include previous volcanic eruptions and tectonic uplift. Glacial processes include: erosion (plucking – freezing onto the surface of rocks and taking them away as the glacier moves, abrasion – embedded sediment scours away the valley floor and sides, freeze-thaw – where water runs into cracks in the rock and freezes over night, causing expansion and splitting the rock apart further) and deposition (as a glacier retreats it puts down material, including outwash till in the valley floor, and moraine at the snout and on the edges of the glacier). These processes combine to create unique characteristics of upland (areas with more resistant igneous and metamorphic rocks, caused by former eruptions/flows and uplift creating U-shaped valleys and scree slopes) and lowland landscapes (areas with less resistant sedimentary rocks creating dip slopes and escarpments)
	Characteristics (what it is like) and distribution (where it is) of the UK's main rock types: Sedimentary, igneous and metamorphic. Sedimentary rock is formed of small particles that have been eroded, transported, and deposited in layers, or from the remains of plants and animals which turn into rock over time and under pressure. Examples include chalk, carboniferous limestone, clay. They have a layered structure, which can create lines of weakness. They are often in layers of greater and lesser resistance, which can create key features. Igneous rock is formed by heat, for example the cooling of magma creates granite, this is extremely resistant to erosion. Metamorphic rock is formed from existing rock changing shape and characteristics through heat and/or pressure. Two main examples are schists (compressed mudstone), slates (compressed shale). These rocks usually have layered structure and can have faults which can be eroded more readily by erosional processes. Igneous and metamorphic rocks dominate in the north and west of the UK, including Scotland and Wales (due to tectonic processes causing molten magma under pressure to rise through the Earth's crust 300 million years ago). This leads to the upland areas of the Cambrian Mountains and Grampian Mountains. There are some isolated areas of igneous and metamorphic rocks in the South West, this has created small scale landforms such as tors and clitter slopes. Occasionally, harder sedimentary rocks, such as carboniferous limestone (formed 250-350 million years ago) can also form upland areas such as the Pennines. Sedimentary rocks are dominant in the south and east of England. They have created areas like The Fens, the Norfolk Broads and the Somerset Levels. There are some hilly areas of lowland sedimentary areas, such as the South Downs which have dip slopes (gently sloping areas moving with the folds of sedimentary rocks) and escarpments (steep slopes, often on areas of alternating more resistant chalks and less resistant clays which have been eroded away).
4.2 A number of physical and human processes work together to create distinct UK landscapes	Upland areas are dominated by physical weathering processes, and former glacial climates. Their landscapes include: U-shaped valleys (caused by plucking of the back wall of a valley, abrasion of the valley floor and sides and freeze-thaw physical weathering to provide angular sediment for the glacier), hanging valleys (caused by glacial erosion and later post-glacial rivers), scree slopes (caused by slope processes and freeze-thaw), outwash plains (caused by glacial deposition) and misfit streams (caused by post-glacial rivers). Lowland areas are dominated by biological and chemical weathering due to warmer climates and better growing conditions leading to greater levels of vegetation and therefore supporting more diverse ecosystems including burrowing animals. Lowland landscapes include: dip slopes (gentle slopes), escarpments (steep slopes), and low clay vales between.
	Human activities are different in upland and lowland areas, and they create distinctive landscapes. In upland areas, the conditions are less suitable for many human activities, colder nights and higher rainfall. Settlements are often smaller and found in flat valley bottoms. They typically use locally sourced materials, such as slates. The productionist landscapes include coniferous forestry, hill sheep pastoral farming, which affect how we see the upland areas, often drystone walled hill sheep farming and large-scale forestry and forest clearances. People also use these landscapes for tourism including skiing (Scotland), hiking and climbing. In lowland areas, the conditions are more suitable for a wider variety of human activities, more temperate climates. Settlements form on spring-lines of hillsides and along flatter plains. They often use local stones e.g. sandstones, but can also move materials more readily, therefore leading to more diversity. Here the forestry is often deciduous, or orchards, which are often

	used as walking and public areas. The agriculture is usually arable (crops) as the land available is more fertile, there are larger and flatter sites available so tractors and other machinery can also be used. In the south and west there is also likely to be market gardening.
4.3 Distinctive coastal landscapes are influenced by geology interacting with physical processes	The order of rock types and layers at the coast can affect the landforms created. Concordant coastlines, are areas with the same type of rock in layers parallel. The harder outer layer provides protection to softer rocks inland. If this is broken through it can create coves where the softer rock is eroded more quickly. Discordant coastlines, are where alternating rock types run at right angles to the coast. The differential erosion creates headlands (areas of harder rock protruding into the sea) and bays (the area of softer rock which has been eroded away). As a headland erodes (due to faults and joints in the rocks exposed to marine and sub-aerial processes) other landforms are created. Faults and crack in the rock are widened by abrasion, hydraulic action, wave pounding and solution, this widens into a cave, breaks through the headland creating an arch. Over time, the arch widens, by continued abrasion, hydraulic action and solution causing the arch to be unsupported. This creates a stack. Overtime, the stack is eroded further by abrasion, hydraulic action and solution creating wave cut notches at the base of the stack, leading it to becoming unstable and collapsing leaving behind a stump. Harder rock and softer rock cliffs erode in different ways. Soft rock coastlines often suffer from mass movement (e.g. landslips/rotational slumping as seen in Holderness), harder rock coastlines often erode by the foot of the cliff being eroded between the high and low water marks causing a wave cut notch. Over time the cliff is undercut and the unsupported cliff face collapses. Overtime the cliff retreats inland leaving behind flat rocky areas exposed at low tide called a wave cut platform.
	There are many factors affecting erosional landscapes and the rate of retreat. Seasonality – is the way in which the climate changes between the seasons. In the UK Spring is the driest, Autumn and Winter is the wettest and often have the most storms. This in turn creates lower pressure storm surges and high wave heights during these seasons. The frequency of storms is increasing, which means that the rate of erosion is also increasing. Higher winds and lower pressures create larger, more powerful waves, which erode the coastline more rapidly. Prevailing winds are the dominant wind direction. The longer the fetch (the distance over which wind acts on the surface of the water) the more destructive the waves, e.g. in the UK the west coast has the largest fetch with south-westerly prevailing winds. Marine processes are actions caused by the sea. Destructive waves help to create erosional landscapes at the coastline. Destructive waves are high in height, high in frequency and have a greater backwash, than swash, leading to a loss of beach material and material at the cliff foot. Destructive beaches are narrow and steep in shape. Sub-aerial processes are actions which occur above the sea level. They act on the cliff face after the waves have undercut the bottom of the cliff. Mass movement (large scale movement of sediment usually downslope) e.g. rock falls (weathered areas undercut, unsupported areas collapse), slumping (after long periods of rain, which seeps through soil and permeable rocks, where this meets an impermeable rock e.g. clay the saturated rock slumps and slips, often in a rotational matter along a curved surface) and sliding (the movement of a large amount of material along a flat surface e.g. a bedding pain). Weathering (the breakdown of rocks on or near the surface), this happens in three main ways: mechanical (freeze-thaw splitting the rock apart) chemical (salt corrosion and acid rain solution on limestone cliffs), and biological (plants and burrowing animals and nesting birds weaken clifftops and cliff-faces). All of these factors combine to create erosional coastal landforms.
	Transportation (the movement of material by solution, suspension, saltation and traction) and deposition (the putting down of material) help to create and shape coastal landforms on coastal landscapes of deposition. For example: longshore drift (the zig-zag movement of sediment along the beach due to prevailing winds, driving waves up the beach at an angle swashing sediment up the beach, backwash dragging sediment back down the beach under gravity and the process continues until a change in the direction of the coastline forming a spit, bar across an estuary creating a lagoon, or a tombolo connecting to an island.) Constructive waves built up beaches through greater swash than backwash, causing sediment to build up on the beach. These beaches are often wide and gently sloping.
Distinctive coastal landscapes are modified by human activity interacting with physical processes (5)	20 million people in the UK live within the coastal zone. In addition to this tourism in coastal areas accounts for millions of jobs. This means that the coast is essential to human activity. Road and railways, oil refineries, chemical plants and ports are all located at the coast. They are highly valuable areas and these are often defended (a direct effect). Construction dredges sand and gravel from the coastal zone causing change in the sediment budget, causing erosion later

	or further along the littoral cell (down drift) (an indirect effect). Agricultural areas are often the most severely affected as they are less valuable and therefore less likely to be defended. This means that is it often left as part of managed retreat or are in areas of 'no nothing'.
	CASE STUDY – DOREST COAST 25% of the coastline is developed, and human activities have direct and indirect impacts on the landscape. In the past dredging the seabed for sand and gravel has led to increased erosion along the coast. Swanage Bay has a range of semi-natural and human landscapes which are carefully managed. Durston Bay – World Heritage Coastline – landslides and rockfalls occur on its unstable cliffs containing fossil beds. Half of Swanage Bay is built up. It is a residential and employment centre and tourist resort centred on the wide sandy beach. Sea defences, including groynes and a sea wall have been built to protect the beach and town. To the North of Swanage to Ballard Point and The Foreland the beach gives way to scenic limestone cliffs, part of the World Heritage Coastline, which contain a range of important habitats.
4.5 The interaction of human and physical processes present challenges along coastlines and there are a variety of management options (9)	Climate change is leading to rising sea levels (through thermal expansion, melting ice caps and temporary rises due to low pressure storm systems and their associated storm surges) and this is increasing marine erosion, deposition and coastal flooding. 20 million people live in the coastal zone and are at risk of losing their housing, road and rail links, jobs and recreational areas, as well as large scale changes to coastal habitats. In areas with fewer people agricultural land is at risk.
	We need to find sustainable ways to manage the coast and minimise conflicts between people and the environment by considering a large stretch of coast, the people and businesses affected (stake holders) and deciding which areas to protect and how. This is the Integrated Coastal Zone Management (ICZM). Local areas and the Environment Agency conduct cost-benefit analysis (looking at the economic cost, social impacts and environmental impacts against the benefits of protection). There are different methods used to protect the coastline: hard engineering (deflect or absorb energy by creating barriers e.g. sea walls (£6,000/m) and maintaining beaches by building groynes (£1,000/m) – fences to trap sediment moved by longshore drift – these methods are long lasting), and soft engineering (which works with natural processes e.g. beach replenishment – rebuilding the beaches as a natural defence and slope stabilisation – holding the cliff in place with planting/meshing/re-profiling – these methods need to be continually repeated)
4.6 Distinctive river landscapes have different characteristics formed by interacting physical processes	Rivers start at the source (often in a hilly/mountainous harder rock area - **River Severn – Plynlimon** with impermeable shales and grits, 250mm/yr precipitation and therefore runoff is high). This is the upper course. It has a steep gradient and sediment is added to the river by weathering of the slope sides (physical, chemical and biological weathering) and mass movement (soil creep – individua particles of soil move slowly down slope due to gravity and slumping – the bottom of the valley is eroded creating steeper slopes and material slides downwards, often triggered by heavy rain which make the overlying rock heavy). Erosional processes (abrasion, attrition, hydraulic action and solution) dominate creating narrow, shallow channels. Initially vertical erosion creates v-shaped valleys, which then wind between areas of more resistance creating interlocking spurs. There are waterfalls and gorges in the upper course too (**River Severn – The Severn Breaks It's Neck**) The discharge (the amount of water moving through the river) is low, velocity (speed) is low, sediment is large and angular. In the mid-course of the river the slope angle reduces. There is often a change in climate (**River Severn – Shrewsbury's meanders** and 700mm/year precipitation, softer rocks e.g. mudstones, sands and gravels). The river is wider and deeper. As well as vertical erosion lateral (sidewards) erosion also occurs. There is deposition on the insides of meanders and on the floodplain. The sediment becomes smaller and more rounded. More tributaries join the river (**River Severn – Ashbrook after Carding Mill Valley**) and the discharge and speed increased. The lower course has very low gradients. Geology is usually alluvium, sands and gravels. The river widens and deepens (**River Severn – 70m wide at Tewkesbury**). The channel is smooth and there is less friction with the river bed and banks so the velocity is fastest. Major tributaries add to the discharge (**River Severn – is joined by the River Avon at Tewkesbury**). Sediment load is high and much sediment is transported by suspension. The **River Severn's** mouth enters the **Bristol Channel at Bristol**.
	Erosional processes: hydraulic action (air is forced into gaps in the rock by the movement of the river, pressure builds, as the water moves pressure is released and over time the rock splits apart), abrasion (the sandpapering/friction wearing away the rocks due to the sediment

	transported by the river), attrition (stones and sediment bang into each other and break into smaller pieces), solution (chemical dissolving of the rock). Transportation processes: traction (larger stones and boulders are rolled along the river bed), saltation (the bouncing of sediment along the river bed, picked up and dropped as the speed and energy of the river changes), suspension (where fine particles are carried along in the river) and solution (dissolved particles carried in the water). Deposition: Sediment in rivers is deposited from greatest to smallest as a river slows and loses energy. River landforms are created by a combination of these processes. **V-shaped valleys and interlocking spurs** vertical erosion occurs in the upper course creating a small river. Over time, the process continues and the sides of the valley are eroded causing mass movement and soil creep in on the valley sides and the river has more sediment and erodes further. This creates v-shaped valleys. As the river meets areas of more resistance they flow around them, over time the river winds between these areas causing interlocking spurs. **Waterfalls** are formed in the upper course of the river where harder rock overlays softer rock. The softer rock is eroded away more rapidly by abrasion, hydraulic action and solution forming a drop. Over time, this erosion continues and a deep plunge pool forms with erosion causing the softer rock to undercut. The harder rock overhand is unsupported and collapses adding debris to the plunge pool speeding up erosion further. **Meanders and oxbow lakes** Meanders are bends in a river's course in the floodplain. The flowing water swings from side to side eroding areas of weakness, directing the line of maximum velocity and the force of the water towards the outside of the bend. This lateral erosion causes undercutting and an outer steep bank called a river cliff. On the inside of the bend the river velocity reduces. This causes deposition creating a gently sloping bank called a slip-off slope. The material deposited is a point bar and is characteristically curved in shape. The cross section of a meander is asymmetrical with a steep outside and a gentle inside. Overtime as the outside of the meander erodes further the neck of the meander breaks through (usually during a flood). The river takes the course of least resistance and continues through the new straight channel and deposition at the neck seals off the bend creating a horseshoe shaped lake called an oxbow lake, which will dry up over time. **Floodplains and levees** A flood plain is the flat area of land either side of the lower course of a river. It is formed by lateral erosion on the outside of meanders as they migrate across the valley floor. This makes the valley floor flatter and wider. As the river floods the water spreads out across the valley floor. As the slow they have less energy and its sediment is deposited. The largest material is deposited first, next to the river channel, and the finest material furthest away. Overtime the process repeats itself and natural banks build up on the edge of the river channel called levees. **Deltas** are D shaped areas of deposition at the mouth of a river. It occurs when a river enters another body of water e.g. ocean/sea/lake. The velocity slows and the river deposited its material, faster than it can be carried away. This creates a build up of sediment and the river splits into smaller channels called distributaries and create large areas of wetland.
	There are many factors influencing river landscapes, sediment load and hydrographs including climate (the long-term weather conditions of a place), geology (rock type and structure) and slope processes. A hydrograph is a way of showing how a river responds to a rainfall event. Rainfall is often shown as a bar chart with the peak rainfall being the tallest bar. The river discharge is shown by a line. The highest point of the line is the peak discharge. The time between the peak rainfall and peak discharge is called the lag time. The rising limb is when discharge in the river increased and the falling limb is when the discharge decreases. A flashy flood (fast occurring) will have a steep rising limb, a short lag time and is likely to have one or more of the following: heavy rainfall (precipitation is faster than infiltration)/sudden snow melt, impermeable rocks, small rounded drainage basin shape, frozen or saturated soil/clay soils which have small pores so there is more surface runoff, steep slopes, thin soils, little vegetation, urban areas (impermeable surfaces), antecedent conditions (previously heavy rainfall/saturated ground/frozen ground). A more natural hydrograph shape will have a low rising limb, a long lag time and a gentle falling limb and is likely to have one or more of the following: small amounts of gentle rainfall/gradual snow melt, permeable rocks, elongated drainage basin, dry soil, sandy soils, gentle slopes, deep soils, woodland, rural areas, antecedent conditions (little prior rainfall).
4.7 River landscapes are influenced by human activity interacting with physical processes	Human activities (urbanisation, land-use change, deforestation) change river landscapes which alter storm hydrographs.
	The interaction of physical and human processes is causing river flooding on one named river, including the significance of its location. **CASE STUDY RIVER SEVERN**

	The River Severn has always been a major waterway and trade route which led to the growth of settlements e.g. Shrewsbury and Tewkesbury. Many of these settlements regularly suffer flooding. This impact has increased as populations have grown and the floodplain has been built on. July 2007 saw double the rainfall for June and July. The 20th July had 140mm in a few hours (caused by a series of depressions brought by the jet stream, further south than normal). May-July was the wettest since 1766. The soils became saturated creating surface runoff. Urban areas in the West Midlands increased drainage and surface runoff further due to impermeable surfaces and flash flooding overwhelmed many settlements. At Tewkesbury the River Severn and River Avon meet at a confluence. The large catchments of each and large volves of runoff led to flooding at Tewkesbury. The flooding was so bad the water got into Tewkesbury Abbey for the first time in 250 years. 3 people died, 48,000 homes were flooded, £20,000 repair costs. The floods cost the local council £140,000 and the British economy £3.2 billion. Schools and businesses were shut.
4.8 Some rivers are more prone to flood than others and there is a variety of river management options	There are increasing risks from river flooding (due to the increased frequency of storms due to climate change and land-use change – increased building on floodplains, deforestation of slopes in the upper course and cultivation of land) this is leading to increased threats to people and environment.
	There are costs (negatives) and benefits (positives) of managing flood risk. Hard engineering methods (artificial construction) include flood walls, embankments and barriers and soft engineering methods (working with natural processes) include floodplain retention and river restoration. **Flood walls** – Artificial barriers raising the riverbank to increase the capacity of the river (it can hold more). They prevent water from spreading into small scale areas e.g. settlements/housing. They are expensive. They help flood water move quickly past an area, but can cause flooding downstream. They do not look natural and limit access to the river bank. **Embankments** – high banks built on or near riverbanks (to increase capacity of the river). They are inexpensive. Successful in stopping the spread in small areas e.g. settlements, they can be made more environmentally friendly with earth and grass. They can be overtopped (trapping water behind them causing greater flood risk/longer floods) and burst under pressure (causing greater pressure) **Flood barriers** – temporary structures installed when needed. They are cheap. They are used in scenic areas e.g. Ironbridge. Only in one location. Risk of not installing in time, or overtopping/buckling at highest levels e.g. Ironbridge 2020 **Floodplain retention** – strategies to maintain and restore the river's original floodplain. They are cheap. They allow rivers to flood, helping to slow the flood water down and recover the natural sedimentation process. This restores the soil structure making them more efficient at storing water. However, in allowing land to flood it can affect farmland. **River restoration** - using a variety of strategies to restore the river's original course. This is cheap. It removes embankments and restores meanders. This slows the river down. It creates natural rivers for wildlife habitats and recreation. However, they may also need some flood-plain retention and can affect land use, particularly farming.

The UK's Evolving Human Landscape	
Specification key idea's	**Key content**
5.1 Population, economic activities and settlements are key elements of the human landscape	There are differences between urban core (built up e.g. South East England/West Midlands/Greater Manchester) and rural periphery (countryside e.g. the North, Scottish Highlands and Mid Wales). **Urban core characteristics**: high population density, economically active/young age single people, economic activities like retail and large shops, offices and head quarters, many jobs, cultural centre with libraries, museums and theatres, infrastructural hubs e.g. major train stations, settlement type: conurbation, city, large town. High and low-rise buildings, expensive property prices. **Rural periphery characteristics:** low population density, ageing population, some single people, economic activities like primary industry (farming, forestry, fishing, mining), telecommuting (working from home – IT), tourism (seasonal and often low paid), renewable energies, settlement type: market towns, villages and isolated farms, low-rise building, cheaper land prices, although some large houses and barn conversions can be high in price. UK and EU government policies have attempted to reduce differences between rural and urban areas through enterprise zones (areas where companies based there can receive tax breaks and government support – 18 new zones were approved in 2015 in both rural and deindustrialised urban areas), investment in transport infrastructure (e.g. HS2 – aimed at increasing connectivity and reducing the North-South divide), regional development (the EU's Regional Development Fund supports UK regions by economic regeneration, improved communications and supporting jobs e.g. Cornwall which receives support as it's GDP is below 75% of the EU average, projects have improved fast broadband to enable people to work from home or local offices).
5.2 The UK economy and society is increasingly linked and shaped by the wider world	Migration is not new to the UK but in the last 50 years national (within the UK) and international (from other countries) migration has altered the population geography of the UK in terms of the numbers, distribution, age structure of different parts of the country. UK (visa/entrance criteria) and EU (Freedom of Movement between EU countries) policies have led to increasing ethnic and cultural diversity across the country. **National migration patterns** – **retirement migration** to Devon, Dorset and Cornwall. Retirees are attracted here due to pull factors such as beautiful scenery, warmer climate, slower pace of life, low crime rates and sense of community. This affects the host community as there are more older people (causing pressure on health care services) and increased house prices, forcing younger generations to leave the area reducing the number of economically active adults and children, creating an ageing population. Positively the grey pound is creating demand for services e.g. care, specialist shops, social activities creating jobs. Many retirees also volunteer in the local community. **Rural-urban migration** – young adults leave the countryside due to a lack of well-paid job opportunities and services (e.g. Mid Wales) in search of further education and jobs in cities (e.g. Birmingham). The impact on the host areas is growing urban areas and studentification, but also an increase in well-educated future workers. The impact on source areas is an ageing population and a concentration of people tied to primary sector jobs. There is a general north-south migration, due to higher wages and increased services and a trend of people moving out of city centres causing urban sprawl and counter-urbanisation. **International migration patterns – UK government encouraged immigration from former colonies** – after World War II there was a shortage of workers. The UK government advertised for workers in their colonies (Caribbean, India, Pakistan, Bangladesh) for transport, textile and steel industries, many moved to the urban core, particularly London. Migrants were mostly young adults with young children, or single men. By 1971 1 million people had migrated and there was no longer a shortage of labour, so numbers reduced and newer migrants moved directly to northern towns like Bradford. **EU Accession of 8 2004 –** Young Eastern European migrants (mainly from Poland, Latvia and Estonia) moved to cities and found jobs in industries or services and to rural areas for farming jobs. This was due to the EU's Freedom of Movement policy, which enables free movement between EU countries. **Refugee movements** – 2012-15 People fled war in Syria and Afghanistan, mainly migrating to UK cities including Birmingham. Most international migrants settle in and around cities for work and also for greater transport infrastructure/connections e.g. airports and greater community, cultural and religious links. Migrants often provide cheap or unskilled labour (e.g. some basic construction jobs) and skilled labour (nurses and doctors) – filling skills shortages. All inward migration (national and international) increases population density and pressure on services in some areas. Young families create youthful populations (putting pressure on some school services in cities, but helping rural services to survive by increasing numbers). Migrants introduce their home culture e.g. cuisine, music, language and religion which adds to our multicultural societies, but tensions can occur between existing residents an inward migrants (both national and international).

	The decline in primary (farming, forestry, fishing and mining) and secondary (manufacturing) sectors through an international division of labour (it is cheaper to import goods and products than extract them/make them here) and global shift in manufacturing (e.g. from UK to Eastern Europe/Asia) has led to deindustrialisation and a spiral of decline in many peripheral areas of the UK (like the North East). There has been a rise in tertiary (services) and quaternary (research and development) sectors, mainly in urban areas. Both of these changes have altered economic and employment structures across the UK. **CASE STUDY NORTH EAST AND SOUTH EAST** The North East was dominated by coal mining (primary) and ship building, iron and steel production (secondary). In the last 50 years this has declined due to foreign competition, high land and labour costs and exhaustion of coal seams (>100,000 miners in 1947 to 55 in 1994). Manufacturing has fallen from 40% to 10% of all employment (1971-2011). The region experienced the highest unemployment rates of 8% in 2013. Child poverty rates increased in Middlesbrough to 40%. Rural parts of the North East are still dominated by primary jobs (agriculture) and although mining, and fishing remain they are at a small scale. Automation of industry and improved technology has led to a reduction of manufacturing workers, although the Nissan car factory in 1986 employs over 4,000. Tertiary (services) growth has had the largest impact with 22% of people in the region work for the public sector. The South East still has some primary industries in rural areas, mainly large scale farms e.g. fruit in Kent. Secondary sector jobs are increasing in urban areas, for example along the M4 corridor (light industry e.g. electronics and engineering. It is a key region for tertiary and quaternary industries. Unemployment is low (6%) and wages are high. Many new firms are moving to accessible towns with green open countryside e.g. Green Park Reading. The South East is attracting new industries due to accessibility and infrastructure e.g. airports, ports, road and rail links, markets (affluent consumers) and labour (high skilled e.g. Oxbridge and London universities), political factors (close to decision making) and geographical proximity to the European market.
	Globalisation (the process by which the world is becoming increasingly interconnected), free-trade polices (UK and EU) and privatisation (selling state owned industries to private investors) has increased foreign direct investment (FDI – money put into a company/industry by a person, company or government from outside the UK) and the role of TNCs (transnational corporations – companies with activities in more than one country) in the UK economy. **Globalisation** is changing the UK economy as international operations are affecting the production chains. Networks link countries, flows of goods and services move between these networks and global players like TNCs influence this globalisation. This has led to a need for re-skilling of workers from agriculture, mining and manufacturing skills to suit tertiary and quaternary sector jobs. The workforce is becoming more flexible with part-time work and self-employment. **Privatisation** of industries such as steel, transport and distribution, electricity, water and gas has increased FDI (investment in nuclear power from China and France), increased awareness of global markets and increased competition. Increased foreign ownership of UK firms such as TATA taking over British Steel, increased profits for UK shareholders of successful UK businesses investing abroad e.g. Unilever (a British-Dutch company), efficiencies in the international production chain can lead to job losses in the UK. **Free trade** – International trade in good and services include the payment of taxes and tariffs. Some countries group together to promote trade areas, such as the EU bloc. **Foreign direct investment –** Flows of capital (money) from businesses in one country to another. >50% of UK investment comes from the EU, mainly in energy projects and infrastructure. **Transnational corporations** - Large companies which operate in a number of countries. They affect the UK economy by opening and closing branches, regional head quarters and using supplier industries e.g. Nestle.
5.3 The context of the city influences its functions and structure **CASE STUDY BIRMINGHAM**	Birmingham developed on a raised plateau over the river Rea which was originally forested nearby, this provided the original inhabitants with water, timber and fuel. It is situated near to the coal fields of Staffordshire and iron deposits of Wales. It grew and developed due its position at the heart of the canal, road and rail networks and its international airport (>150 international connections). The city developed fastest during the Industrial Revolution as the city of a 1001 trades. It was famous for jewellery, guns and brass. Birmingham is a regional hub for transport and manufacturing and is a major conference (NEC), shopping (Bullring and Grand Central), sports (Edgbaston, Villa Park) and business tourism venue (ICC). Globally Birmingham is recognised due to its trade, having more canals than Venice, Europe's largest public library, music (UB40, Black Sabbath, Ocean Colour Scene), Crufts, Commonwealth Games 2022, international banking (Deutsche Post, HSBC, Barclays), the G8 Conference, Birmingham University.
	The CBD is located around Birmingham New Street station and New Street. Here we see densely built areas, many high-rise buildings, shopping centres (Grand Central, Bullring) and commerce (HSBC, Barclays, Deutsche Post). There are some older buildings, but many have been completely redeveloped – we find some of the newest buildings in the city here. Inner city areas, such as the canal side area of Brindley Place, have been redeveloped, while others, such as Digbeth, have many areas of derelict factories due to deindustrialisation and decentralisation, any remaining buildings are from the late 1800s and were

	terraced housing, back to backs and factories. Suburbs vary throughout the city from the more affluent outer suburbs Sutton Coldfield (high cost, low density, large open space e.g. Sutton Park) to less affluent inner suburbs of Washward Heath (inter-war housing, some gated parks). The rural-urban fringe is protected by a greenbelt and has some village such as Shenstone.
5.4 The city changes through employment, services and the movement of people **CASE STUDY BIRMINGHAM**	Causes of national and international migration that influence growth and character the different parts of the city (age structure, ethnicity, housing, services, culture). National and international migration of students to areas such as Aston has led to studentification (an increase in the number of young adults and the services begin to reflect this and houses of multiple occupancy develop) The inner city area around the newly redeveloped Brindley Place has a wide variety of highly skilled and high wage national and international migrants. Other inner city areas such as Digbeth have waves of past and new migrants due to lower housing prices. Traditionally an Irish catholic area as these groups grew in wealth and moved towards the suburbs newer migrant groups who were attracted by the catholic churches and community moved in. This is currently a largely Polish area with the Katyn Café and Restaurant. Other areas have specialised to meet the needs of their population in both religious institutions and community centres, music and cuisine with mosques in Alun Rock, large scale Diwali celebrations in south and west Birmingham and the Afro Caribbean Millennium Centre based in Kings Heath.
	Across the city the most affluent areas are found on the periphery, for example Sutton Coldfield. Here there are large numbers of economically active working in managerial rolls. Higher incomes and newer/improved housing stock leads to improved health. There is good quality education including private schooling. Inner city areas such as Washward Heath have lower employment levels, high pressure on ageing services and lower school outcomes, leading to a spiral of decline. Lower income levels and aging housing stock leads to increased health issues.
5.5 The changing city creates challenges and opportunities **CASE STUDY BIRMINGHAM**	With deindustrialisation due to the global shift in manufacturing factories closed in the inner city, in areas such as Digbeth. This has created areas of dereliction and led to depopulation of the area, due to a lack of jobs, the spiral of decline leading to services closing and people force to move for work and services. De-centralisation challenged the centre of the city for shopping in the 1980s with the creation of Merry Hill Dudley, but regeneration of the city centre has attracted new shops such as John Lewis and Selfridges to the Bullring. Retail and business parks have moved out of the inner city to new purpose built parks on the rural-urban fringe and nearby settlements e.g. the i54 park which has JLR's new engine manufacturing plant. E-commerce continues to challenge the city centre shops.
	Parts of the city have experienced economic and population growth e.g. new developments in the rural-urban fringe around Sutton Coldfield. There has been a growth in financial and business services and investment by trans-national corporations, e.g. the arrival of Deutsche Post, Barclays and HSBC. Gentrification has occurred around the Jewellery Quarter, where the closure of some factories such as the Swan Factory has led to a loss of jobs, causing a spiral of decline, lower house prices has led to more affluent residents moving in, renovating houses and changing the traditional pub into cocktail bars (such as Purnell's). Former factories are being converted into high end apartments. Studentification is occurring in Aston and there has been a growth in culture and leisure around the Arcadian Centre, New Street, Arena Birmingham and Resorts World.
5.6 Ways of life in the city can be improved by different strategies **CASE STUDY BIRMINGHAM**	Regeneration and rebranding of the city has had positive impacts on the people. The BeBirmingham campaign led to an increase in visitors to the city. This followed by the creation of the Bullring and Brindley Place led to an increase in part time tertiary jobs, as well as business and finance high skilled jobs. There are also negative impacts on people – large scale redevelopment of Curzon Street and Paradise Circus has led to road closures, constant noise and construction traffic. Local people are being priced out of many inner city apartments and the new jobs being created are not necessarily suited to the skills of the existing residents. The environment of Birmingham has both improved (increased cleaning, improved access to open space and a decline in manufacturing has reduced water pollution) and declined (air pollution from increased commuters and congestion).
	There have been a range of strategies aimed at making urban living more sustainable and improving quality of life throughout the city (recycling – although Birmingham has won awards for its street cleaning and recycling the 2018 bin strikes meant that it was the 14th best city in the country, not acceptable for the second largest city). Areas of former industry such as Fort Dunlop have been redeveloped to retain the outer shell (reducing building materials and construction) and installed energy saving, sustainable heating and electricity systems with companies locating there paying towards carbon offsetting. This created jobs for the local community (but they were lower skilled and lower wage than the industrial specialised jobs they replaced). Birmingham has increased the amount of open space through a series of improved and extended urban parks. Transport has been improved by a tram (aimed at reducing congestion, but only has 14,000 users a day), improved cycle routes and a congestion charge for the city centre have all led to a reduction in the city's transport related carbon emissions. In the area of Summerfield Eco Village existing

	housing has been improved by insulation, improved boilers, increased energy efficiency and solar electricity. Local people were trained to carry out the work, generating skills and jobs for the future. These houses remained affordable for the local people by reducing existing bills and creating low income owner occupied houses.
5.7 The city is interdependent with rural areas, leading to changes in rural areas **CASE STUDY BIRMINGHAM**	Birmingham and its accessible rural areas are interdependent. The surrounding areas buy goods produced/purchased in Birmingham, they use services based in Birmingham and provide labour for these industries. This creates economic benefits of larger markets for Birmingham, and increased human capital. The rural areas provide space for transport services (such as ring roads – M6Toll), room for affordable housing for its residents (Brownhills flats partly funded by Birmingham council(flows of goods, services and labour) – this increases house prices and an inward migration of people which can affect community relations and affordability for locals (Hammerwich 4x increase in house prices in 20 years). Increased populations can increase the number of services in a village e.g. schools. They can also increase congestion and air pollution and put a strain on services. Areas of recreation and countryside (e.g. Chasewater and Cannock Chase) become overcrowded, but can also be supported by increased parking charges. The rural areas provide water (e.g. Severn Trent Reservoirs) and goods (e.g. meat and vegetables through farmers markets) benefiting the sellers in the rural area and the residents in the urban area.
	Rural areas of Warwickshire have experienced economic change and social changes due to its links with Birmingham. Increased counter-urbanisation (the movement of people from the towns/cities into smaller villages and the countryside, often as a result of a lack of housing, improved transport and telecommunications) . This has put pressure on local housing stock, increasing competition and prices in commuter villages like Henley-In-Arden. It was a medieval town based on farming. Today it is largely a commuter village near Birmingham. The commuters have changed the age of the population of the village to 40-60, workers who earn enough to buy property in this increasingly expensive area. Many locals are priced out as prices increase by 7%/year. This increasingly affluent commuter group have led to a change in the village shops and services to increasing numbers of designer stores.
5.8 The changing rural area creates challenges and opportunities	Rural areas face issues with the availability (not enough) and affordability (too expensive) of housing. For example in areas such as National Parks building is restricted, which means that there is only a limited number of homes available. This increases house prices as there is increased demand from the next generation and from commuters and retirees. A decline in primary employment (farming – less jobs available due to mechanisation and cheaper imports, forestry, fishing and mining – cheaper imports and exhaustion of mineral deposits) means that many rural dwellers have limited job opportunities. They either have to move to cities, or have to diversify their existing work. The remaining jobs in such areas are often seasonal, low-skilled and low-paid. This limited income means that there is often a spiral of decline leading to rural deprivation and sometimes depopulation. This means that healthcare and education services often close as classes and patients become too few to be viable. This means that quality of life in rural areas declines. Giving lower IMD scores. This affects the elderly (more likely to need health care) and the young (more likely to need education/college and eventually jobs and housing) more severely.
	New income and economic opportunities can be created by rural diversification (farm shops e.g. Bradshaws Butchers Cannock Chase, accommodation e.g. farm stays – The Falcon B&B, leisure activities e.g. horse riding – Cannock Chase Trekking Centre) and tourism projects (e.g. Bronte Country or the Eden Project), but these may have environmental impacts such as increased numbers of visitors, footpath erosion, soil erosion and noise and light pollution.