Pearson Edexcel

GCSE (9-1) Geography B

Knowledge Organiser

Paper 2: UK Geographical Issues

Issue 2

This guide is designed to support students on the key content of the GCSE Geography B specification for Paper 2: UK Geographical Issues. It covers

- Topic 4: The UK's evolving physical landscape
- Topic 5: The UK's evolving human landscape
- Topic 6: Geographical Investigation

It can be used to identify gaps in learning, as a personalised checklist to aid revision or as a knowledge organiser.

Paper 2: UK Geographical Issues

This is assessed by Paper 1 (90 minutes). It contains three sections. You will need to answer all of the questions in Section A and B and you can 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 also answering questions about the fieldwork of others.

Topic 4: The UK's Evolving Physical Landscape	
Specification key ideas	**Key content**
4.1 Geology and past processes have influenced the physical landscape of the UK.	The following range of processes influence the UK's physical landscapes: • **geology** – the study of the structure and substance of rocks • **past tectonic processes** – previous volcanic eruptions and tectonic uplift • **glacial processes**: erosion - **plucking** – freezing onto the surface and removing sediment - **abrasion** – embedded sediment scouring the valley floor and sides • **glacial processes**: weathering - **freeze-thaw** – water freezing into cracks in the rock, expanding and splitting the rock apart - **deposition** – sediment put down as a glacier retreats creates outwash till in the valley floor, and moraine at the snout and edges of the glacier. These processes combine to create distinctive characteristics of **upland** (areas with more resistant igneous and metamorphic rocks, creating **U-shaped valleys** and **scree slopes**) and **lowland** landscapes (areas with less resistant sedimentary rocks creating **dip slopes** and **escarpments**).
	• **Sedimentary rocks** are small, eroded particles/remains of plants and animals deposited in layers that turn into rock over time and under pressure, for example, **chalk, carboniferous limestone, clay**. • The layered structure creates lines of weakness between layers. • Sedimentary rocks consolidate over time, so younger rocks are less consolidated and therefore less resistant to weathering and erosion. • **Igneous rocks** are formed by heat, for example, cooling magma, which creates **granite**. • They are extremely resistant to erosion. • **Metamorphic rocks** are formed from existing rock changing shape and characteristics through heat and/or pressure, for example **schists** (a compressed mudstone) and **slates** (a compressed shale). • They have a layered structure and have faults which can be more readily eroded. • **Igneous and metamorphic rocks** are found in the **north and west of the UK** (Scotland and Wales) due to past tectonic processes.

	• This created upland areas such as **Cambrian Mountains and Grampian Mountains**. • Isolated areas of igneous and metamorphic rocks in the South West have created small scale landforms such as those found on Dartmoor and Bodmin Moor. • Occasionally, **harder sedimentary rocks** (for example, carboniferous limestone (formed 250-350 million years ago) also form upland such as the **Pennines**. • **Sedimentary rocks** are found in the **south and east of England such as The Fens, Norfolk Broads** and the **Somerset Levels**. • There are some hilly areas, such as the South Downs which have dip slopes (gently sloping areas following the folds of rocks) and escarpments (steep slopes, often on areas of alternating more resistant chalks and less resistant clays due to different rates of erosion).
4.2 A number of physical and human processes work together to create distinct UK landscapes.	**Upland areas** are shaped by a combination of **biological, chemical** and **physical weathering** processes, and former glacial climates. Their landscapes include: • **U-shaped valleys** caused by the movement of glaciers. They pluck rocks from the valley sides, and freeze-thaw weathering eventually provides more angular sediment which embeds into the glacier. This means that the moving glacier with embedded rocks causes the deepening of the valley floor and widening of the valley sides by abrasion. • **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 • **misfit streams** caused by post-glacial rivers. **Lowland areas** are shaped by a combination of **biological, chemical** and **physical weathering**. Warmer climates have better growing conditions, greater levels of vegetation and support more diverse ecosystems including burrowing animals. Lowland landscape features include: • **dip slopes** (gentle slopes) • **escarpments** (steep slopes) • low clay **vales.**
	Human activities are different in upland and lowland areas, and they create distinctive landscapes. • In **upland** areas (less suitable for many human activities due to climates) **settlements** are **smaller,** found in flat valley bottoms, and typically use locally sourced materials, such as slates. • The landscapes include **coniferous forestry and hill sheep pastoral farming.**. • People use these landscapes for drystone walled hill sheep farming, large-scale forestry and forest clearances, and **tourism**, such as skiing in Scotland, and climbing. • In **lowland** areas (more suitable for a wider variety of human activities) settlements formed on spring-lines of hillsides and along flatter plains. • Forestry is often **deciduous**, or **orchards**, which are used as walking and public areas. • Agriculture is usually **arable** (crops), as the climate is more temperate. This means that there is a longer thermal growing season, creating higher crop yields. T • There is also less soil erosion, more fertile land, and larger and flatter sites which mean tractors and other machinery can be used.

	• In the south and west of the UK, there is also likely to be **market gardening** due to warmer climates**.**
4.3 Distinctive coastal landscapes are influenced by geology interacting with physical processes.	**Concordant coastlines** (rock layers parallel to the coast) have a harder, more resistant outer layer protecting softer, less resistant rock inland. Once the more resistant rock is broken through the layer of less resistant rock is eroded more rapidly creating a crescent shaped **cove**. **Discordant coastlines** (alternating rock types at right angles to the coast) have different erosion rates. • This creates **headlands** (areas of harder rock sticking out into the sea) and **bays** (the area of softer rock eroded away). • As a headland erodes (due to faults and joints in the rocks becoming exposed to marine and sub-aerial processes), other landforms are created. • Faults and cracks in the rock are widened by abrasion, hydraulic action, wave pounding and solution. • These faults and cracks create **caves**, eventually breaking through the **headland** creating an **arch**, then a **stack** (as the arch collapses) and a **stump**. Harder rock and softer rock cliffs erode in different ways. • Soft rock coastlines often suffer from **mass movement** (for example, landslips/rotational slumping as seen in Holderness). • Harder rock coastlines erode by the cliff foot 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. • The cliff retreats inland leaving a flat rocky area visible at low tide which is a **wave cut platform**.
	Seasonality (different seasons have different climates/weather conditions) • In the UK **Autumn** and **Winter** are the wettest and often have the most storms, which creates low pressure systems and higher waves, leading to **more rapid coastal retreat**. **Storm frequency** (how often we have storms) • More storms create higher winds and lower pressures which then creates larger, more powerful waves which **erode the coastline more rapidly**. **Prevailing winds** (dominant wind direction) • The longer the fetch (the distance over which wind acts on the surface of the water), the more destructive the waves are. For example, in the UK, the west coast has the largest fetch with south-westerly prevailing winds. **Coastal landforms are created through a combination of marine, sub-aerial and weathering processes.** • **Marine processes** are actions caused by the sea. • **Destructive waves** are high in height, frequency and have a stronger backwash than swash. This removes both the beach material (creating narrow, steeply sloping beaches) and materials at the cliff foot increasing coastal retreat. **Sub-aerial processes** are actions occurring above sea level. • They act on the cliff face after the waves have undercut the bottom of the cliff. • They lead to mass movement (large scale movement of sediment usually downslope) for example,

	○ Rock falls (weathered areas undercut, unsupported areas collapse), ○ Slumping (after long periods of rain, rainwater seeps through soil and permeable rocks, it then meets a layer of impermeable rock and then the saturated rock slumps and slips, often in a rotational matter along a curved surface), ○ Sliding (the movement of a large amount of material along a flat surface for example, a bedding pain). • These processes have a major impact upon coastal landforms, particularly cliffs and headlands. • In addition, such movements of material are one source of beach material (in addition to riverine and offshore sources). **Weathering** is the breakdown of rocks on or near the surface. It can be: • **mechanical** – freeze-thaw splitting the rock apart • **chemical** – salt corrosion and acid rain solution on limestone cliffs • **biological** – plants and burrowing animals and nesting birds weaken clifftops and cliff-faces. These processes combine to have an impact on the shape of cliff faces in particular. This again creates a source of beach material (in addition to the riverine and offshore sources).
	Transportation (the movement of material by solution, suspension, saltation and traction) and deposition (the putting down of material) help to create coastal landscapes.. For example, **longshore drift** transports sediment along the beach in a zig-zag movement due to prevailing winds and wave action, the swash pushes sediment up the beach at an angel and the backwash drags sediment back down the beach at a right angels. This transportation continues until sediment is deposited on the seabed due to a change in the direction of the coast. Gradually sediment builds up to forms a spit, a bar across an estuary with a lagoon, or a tombolo connecting to an island. **Deposition** • 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. **Fieldwork link** • Coastal processes can be investigated through measuring beach profiles. A beach profile is a cross section of the beach measured from the sea to the cliff base/land which helps you investigate the beach's morphology (shape). • A narrow, steeply sloping beach is likely to be experiencing destructive waves. • A wider, gently sloping beach is likely to be experiencing constructive waves (or beach replenishment – adding sediment).
4.4 Distinctive coastal landscapes are modified by human activity interacting with physical processes. (5)	• Millions of people and jobs are dependent on the UK coastline. • Important infrastructure (roads and railways, oil refineries, chemical plants and ports) is located there. • The coastline is often defended (**direct effect**) due to their importance. • In addition, construction removes sand and gravel from the coastal zone (dredging) thus causing change in the sediment budget, which then causes erosion later or further downdrift (**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 agricultural areas are often left as part of managed retreat or are in areas of 'do nothing'.

	Human and physical processes cause change at the coast. **Case study: Dorset 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. • 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 preserve the beach and protect the town. • **Durlston Bay** (World Heritage Coastline) has landslides and rockfalls occurring on its unstable cliffs containing fossil beds. **North of Swanage to Ballard Point and The Foreland** the beach gives way to scenic limestone cliffs, which contain a range of important habitats. This area is not managed. •
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 affecting millions of UK residents and workers. In addition, there are large scale changes to coastal habitats
	Coastal management (attempting to control coastal processes/reduce coastal retreat) has both costs (-) and benefits (+). We now consider larger stretches of coastline, the people and businesses affected (stakeholders) and deciding which areas to protect and how. This is **Integrated Coastal Zone Management (ICZM)**. Local areas and the Environment Agency carry out a cost-benefit analysis (looking at the economic cost, social impacts and environmental impacts against the benefits of protection). Some areas are protected by **hard engineering** (deflecting or absorbing energy by creating barriers). Examples include: • sea walls -£6,000/m • maintaining beaches by building groynes -£1,000/m • fences to trap sediment moved by longshore drift. These methods are long-lasting but expensive). Other areas are protected by **soft engineering** (which works with natural processes). Examples include: • beach replenishment – rebuilding the beaches as a natural defence • slope stabilisation – holding the cliff in place with planting/meshing. These methods need to be continually repeated The combination of management methods in a location can be categorised in two ways: 1 areas of ‘do nothing’, where land is not protected. 2 Areas of ‘strategic realignment’, where some parts of the coast are allowed to flood, creating new wetlands, in order to target management into other areas of the coastline which are protected. **Fieldwork Link** Coastal management can be investigated through qualitative (judgements) and quantitative (numbers) techniques.

	• Bipolar analysis of each coastal management method. • Sediment analysis (size and location can help you investigate if management is effective). • Cost-benefit analyses (the cost vs. value of land/business protected). • Groyne measurements (measuring the height of sediment on either side of each groyne to assess how much is being trapped). • Secondary research using geology maps and historical OS maps to measure speed of coastal retreat.
4.6 Distinctive river landscapes have different characteristics formed by interacting physical processes.	Rivers start at the source. In upland areas this is often a hilly/mountainous harder rock area, such as the source of the **River Severn** in **Plynlimon** with 250mm/yr. precipitation and high run-off. 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) and mass movement (soil creep – individual particles of soil move slowly down slope due to gravity and slumping). • Erosional processes (abrasion, attrition, hydraulic action and solution) dominate, creating narrow, shallow channels. • Vertical erosion creates V-shaped valleys following a path of less resistance as the river cuts through the bedrock. • Over time, due to lower energy, this young river is often unable to cut through areas of greater resistance, so the river re-routes and curls around them creating interlocking spurs (overlapping ridges extending into the river valley). • There are waterfalls and gorges in the upper course too (**River Severn Waterfall – The Severn Breaks Its Neck**). • The discharge (the amount of water moving through the river) is low, velocity (speed) is low and sediment is large and angular. The Mid-Course: • Here the slope angle reduces (**River Severn – Shrewsbury's meanders**). • The river is wider and deeper. • As well as vertical erosion, lateral (sidewards) erosion also occurs. Deposition happens on the insides of meanders and on the floodplain. The sediment is smaller and more rounded. More tributaries join the river (**River Severn – Ashbrook after Carding Mill Valley**), so the discharge and speed increases. The Lower Course: • 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 riverbed and banks so the velocity is fastest. • Major tributaries add to the discharge (**River Avon into the Severn**). • 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 split it apart over time) • **abrasion** (the wearing away the rocks by friction) • **attrition** (stones bang into each other and break into smaller pieces) • **solution** (chemical dissolving of the rock)

Transportation processes

- **traction** (larger stones roll along the riverbed)
- **saltation** (smaller stones bounce along)
- **suspension** (small particles are carried along in the river)
- **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.

Upper Course

V-shaped valleys and interlocking spurs

- Vertical erosion occurs in the upper course creating a small river.
- The sides of the valley are eroded causing mass movement and soil creep in on the valley sides, creating a V-shape.
- Over time, due to lower energy, meandering streams cut downwards to create meandering valleys. This process is sometimes magnified by variations in rock resistance.
- The river re-routes and curls around them creating interlocking spurs (overlapping ridges extending into the river valley).

Waterfalls

- Harder rock overlays softer rock, which is eroded more rapidly by abrasion, hydraulic action and solution.
- Over time, this continues and a deep plunge pool forms, undercutting the harder rock overhang.
- This is unsupported and collapses, adding debris, speeding up erosion and causing the waterfall to retreat upstream, creating a gorge.

Mid and Lower Course

Meanders (bends in the river) and **oxbow lakes**

- The river flows from side-to-side eroding areas of weakness.
- The fastest flowing water hits the outside of the bend, causing undercutting and an outer steep bank called a river cliff.
- On the inside of the bend, the river flows more slowly, depositing material creating a gently sloping bank called a slip-off slope.
- Over time, the outside of the meander erodes further. The neck of the meander can break through as the river continues through the new straight channel. Deposition at the neck seals off the bend, creating a horseshoe-shaped lake called an oxbow lake.

Floodplains (the flatland either side of a river in the lower course) and **levees**

- A floodplain is formed by lateral erosion as a river winds across the valley floor.
- Each time a river meanders, material is deposited on the inside of the bend – a point bar.
- As a river meanders across a valley floor, it spreads its own deposits, creating a floodplain.
- When the river floods, it adds further material to the floodplain.
- Over time, the process repeats itself and natural banks called levees are formed.

Deltas are D-shaped areas of deposition at the mouth of a river.

- Deltas occur when a river enters another body of water, for example, an ocean, sea or lake.

	• The velocity slows and the river deposits 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.
	A **hydrograph** is a way of showing how a river responds to a rainfall event. • The rainfall is shown as a bar chart (the tallest being the peak). • The discharge is calculated by the area of the river channel (width multiplied by depth multiplied by the velocity of the river) and is shown by a line graph – the highest point being peak discharge. • The time between the peak rainfall and peak discharge is the lag time. • The rising limb is when discharge in the river increases and the falling limb is when the discharge decreases. **A flashy hydrograph** (fast occurring) will have a steep rising limb, a short lag time. It is likely to have one or more of the following: • heavy rainfall (precipitation is faster than infiltration) and/or sudden snow melt • impermeable rocks • a 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 and/or frozen ground. **A less flashy hydrograph** shape will have a low rising limb, a long lag time and a gentle falling limb. It is likely to have one or more of the following: • small amounts of gentle rainfall/gradual snow melt • permeable rocks • an 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.
	Physical and human processes interact to cause flooding. **Case study: River Severn** • The River Severn has many settlements along its course (for example, Shrewsbury and Tewkesbury), many of which regularly suffer flooding. This impact has increased as populations and building on the floodplain grows. **High rainfall** • Double the usual June and July rainfall in July 2007 (with 140mm on 20th July). • May-July was the wettest since 1766. • The soils became saturated creating surface runoff.

	Urbanisation • Increased urbanisation in the West Midlands increased drainage and surface runoff (due to impermeable surfaces). **Lack of defences** • There was a lack of adequate defences to deal with the volume of water. **River** • At Tewkesbury, the River Severn and River Avon meet at a confluence. • The large catchments of each led to flooding. **Impact** • Tewkesbury Abbey flooded for the first time in 250 years: 3 died, 48,000 homes were flooded, and there were £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 increased **storm frequency** (climate change), **land-use change** (building on floodplains, deforestation of slopes and cultivation of land) this is leading to increased threats to people and environment.
	There are costs (-) and benefits (+) of managing flood risk. **Hard engineering** **Flood walls** (artificial barriers raising the riverbank to increase the capacity of the river) • Prevent water from spreading into small-scale areas (for example, settlements/housing). • They are expensive, do not look natural and limit river access. • They move water quickly past an area, but they can also cause flooding downstream **Embankments** (high banks built on or near riverbanks to increase the capacity of the river) • They are inexpensive but they can be overtopped, therefore trapping flood water for longer and can burst under pressure. • They are successful in stopping the spread in small areas (for example, settlements). • They can be made more environmentally-friendly with earth and grass. **Flood barriers** (temporary structures installed when needed) • They are cheap. • They are used in scenic areas (for example, Ironbridge). • They are only in one location. • There's a risk of not installing in time, or overtopping/buckling at highest levels (for example, Ironbridge in 2020). **Soft engineering/sustainable management** **Floodplain retention** (strategies to maintain and restore a river's original floodplain) • They are cheaper than harder engineering methods. • This allows the river to flood, which slows down water and adds sediment to the floodplain.

	• This restores the soil structure and, like a sponge, makes the floodplain better at retaining and storing water, which reduces flooding downstream. • 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 cheaper than harder engineering methods. • 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.

Topic 5: The UK's Evolving Human Landscape	
Specification key ideas	**Key content**
5.1 Population, economic activities and settlements are key elements of the human landscape.	There are differences between urban core (built up – for example, South East England/) and rural periphery (countryside – for example, Scottish Highlands). **Urban core characteristics** are: • high population density • economically active single young people • economic activities – retail, offices and headquarters • a large number and variety of jobs • cultural centre with libraries • museums and theatres • infrastructural hubs (for example, train stations) • settlement type – conurbation, city, large town • high and low-rise buildings • higher property prices. **Rural periphery characteristics** are: • low population density • ageing population • 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 buildings • cheaper land prices, although some large houses and barn conversions can be high in price. **UK and former 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). Examples of interventions to reduce the differences between rural and urban areas are listed below. • 18 new zones were approved in 2015 in both rural and deindustrialised urban areas. • Investment in transport infrastructure (for example, 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). For example, projects in Cornwall (which receives support as it's GDP is below 75% of the EU average) have improved broadband speeds to enable people to work from home or local offices). • Post-Brexit, EU funds have stopped and the UK government has started to create policies linking to 'build back better', 'build back greener' and 'levelling up' – all aimed at improving more deprived and isolated areas by investing in green sector jobs and improving infrastructure and development projects. It is too early to tell if these policies are effective.
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 population geography in terms of numbers, distribution and age structure of different parts of the country. • UK (visa/entrance criteria) and former membership of the EU (Freedom of Movement between EU countries, a right common to all citizens of

	Europe) policies have led to increasing ethnic and cultural diversity across the country. • With the UK leaving the European Union (Brexit), many EU nationals have either taken citizenship or chosen to return to Europe. Post-Brexit, the UK has been able to prioritise highly skilled migrants from around the world, rather than prioritising Europe citizens first. **National migration patterns** – **retirement migration** to Devon, Dorset and Cornwall • Retirees are attracted due to the pull factors (scenery, warmer climate, slower pace of life, low crime). • 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. This reduces the number of economically active adults and children, therefore creating an ageing population. • Positively, the grey pound is creating demand for services such as care, specialist shops and social activities, which is therefore creating jobs. • Many retirees also volunteer in the local community. **Rural-urban migration** • Young adults leave the countryside (for example, Mid Wales) in search of further education and jobs in cities (for example, Birmingham). This is due to a lack of well-paid job opportunities and services in the countryside. • 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 (this was initially dominated by Caribbean migrants, followed later by migrants from India, Pakistan and Bangladesh) for transport, textile and steel industries. • Many migrant workers 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 (from different global regions but especially the Indian sub-continent) moved directly to northern towns such as Bradford. **EU Accession of 8, 2004** • Young Eastern European migrants (mainly from Poland, Latvia and Estonia) moved to cities, especially London, 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** • Between 2012 and 2015, people fled Syria and Afghanistan due to war. Refugees in the UK mainly migrated to cities, such as Birmingham.

	• Most international migrants settle in and around cities for work, greater transport infrastructure/connections (airports/railways) and greater community, cultural and religious links. • Migrants often provide cheap or unskilled labour (for example, 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 also helping rural services to survive by increasing numbers). • Migrants would often introduce their cultures (cuisine, music, language and religion) which adds to our multicultural societies. • However, tensions can occur between existing residents and 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 often cheaper to import goods and products than extract them/make them here) and global shift in manufacturing (for example, 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 changes have altered economic and employment structures across the UK. There has been a large shift from secondary work to tertiary jobs. Many of these tertiary jobs are less well paid than the previous specialist manufacturing jobs. In addition, many of these newer jobs are often part time, short term and temporary (for example, health care work with many vacancies filled by females). The additional higher-skilled tertiary jobs are often a skills mismatch for the former industrial employees (for example, banking/finance/computing requiring further education and training). **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 fell from 40% to 10% of all employment (1971-2011). • It had the **highest unemployment** rates of 8% in 2013. • **Child poverty** rates increased (currently 40% in Middlesbrough). • 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** (for example, fruit in Kent). • The secondary sector (**light industry**, such as electronics and engineering) is increasing in some urban areas of the South East (for example, along the M4 corridor). • 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** for example, Green Park Reading. The South East is attracting **new industries** due to its **accessibility** and **infrastructure** for example, airports, ports, road and rail links. In addition, it has a large market for goods due to it's more affluent consumers. It has a highly skilled **labour** force (due to prestigious universities in the area such as Oxford, Cambridge and London universities). The final two factors making the South East attractive to new industries and investment are **political** factors (close to decision making) and geographical proximity to the large 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) and the role of TNCs (transnational corporations – companies with activities in more than one country) in the UK economy. FDI is investment in physical capital by companies based in other countries, often by take overs (for example, Kraft taking over Cadbury's and CD&R taking over Morrison's). **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. • Global players like TNCs influences 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 the French energy provider EDF), 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. For example, Unilever (a British-Dutch company). • Efficiencies in the international production chain can lead to job losses in the UK. **Free trade** • International trade in goods and services including 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 came from the EU, mainly in energy projects and infrastructure. • In the future, this is likely to change due to Brexit. • This is because Europe will be less of a focus trade as the government shifts its links to other areas of the world, for example joining the growing Asia-Pacific trade bloc. **Transnational corporations** • Large firm which owns or controls productive operations in more than one country through FDI.

	• They affect the UK economy by opening and closing branches, regional headquarters and using supplier industries (for example, Nestle).
5.3 The context of the city influences its functions and structure.	**Case study: Birmingham** • Birmingham was 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 in Wales. • It grew and developed due its location at the heart of the **canal**, **road** and **rail** networks and its international airport (>150 international connections). • The city developed the fastest during the **Industrial Revolution** as the 'city of 1001 **trades'**. • It was famous for jewellery, guns and brass. • Birmingham is a **regional hub** for transport and manufacturing and is a major **conference** location (NEC), **shopping** (Bullring and Grand Central), **sports** (Edgbaston, Villa Park) and **business** tourism venues (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 banks (Deutsche Post, HSBC, Barclays), the G8 Conference and **Birmingham Universities**.
	CBD • 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** • Some redevelopment (Brindley Place – canal side) and some **derelict factories** due to **deindustrialisation** and **decentralisation**. • Any remaining buildings are from the late 1800s and were terraced housing, back to backs and factories (Digbeth). **Suburbs** • Vary throughout the city from the more affluent outer suburbs Sutton Coldfield (high cost, low density, large open spaces, such as Sutton Park) to less affluent inner suburbs of Washwood Heath (inter-war housing, some gated parks). • The **rural-urban fringe** is protected by a greenbelt and has some villages, such as Shenstone.
5.4 The city changes through employment, services and the movement of people.	**Case study: Birmingham** • National and international migration influence growth and character in 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 Alum 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 roles. • Higher incomes and newer/improved housing stock, leisure services and large parks leads to improved health. There is good quality education including private schooling. • Inner city areas such as Washwood Heath have lower employment levels, higher 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 and mechanisation and robotisation 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 city centre 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 (for example, the i54 park which has JLR's new engine manufacturing plant).
	• Parts of the city have experienced **economic and population growth** (for example, 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 (for example, 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 led to a loss of jobs, causing a spiral of decline. Lower house prices led to more affluent residents moving in, renovating houses and changing the traditional pubs 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, 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 impact on the people. • The BeBirmingham campaign led to an increase in visitors to the city. • This, followed by the creation of the new 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 priced out of many inner-city apartments (£1 million in the Rotunda) and new jobs being created are not 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 for street cleaning, which was not acceptable for the second largest city of the UK. • Areas of former industries such as Fort Dunlop have been **redeveloped** to retain the outer shell (reducing building materials and construction) and installed energy saving and sustainable heating with companies located 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** (part of the Big City Plan). • **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. These 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 improving the 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 growth of urban populations, many surrounded by greenbelt protected areas means that many surrounding accessible rural areas provide **space** for: • decentralised industry and shopping (such as the i54 Jaguar Land Rover engine plant in Staffordshire and the McArthur Glen Outlet in Cannock) • transport services (such as ring roads and 4 major motorways) • affordable **housing** for its growing number of 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 (for example, schools). They can also increase congestion and air pollution and put a strain on services. Areas of **recreation and countryside** (for example, Chasewater and Cannock Chase) became overcrowded but they can also be supported by increased parking charges. The rural areas provide **water** (for example, Severn Trent Reservoirs) and **goods** (for example, meat and vegetables through farmers markets) benefiting sellers in rural areas and residents in urban areas.
	Rural areas of Warwickshire have experienced **economic change and social changes** due to its links with Birmingham and 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, flexi homeworking contracts and improved telecommunications). This has put **pressure on local housing stock**, increasing competition and prices in commuter villages like Henley-In-Arden. It was originally a medieval town based on farming but today it is a commuter village. The commuters have changed the age of the population to 40-60 (as these are workers who earn enough to buy property in this increasingly expensive area). Many **locals are priced out** as prices increase by 7% a year. This increasingly affluent commuter group have led to a **change in 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 **availability** (not enough) and **affordability** (too expensive) of **housing**. For example, in areas such as National Parks, building is restricted which means that there are only a limited number of homes available. This increases house prices as there is increased demand from the next generation, **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 would either have to move to cities or **diversify** their existing work. • The remaining jobs 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 close** as classes and patients shrink. • This also 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 (for example, Bradshaw's Butchers Cannock Chase) Accommodation (for example, farm stays – The Falcon B&B) • Leisure activities (for example, horse riding – Cannock Chase Trekking Centre) • **Tourism projects** (for example, 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.

Topic 6: Geographical Investigations	
Specification key ideas	**Key content**
1. Formulating enquiry questions Create a hypothesis (a statement to be tested) or a question. Break it into smaller sub-questions or hypotheses. A good question links theory/ideas covered in lessons to the exact location. It investigates a specific processes and allows decisions to be made.	**EITHER COASTS:** Investigate the impact of coastal management on coastal processes and communities. **For example:** How does management of the beach at Dawlish Warren affect coastal processes and people? Sub question: Do the groynes at Dawlish Warren affect changes in sediment size and shape further along the beach?
	OR RIVERS: Investigating how and why drainage basin and channel characteristics influence flood risk for people and property along a river in the UK. **For example:** How and why do the drainage basin and channel characteristics of Ashbrook influence the flood risk for people and property? Sub question: Does the channel width and depth increase downstream?
	EITHER URBAN: Investigate how and why quality of life varies within urban areas. **For example:** How and why does the quality of life vary in Birmingham's central area? Sub question: Why do areas nearer the city centre have a greater number and variety of services?
	OR RURAL: Investigating how and why deprivation varies within rural areas in the UK. **For example:** How and why does quality of life vary through Ashbourne? Sub question: Do all areas of Ashbourne have the same building quality?
2. Selecting fieldwork methods (Primary data) **Quantitative** (numbers) and **qualitative** (descriptive) data. Sampling: **Random**– collected by chance, to reduce bias; **systematic** – sites at equal intervals, shows change over distance; **stratified** – collecting data from significantly different locations/groups. for example, areas of a town/city. *Good data collection: **appropriate sampling**, **large enough sample size, collected**	**EITHER COASTS:** Investigate the impact of coastal management on coastal processes and communities. • **One quantitative**, measuring how coastal management has affected beach morphology and sediment characteristics. **For example:** Sediment samples – 10 particles from a quadrat (random) at each site 5m east of the end of each groyne at the high tide mark. Measure longest axis and match to Power's Scale of Roundness. (Presentation: proportional symbols) • **One qualitative** collection of data on coastal management measures and their success. **For example:** Bipolar analysis of human impact (+2 to -1 for example, ugliness) completed for each method (strategic). Average student score reduces bias. (Presentation: bipolar graph)
	OR RIVERS: Investigating how and why drainage basin and channel characteristics influence flood risk for people and property along a river in the UK. • **One quantitative**, measuring changes in river channel characteristics. **For example:** width (tape measure at a right angle to riverbank) and depth (meter rule at right angle to riverbed) taken at 200m intervals downstream (systematic). (Presentation: river profiles) • **One qualitative** collecting data on factors influencing flood risk.

accurately, so results are **reliable**. *Good data presentation: **change over distance / time**, **clear key, located**. *Good analysis **describes** (TEA), **compares** and **explains** evidence and **links** to question.	**For example:** questionnaire of flood risk. 20 local questionnaires about past flooding and its impacts, including map to show floods in living memory. (Presentation: pie charts and bar charts.)
	EITHER URBAN: Investigate how and why quality of life varies within urban areas. • **One qualitative**, collecting data on views and perceptions of quality of life. **For example:** 20 local questionnaires about quality of life in the areas visited. (Presentation: bar chart) • **One quantitative** collecting data on environmental quality. **For example:** Two minutes of traffic counts at each site showing noise and air pollution. (Presentation: proportional flow arrows)
	OR RURAL: Investigating how and why deprivation varies within rural areas in the UK. • **One qualitative**, collecting data on the views and perceptions on quality life. **For example:** 20 resident questionnaires on quality of life in Ashbourne. (Presentation: pie charts and bar charts) • **One quantitative**, collecting data on environmental quality. **For example**, two minutes of traffic counts throughout Ashbourne during a Bank Holiday, showing the impact of visitors, indicating noise and air pollution. (Presentation: proportional flow arrows)
3. Secondary data sources We also collected secondary information (data already published). *Issues with secondary sources to consider include: **accuracy** (who collected it?), **reliability** (how reliable is it?), **timeliness** (when was it recorded?), **significance** (what scale is it on?)	**EITHER COASTS:** Investigate the impact of coastal management on coastal processes and communities. • A geology map (for example, **Geology of Britain viewer**) shows areas of more and less resistance/rock type. Allows the investigation of the impact of geology/hardness on landforms created. • One other source (for example, using **Digi maps** to investigate past OS maps of the area). This can help in calculating the speed of erosion along a stretch of coastline.
	OR RIVERS: Investigating how and why drainage basin and channel characteristics influence flood risk for people and property along a river in the UK. • A flood risk map (for example, **Environmental Agency Flood Risk** map) shows flood risk and shows areas of management, which may be invisible on the ground (for example, removable floodwalls). • One other source chosen by the centre: **Digi maps** – historic OS maps showing past land use.
	EITHER URBAN: Investigate how and why quality of life varies within urban areas • Census data (for example, Office for National Statistics (ONS) Neighbourhood Statistics Census and IMD – ward level data to analyse the levels of deprivation) • One other source chosen by the centre: **Crime statistics** from police.uk
	OR RURAL: Investigating how and why deprivation varies within rural areas in the UK. • Census data and IMD (for example, Office for National Statistics (ONS) Neighbourhood Statistics)

	• One other source chosen by the centre: **Digi maps** – former OS maps to show changes in land use and industry over time to indicate growth/decline.