

**GEOGRAPHY**

**REVISION**

**NOTES**

**FOR EDEXCEL B GCSE (9-1)**  
**SIMPLE, CLEAR & MEMORABLE**

**PAPER 2**

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## Topic 4

### 4 THE UK'S EVOLVING PHYSICAL LANDSCAPE

#### 4.1 Geology and past processes have influenced the physical landscape of the UK

- The role of geology:
  - skeletons fell in rows of strata and compacted those beneath into rock
  - calcium carbonate crystallised around the fragments and cemented them together
- Past tectonic processes:
  - the UK was once under tropical seas until the plate on which it sits shifted away from the tropics
  - during uplift by convection currents, some rocks snapped to form faults and fault scarps
- Past glacial processes:
  - moving glaciers eroded valleys by widening and deepening them through glacial abrasion to create U-shaped valleys
  - moving glaciers transported and deposited erratics (large boulders) elsewhere
  - melting glaciers raised sea levels, flooding river valleys to create estuaries and lochs

Rock	Characteristics	Age/Distribution
Sedimentary		
clay	- weak and crumbly	- younger rocks - lowland areas - below Tees-Exe line
chalk	- porous - medium resistance	
carboniferous limestone	- permeable - resistant	
Igneous		
granite	- very resistant - contains crystals of quartz	- older rocks - upland areas - above Tees-Exe line
Metamorphic		
slate	- very resistant	- oldest rocks - upland areas - above Tees-Exe line
schist	- very resistant	

## 4.2 A number of physical and human processes work together to create distinct UK landscapes

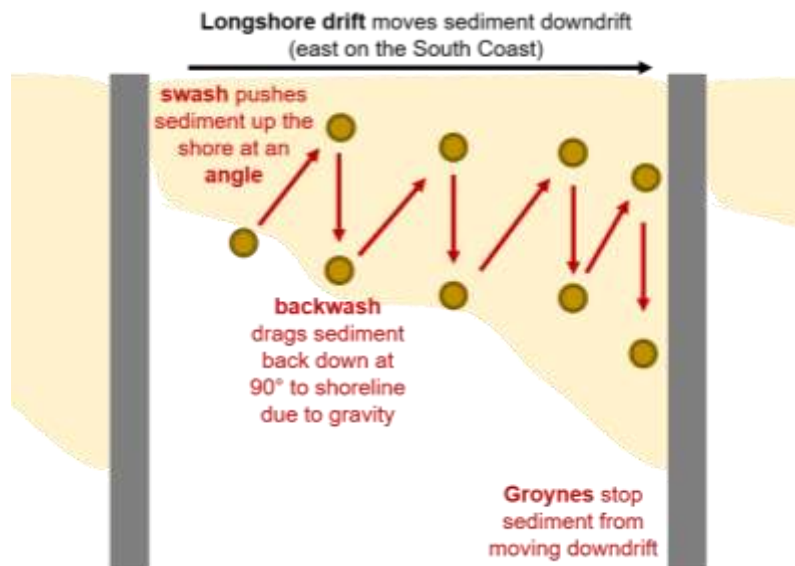
- Physical processes: Highland (e.g. Lake District)
- Weathering:
  - freeze-thaw weathering: water gets into cracks in rocks, freezes and expands so the rock collapses into scree (angular pieces)
- Post-glacial river processes:
  - glaciers created deep U-shaped valleys
  - relatively small rivers (misfits) flow in the valley bottom and deposit alluvium which makes them fertile for farming
- Post-glacial slope processes:
  - **rockfalls** of scree
  - **landslides** due to saturated rock
- Physical processes: Lowland (e.g. The Weald)
- Weathering:
  - chemical weathering (acid rain on alkaline chalk)
  - biological weathering (tree and shrub roots break up rock)
- Slope processes:
  - soil creep caused by rain dislodging soil particles.
- Post-glacial processes:
  - chalk froze and became impermeable so rivers and valleys formed
  - when the ice melted water sank through the chalk to form dry valleys
- Human activity
- Village of Ae:
  - **Agriculture:** none
  - **Forestry:** afforestation for WW1 Forestry Commission (1919), hedges
  - **Settlements:** forest workers used wood and rocks to build
  - **Impact:** new woodlands
- The Yorkshire Dales:
  - **Agriculture:** pastoral farming (highland)
  - **Forestry:** none
  - **Settlements:** Norse farmers used limestone and dry stone (800AD)
  - **Impact:** improved land for farming
- East Anglia:
  - **Agriculture:** arable farming (lowland)
  - **Forestry:** planted hedges and dug ditches
  - **Settlements:** European Angles used flint from chalk to build
  - **Impact:** some wind erosion due to ditches

## Topic 4

### 4.3 Distinctive coastal landscapes are influenced by geology interacting with physical processes

- The coastal zone is the changing boundary between land and sea.
- Weaknesses in rocks are:
  - **joints** (small vertical cracks)
  - **faults** (larger cracks caused by past tectonic movement)
- Geological structure
- **Concordant coasts:**
  - strata are parallel to the coastline
  - the same rock meets the wave front across the length of the coast
  - rates of erosion are similar across the coastline
  - bays form here
- **Discordant coasts:**
  - strata are perpendicular to the coastline
  - different rocks meet the wave front
  - rates of erosion differ across the coastline
  - headlands form here
- **Joints/faults** (headland to stump):
  - hydraulic action and abrasion open crack and it becomes a cave
  - further erosion enlarges cave
  - cave breaks through headland forming an arch
  - arch is eroded and collapses into a stack separate from headland
  - stack is eroded into stump
- Geology
- Formation of cliff:
  - resistant layer of limestone runs along concordant coast
  - erosion creates widened gap through the limestone
  - waves erode the sands/clays to form a cove
  - waves reach the more resistant chalk (erosion slows down)
  - steep chalk cliff forms
- Formation of wave-cut platform:
  - wave power is concentrated at cliff base
  - **hydraulic action, abrasion** and **solution** form a wave-cut notch
  - as the notch grows, a cliff overhang develops
  - the overhang collapses, depositing debris at cliff base
  - debris is eroded by **attrition** to form a **wave-cut platform**, a flat rocky area left behind when waves erode a cliff away
  - the cycle restarts

- Factors affecting the rate of coastal erosion
  - Climate:
    - seasonality
    - storm frequency
    - prevailing winds from SW (strength, fetch)
  - Marine processes:
    - **constructive waves** (summer):
      - spilling waves; long wavelengths; low amplitudes
      - strong swash (sand transported up the beach)
      - slow backwash (sand is deposited up the beach)
      - deposited sand forms a beach berm
      - creates a gentle beach profile
    - **destructive waves** (winter):
      - **plunging waves**; short wavelengths; high amplitudes
      - strong backwash (erodes beach)
      - rip current (drags sand into sea)
      - sand is deposited at an offshore bar
      - creates a steep beach profile
  - Sub-aerial processes:
    - mass movement:
      - heavy rain saturates permeable rock
      - rotational slip occurs
    - weathering:
      - weathering weakens cliff face
      - physical (freeze-thaw), chemical (solution), biological (plant roots)
  - Sediment transportation:
    - **longshore drift** transports sediment along coastline to form beaches
    - diagonal swash, vertical backwash
    - reaches **river estuary** where sediment is deposited as a long neck (**spit**)
    - at high tide the spit is eroded inwards forming a **recurved end**
    - **salt marshes** (salt-tolerant vegetation) grow behind the spit



## Topic 4

### 4.4 Distinctive coastal landscapes are modified by human activity interacting with physical processes

- Development:
  - housing → more crowded coasts
  - office development → more crowded coasts
- Agriculture:
  - coastal land is cheaper → flooding by saltwater threatens pastures
- Industry:
  - Norfolk gas terminal → visual pollution
  - Severn estuary → visual/air pollution
  - Thames estuary → visual/air pollution
- Coastal management:
  - groynes → terminal groyne syndrome/beach shrinks
  - engineering → visual pollution
- Christchurch Bay:
  - Hengistbury Head protects Christchurch and Highcliffe from strong prevailing winds from the south west and erosion is limited.
  - Barton-on-Sea is not protected and erosion is rapid.
  - Hard engineering at Barton-on-Sea included:
    - groynes → useless
    - cliff drainage systems → rotational slips still occur
    - revetments → useless
    - rock armour (limestone boulders) → useless
    - vegetation on cliff-face → rotational slips still occur
  - The problems are:
    - groynes at Bournemouth increased erosion downstream by stopping longshore drift.
    - inland water seepage
  - There is lots of scree at Barton-on-Sea suggesting there is still weathering.



**4.5 The interaction of human and physical processes present challenges along coastlines and there are a variety of management options**

- Effects of climate change on coastal flooding:
  - increased frequency of storms
  - melting glaciers, rising sea levels (more frequent flooding, permanent flooding)
  - low pressure brings storm surges (more flooding)
  - more marine erosion and deposition
  - deposited sediment (beaches, spits, bars etc.) is submerged faster

- Hard engineering:

Type of defence	Cost/m	Benefits	Problems	Conflicting views
Groynes	£2000	- larger beach dissipates more wave energy	- may increase erosion downdrift	- landowners downdrift: fear rate of erosion may increase - environmentalists: habitats may be destroyed - locals: want protection
Sea wall	£2000 to £5000	- reflects waves back out to sea	- restricts beach access - suffers from wave scour (waves attack wall foundations)	- council: expensive - inland residents: fear taxes will rise - fishermen: fear access will be restricted

- Soft engineering:

Type of defence	Cost/m	Benefits	Problems	Conflicting views
Beach nourishment	£500 to £1000	- increased beach size - dissipates more wave energy	- sand is eroded - process must be repeated	- council: repetitive - environmentalist: changing habitats
Slope stabilisation	£1000 to £4000	- in-cliff drainage prevents rock saturation and slips	- can be difficult with discordant coasts	- inland residents: fear taxes may rise - locals: want protection

- Sustainable approaches

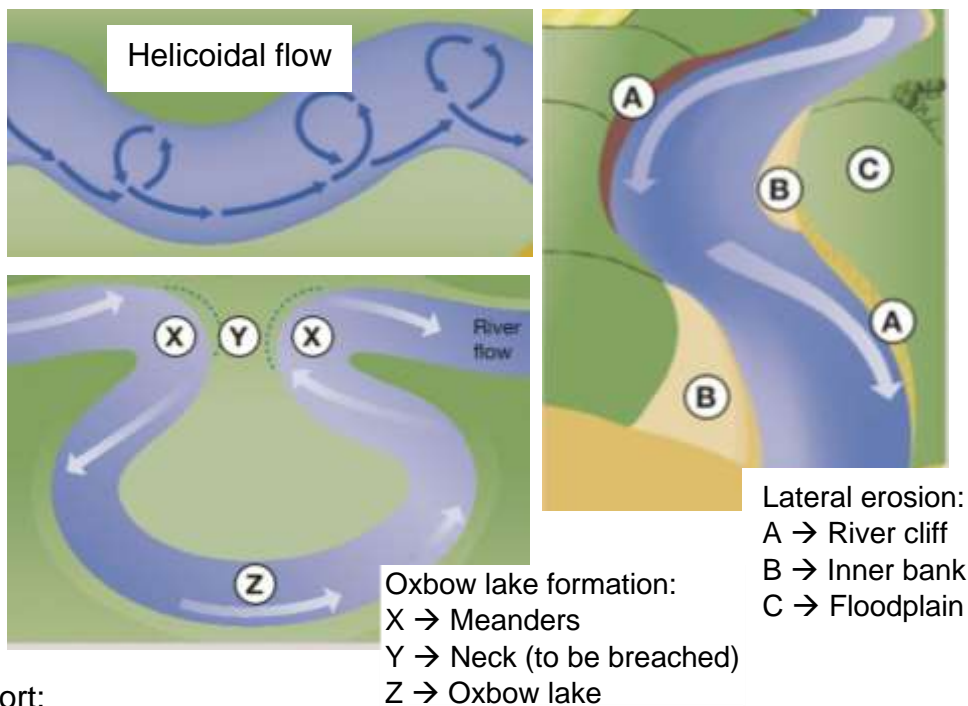
Type of defence	Cost/m	Benefits	Problems	Conflicting views
Do nothing	N/A	- natural	- important places, e.g. gas terminal, eroded	- businesses: want protection - inland residents: don't want to pay taxes
Strategic realignment	N/A	- salt marshes for diverse ecosystems	- compensation paid to landowners	- council: cheaper - environmentalists: provides natural habitats

- Integrated Coastal Zone Management (ICZM) is a type of holistic management, where a **Shoreline Management Plan (SMP)** is drawn and all stakeholders are considered.

## Topic 4

### 4.6 Distinctive river landscapes have different characteristics formed by interacting physical processes

River Tees	Upper course	Middle course	Lower course
Landscape features	- interlocking spurs - rock outcrops/scree - mass movement	- helicoidal flow - flood plains - meanders - oxbow lakes	- wider flood plains - estuaries - levées - mudflats, salt marshes - deltas
Channel shape	narrow	wider	very wide
Valley profile	V-shaped	U-shaped (weathered)	very U-shaped
Gradient	steep	gentler	gentlest
Discharge	low	higher	highest
Velocity	slow	faster	fastest
Sediment size/shape	large, angular	smaller, more rounded	small, round

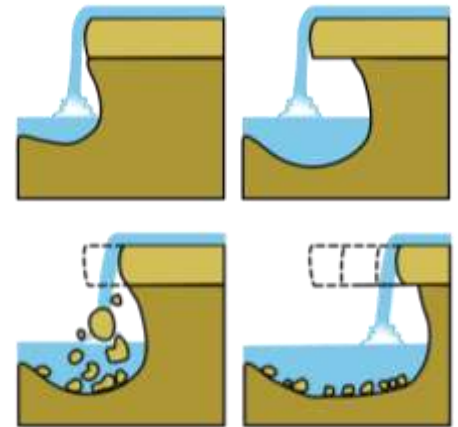


- Transport:
  - **solution:** dissolved chemicals
  - **suspension:** tiny particles dispersed in water
  - **saltation:** small stones bounced along bed (skipping motion)
  - **traction:** large stones dragged by force
- River erosion:
  - **hydraulic action:** fast-flowing water forced into cracks in bank
  - **abrasion:** stones wear away river bed
  - **attrition:** stones wear each other away by contact
  - **solution:** alkaline rocks dissolved by acidic rainwater

- Long profile shows changes in river gradient.
- Cross profile shows changes in valley shape.
- Interlocking spurs formation:
  - river cuts through valley
  - it bends around more resistant rock
- Meander formation:
  - abrasion takes place closer to the outside of the bend
  - this happens because this is the fastest-flowing part of the channel
  - the slowest-flowing water is on the inside of the bend
  - so deposition occurs there



- Waterfall formation:
  - river crosses bed of resistant rock
  - river undercuts less resistant rock underneath
  - plunge pool forms
  - overhang collapses due to further erosion
  - gorge forms

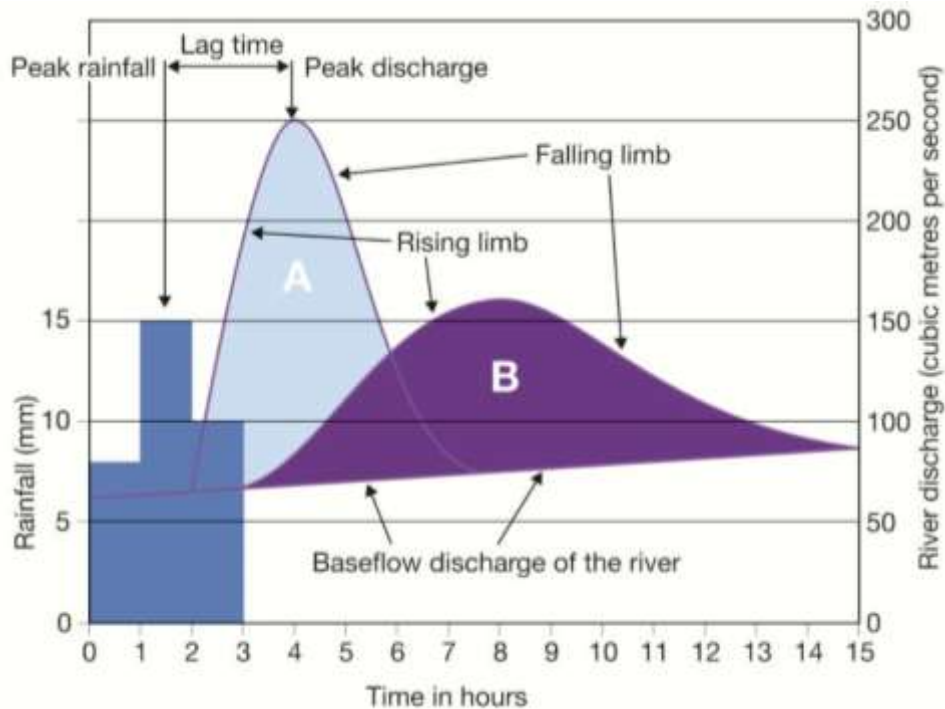


- Levée formation (natural):
  - a river reaches its bankfull (before flooding)
  - it deposits sand and clay where the flow is slower
  - the sediment builds up beside the river as a bank
- Delta formation:
  - a river deposits sediment at its mouth faster than it is removed
  - arcuate: splits/arches many times into sea
  - cusate: arrow-like structure
  - bird's foot: splits/juts many times into sea
- Factors affecting river landscapes:
  - Climate:
    - in wet weather more load is carried
    - this means more vertical erosion is done
  - Geology:
    - resistant rock forms steep valley sides
    - weathering causes scree to pile up
  - Slope processes:
    - scree from valley sides is moved downslope
    - rapid (e.g. landslide) or slow (e.g. soil creep)
- Physical factors affecting storm hydrographs:
- Lag time is decreased by:
  - impermeable geology (surface runoff)
  - steep slope (faster surface runoff)
  - wet antecedent conditions (saturated soil)
  - circular drainage basin (takes longer to trunk stream)

## Topic 4

### 4.7 River landscapes are influenced by human activity interacting with physical processes

- A **storm hydrograph** is a graph which shows how a river's discharge changes as a result of rainfall.
- Baseflow discharge is the normal river discharge due to groundwater flow.



- Human factors affecting storm hydrographs:
- Lag time is decreased by:
  - Urbanisation:
    - buildings have impermeable surfaces (surface runoff)
    - drain infrastructure (faster drainage)
  - Deforestation:
    - less interception by leaves (less infiltration)
    - less infiltration (faster surface runoff)
  - Land use:
    - replacing woodlands with roads or crops (less interception and infiltration)
- Infiltration is followed by either of:
  - **transpiration** by plants
  - **throughflow** (flows to river through air spaces)
  - **groundwater flow** through the **water table** (upper limit of saturated rock)

- River Don flooding, Sheffield
- Causes of the floods:
  - prolonged rain: (physical)
    - jet streams brought low pressure weather
    - 90mm on 15 June
    - 100mm on 25 June on saturated grounds
  - rivers/landscape: (physical)
    - seven hills; fast surface runoff
    - reservoirs overflowed
    - three major rivers join in Sheffield; high volume
  - urbanisation: (human)
    - impermeable surfaces on buildings; fast surface runoff
  - drain infrastructure: (human)
    - built for 1 in 30-year events, not 1 in 400-year events
    - fast surface runoff filled drains quickly

## Topic 4

### 4.8 Some rivers are more prone to flood than others and there is a variety of river management options

- Factors affecting river flooding:
  - Physical: jet streams bring more frequent, stronger storm surges
  - Human: land-use makes it necessary for water to be transported to rivers quickly
- Impacts of flooding:
  - homes/businesses flooded
  - power cuts
  - expensive repairs
  - health risks from sewage
  - drowning
- Hard engineering:

Method	Cost/m	Benefits	Problems
Flood walls	£1500	- increased capacity - can be temporary or permanent	- restricted river access - look unnatural
Embankments	£1500	- increased capacity - cheap one-off cost	- restricted river access - look unnatural
Flood barriers	£900	- increased capacity - can be temporary	- difficult installation - look unnatural

- Soft engineering:

Method	Cost/m	Benefits	Problems
Flood plain retention	£600	- stores floodwater - copes with heavy rains	- difficult to change land use in cities - restricts development
River restoration	£600	- improves ecology - more natural	- does not prevent flooding - flood plains cannot be built on

**5 THE UK'S EVOLVING HUMAN LANDSCAPE**

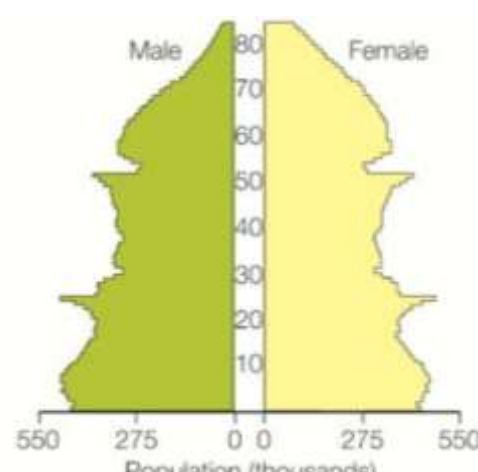
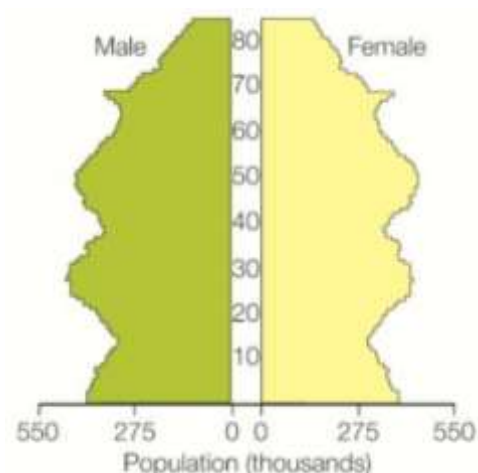
**5.1 Population, economic activities and settlements are key elements of the human landscape**

	Population density	Age structure	Economic activities	Settlement
Urban core	high	younger	tertiary/quaternary industries	- multiplier effect increases population of a city, which merges with other towns to create a conurbation
Rural periphery	low	older	primary/tertiary industries	out-migration of younger people for education/employment opportunities

- UK and EU government policies have reduced the gap between urban and rural areas by:
  - **enterprise zones:** help with start-up costs, reduced taxes, free broadband
  - **regional development grants:** help starting businesses in peripheral areas
  - **EU grants:** for areas with a GDP lower than 75% of the EU average
  - **transport improvement:** linking core and peripheral areas with fast transport

## Topic 5

### 5.2 The UK economy and society is increasingly linked and shaped by the wider world

Period	Population	Distribution	Age structure
1971	55.9 million	<ul style="list-style-type: none"> <li>- similar across the country</li> <li>- smaller towns</li> <li>- smaller differences between areas</li> </ul>	 <p>- higher child population than working population means adults have to work harder to support the youth</p>
2015	65 million	<ul style="list-style-type: none"> <li>- higher population in the South East</li> <li>- employees attracted to London for work</li> <li>- some residents moving to outskirts of London for affordable properties</li> </ul>	 <p>- higher working population increases the economy - higher senior population requires higher taxes to care for them</p>

- Why ethnic and cultural diversity has increased:
  - EU membership allows EU residents to migrate to the UK
  - globalisation has attracted qualified workers to the UK

#### Employment sectors:

- **primary:** obtaining raw materials from the Earth
- **secondary:** manufacturing products from raw materials
- **tertiary:** service provision
- **quaternary:** research and technological development



## The UK's Evolving Human Landscape

- The old economy featured mainly primary and secondary sectors.
- The new economy features tertiary and quaternary sectors.

	Dinnington, South Yorkshire	Canary Wharf, London
20 <sup>th</sup> Century	<ul style="list-style-type: none"> <li>- primary sector (coal mining)</li> <li>- well-paid permanent employment</li> </ul>	<ul style="list-style-type: none"> <li>- cheap land</li> <li>- low employment rates</li> </ul>
21 <sup>st</sup> Century	<ul style="list-style-type: none"> <li>- tertiary sector (business parks)</li> <li>- poorly-paid temporary employment</li> <li>- low employment rates</li> <li>- no qualifications needed</li> </ul>	<ul style="list-style-type: none"> <li>- tertiary and quaternary sectors</li> <li>- well-paid contract employment</li> <li>- high employment rates</li> <li>- high qualifications needed</li> </ul>

- **Foreign Direct Investment (FDI)** means investing overseas to maintain high profits.
- **Transnational Co-operations (TNCs)** are overseas companies which invest in the UK.
- FDI and TNC work in the UK have increased due to:
  - **globalisation:** increased connections between countries
  - **free trade policies:** the free flow of goods in the EU without tariffs or restrictions
  - **privatisation:** public sector jobs are referred to private companies which may operate internationally

## Topic 5

### 5.3 The context of the city influences its function and structure

- Importance of London's site, situation and connectivity:

	Site	Situation	Connectivity
National	the Weald, south of London, is fertile for farming to provide crops	hosts major rail terminals responsible for travel to all parts of the country	fast rail travel to all major cities is available
Regional	built on major River Thames, so big ships could travel in	good climate in South-East attracts tourists from colder countries	radial network of motorways connects to all points of compass
Global	growing population attracted more people from Europe	GMT time zone means no country is over 12 hours ahead/behind	six airports to transport people and goods worldwide

- Differences between different parts of the city:

	Function	Building Age	Building Density	Land-use	Environmental equality
CBD	commercial headquarters	oldest	highest	high-rise	lowest
Inner City	varied quality residential	old	high	terraced	low
Suburbs	middle quality residential	mixed	medium	semi-detached	medium
Urban-rural fringe	residential and industrial	young	low	detached with large gardens	high

## **5.4 The city changes through employment, services and the movement of people**

- Causes of national and international migration:
  - internal graduates seeking employment in London's CBD
  - external highly skilled workers for the City's knowledge economy
  - external unskilled workers for jobs such as rubbish collection, cleaning or pizza delivery
  
- Impacts of migration to London:
  - high working population
  - formation of clusters of particular ethnic communities, e.g. Southall
  - more renting and less owning properties
  - pressure on schools and social services due to high birth rate
  - building of native places of worship and food shops
  
- Reasons for different levels of inequality in London:
  - majority of people are either highly skilled or unskilled – no in between
  - school funding cuts have had a side effect on the quality of education
  - NHS funding cuts have meant lower accessibility to professional help

## Topic 5

### 5.5 The changing city creates challenges and opportunities

- In 1981, London's docks closed as the new container ships were too large for the shallow river.
- Effects of the closure of the docks:
  - **deindustrialisation:** factories, e.g. flour mills, around the docks closed
  - **depopulation:** former dock workers left the area in search for work
  - **derelict land:** a huge area of abandoned land was left behind in East London
- **Transport developments**, such as the London Underground, created a fast link between Central London and the outer suburbs, making it possible for people to live further away from the CBD.
- Effects of transport development:
  - **decentralisation:** out-of-town shopping centres, retail parks and business parks opened in London's suburbs
  - **e-commerce:** companies could sell items online and deliver them to people who were not necessarily living in the inner city
- Economic and population growth has been encouraged by:
  - **sprawl on the rural-urban fringe:** suburbanisation due to cheaper rent outside of London has actually increased London's size
  - **financial and business services:** these have enhanced the economy by, for example, renting new offices in the former docklands
  - **investment by TNCs:** companies such as HSBC moved their headquarters to Canary Wharf, forming a second CBD on otherwise derelict land
  - **gentrification:** middle-class workers moved to inner suburbs such as Fulham, close to work and full of entertainment
  - **studentification:** overseas university students occupy a large proportion of part of a city, e.g. the University of East London, requiring housing, shops and offering jobs
  - **culture and leisure:** West Ham's new stadium as a result of the 2012 Olympics has livened up East London and also hosts concerts/events

**5.6 Ways of life in the city can be improved by different strategies**

- Regeneration:
  - turning brownfield sites into new housing and offices
  - changed derelict land into Olympic stadium
- Rebranding:
  - changing the image of an area, particularly by rebuilding
  - changing derelict land into the Queen Elizabeth Olympic Park
  - replacing old factories with new housing and offices

	<b>Positive impacts</b>	<b>Negative impacts</b>
<b>Increased population</b>	<ul style="list-style-type: none"> <li>- reversed depopulation</li> <li>- growing population of young professionals</li> <li>- East London is accessible to everyone due to the 24h tube</li> </ul>	<ul style="list-style-type: none"> <li>- expensive housing</li> <li>- overseas investors buy properties but leave them vacant</li> </ul>
<b>Environmental quality</b>	<ul style="list-style-type: none"> <li>- Queen Elizabeth Olympic Park</li> <li>- cleaned oil-saturated land</li> </ul>	<ul style="list-style-type: none"> <li>- land needed more for building than green space</li> </ul>
<b>Economic opportunities</b>	<ul style="list-style-type: none"> <li>- half a million jobs to be created within the next 10 years</li> <li>- construction industry</li> <li>- high house prices (due to high demand)</li> </ul>	<ul style="list-style-type: none"> <li>- less unskilled jobs</li> <li>- high rents/mortgages make housing unaffordable</li> </ul>

- Strategies aimed at making London more sustainable and improving the quality of life:

<b>Strategy</b>	<b>How it works</b>
<b>Recycling</b>	<ul style="list-style-type: none"> <li>- recycling centres</li> <li>- composting centres</li> <li>- waste-burning power stations</li> </ul>
<b>Employment</b>	<ul style="list-style-type: none"> <li>- encouraging teleworking (working from home)</li> <li>- encouraging commuting outside rush hour</li> </ul>
<b>Green spaces</b>	<ul style="list-style-type: none"> <li>- preventing building in parks</li> <li>- Queen Elizabeth Olympic Park built</li> <li>- green belt</li> </ul>
<b>Transport</b>	<ul style="list-style-type: none"> <li>- congestion charge</li> <li>- LEZ (Low Emission Zone)</li> <li>- ULEZ (Ultra Low Emission Zone)</li> <li>- hybrid buses</li> <li>- free electric vehicle charging points</li> </ul>
<b>Affordable and energy efficient housing</b>	<ul style="list-style-type: none"> <li>- East Village (50% affordable)</li> <li>- encouraging first-time buyers</li> <li>- shower water reused by piping it to the garden</li> <li>- thick walls etc. to prevent heat loss</li> </ul>

## Topic 5

### 5.7 The city is interdependent with rural areas, leading to change in rural areas

- How London (urban) and Terling (rural) are interdependent:
  - **flows of goods:** farmers sell produce in London, Londoners sell manufactured products to rural areas, where some products are not necessarily available
  - **services:** some rural villages act as dormitory villages where people sleep while they work in London during the day
  - **labour:** London relies on rural areas for a workforce, and rural areas rely on cities for employment
- Costs and benefits of this type of interdependence:

	Costs	Benefits
<b>Economic</b>	<ul style="list-style-type: none"><li>- Terling's economy does <b>not</b> grow</li><li>- rural shops/restaurants etc. do <b>not</b> work during the day</li></ul>	<ul style="list-style-type: none"><li>- London's economy grows</li><li>- housing is more affordable outside London</li></ul>
<b>Social</b>	<ul style="list-style-type: none"><li>- little or no community spirit</li><li>- rural isolationism for those at home</li></ul>	<ul style="list-style-type: none"><li>- calm, quiet / low crime rates in Terling</li><li>- retired community settles</li></ul>
<b>Environmental</b>	<ul style="list-style-type: none"><li>- a car is needed to commute to London (polluting)</li></ul>	<ul style="list-style-type: none"><li>- no need to replace green spaces in London with housing</li></ul>

- Devon has experienced:
  - **counter-urbanisation:** people move to Devon due to low crime rates, calmness, good air quality, cheaper housing etc.
  - **pressure on housing:** planning permission for new accommodation is hard to get
  - **increased leisure and recreation:** as population increases, more people want to enjoy themselves, especially those who are retired
  - **population change:** many family migrants and retired people, who find the countryside a calmer place to be

## 5.8 The changing rural area creates challenges and opportunities

- Cornwall, west of Devon, is a popular holiday destination for both inland and overseas people who want to enjoy their summer.
- Challenges faced by Cornwall:
  - **availability and affordability of housing:** unaffordable for low-income earners, hard to get planning permission
  - **decline in primary employment:** less farming/fishing/quarrying/mining means fewer permanent, full-time jobs, and more poverty
  - **provision of healthcare:** GPs only open once a week, only one major hospital
  - **provision of education:** few sixth forms, high travel costs, so little or no degrees
- Effects of these challenges (IMD):

Indicator	Cornwall	Good or bad?
<b>Income</b>	low	Bad: people have low incomes
<b>Employment</b>	medium	Neutral: most people can work
<b>Health and disability</b>	low	Good: few people are affected by poor health
<b>Education, skills and training</b>	low	Bad: few graduates
<b>Housing and services</b>	low	Bad: pressure on housing, few doctors around
<b>Crime</b>	very low	Good: little or no crime
<b>Sub-standard living environment</b>	high	Bad: many people are living in sub-standard housing (e.g. lack of heating, damp)

- Rural diversification refers to finding a wider range of activities to enable a farm to survive.
- New economic opportunities created by rural diversification:
  - **farm shops:** enhance local economy, source of income, decreased poverty
  - **accommodation:** farms source income from tourist accommodation, e.g. barn conversions or campsites
  - **leisure activities:** swimming pools, spas etc. for tourists provides some income
- Environmental impacts of rural diversification:
  - destruction of habitats, e.g. nests
  - land cleared by deforestation
  - unnatural aspect of farm

## Topic 6

# 6 GEOGRAPHICAL INVESTIGATIONS

## 6.1 Contexts for fieldwork

*Investigating how and why drainage basin and channel characteristics influence flood risk for people and property along a river in the UK.*

**Enquiry:** How do channel and drainage basin characteristics change along Avon Water?

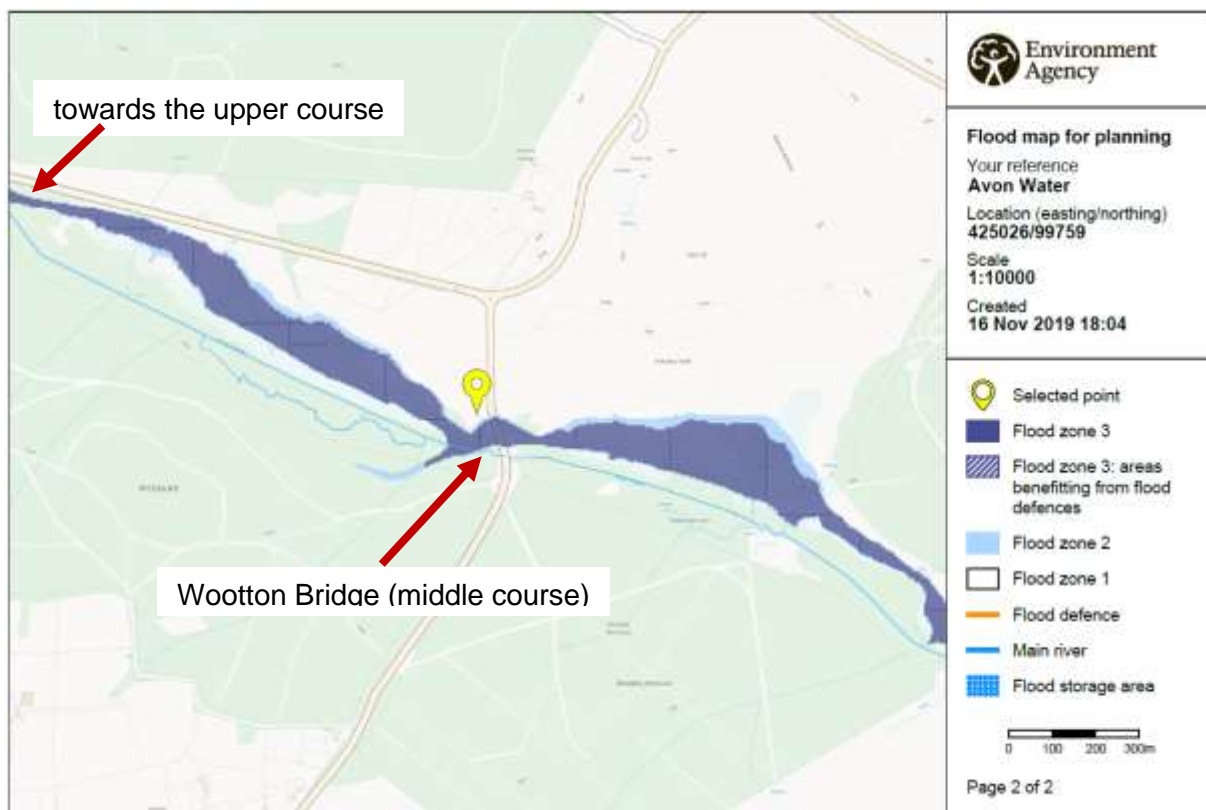
**Location:** Avon Water, Hampshire

- Decomposition of enquiry:
  - how does **channel shape** change from the upper to middle course?
  - how does **sediment size and shape** change from the upper to middle course?
  - how does **channel velocity** change from the upper to middle course?
  
- Quantitative methods:
  - **channel shape:** using metre stick to measure depth at set intervals across the river then drawing a graph illustrating the cross-section
  - **sediment size:** randomly selecting five rocks and measuring the long axis
  - **sediment shape:** grading sphericity on a scale of 1 to 5
  - **channel velocity:** timing how long it takes for an orange peel to travel 5m and calculating the speed
  
- Qualitative methods:
  - **drainage basin shape:** generally describing the shape of the land using pictures
  - **land use:** generally describing permeability of land

Measurement	Strengths	Weaknesses
channel shape	fairly accurate	interval may be too large
sediment size/shape	accurate and reliable	limited to time of year
channel velocity	easy to measure	speed at surface, not within river
drainage basin shape	easy to understand	not quantitative so not comparable



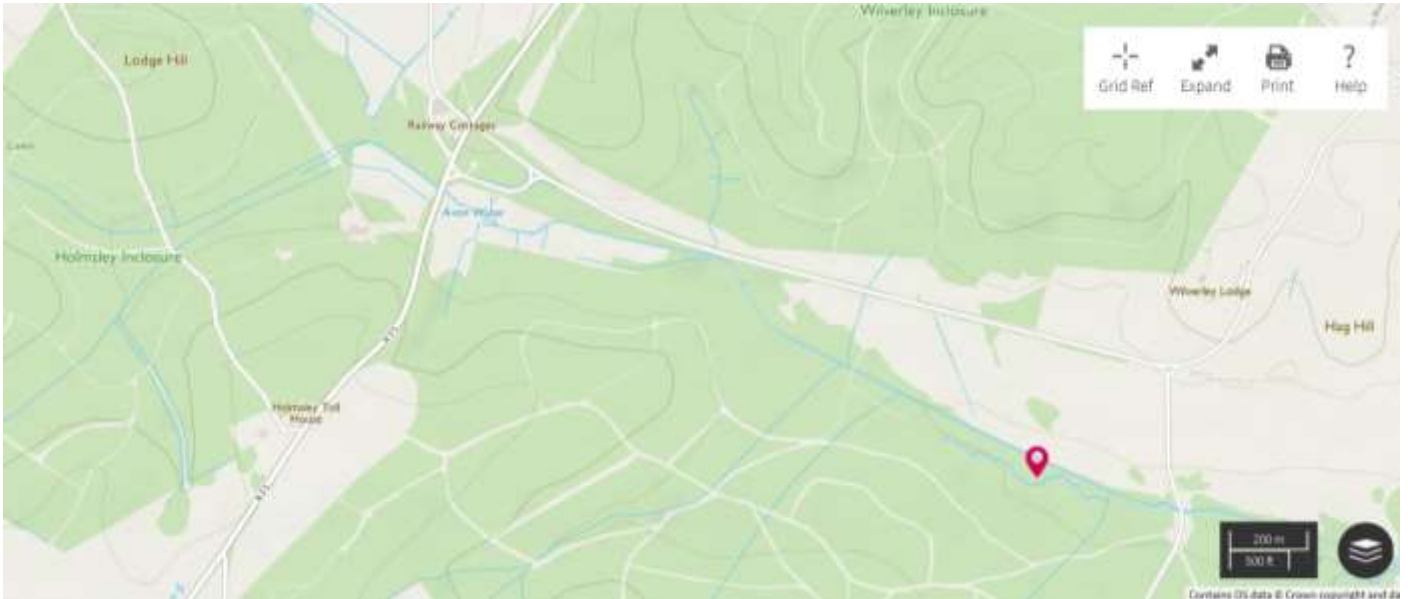
- Environmental Agency Flood Risk maps (secondary data):



- there is a medium risk of flooding around the river
- zone 2 expands as the river flows into its middle course

## Topic 6

- OS maps (secondary data):



- the contour lines show that the land on either side of the river is higher
- the drainage basin gets wider as the river flows into its middle course, so the flood risk decreases

## 6.2 Investigating dynamic urban areas

*Investigating how and why deprivation varies within rural areas in the UK.*

**Enquiry:** How does the quality of life vary in urban areas?

**Location:** East Village & Carpenters Estate, Stratford, East London

- Decomposition of enquiry:
  - how does the **quality of life** vary within urban areas?
  - how does **economic activity**, including job opportunities, vary within urban areas?
  - how does **crime** vary within urban areas?
  - how does **environmental quality** vary within urban areas?
- Qualitative methods:
  - **quality of life**: residents' perception survey
  - **safety**: crime risk assessment
- Quantitative methods:
  - **economic activity**: record number of shops/offices
  - **environmental quality**: litter count

Measurement	Strengths	Weaknesses
residents' survey	first-hand perceptions of area	small sample size
crime risk assessment	considers wide range of factors	may not reflect real statistics
environmental quality assessment	considers wide range of factors	does not consider air cleanliness qualitatively
litter count	litter is generally what is seen by all	does not consider air pollution
shop/office count	reliable factor for economic activity	does not consider teleworking

## Topic 6

- Office for National Statistics (ONS) (secondary data for education):

Date 2011

Geography Westminster

Measures value

	All categories: Age 16 and over	Age 16 to 24	Age 25 to 34	Age 35 to 49	Age 50 to 64	Age 65 and over
All categories: Highest level of qualification	186,812	25,911	54,219	51,383	30,785	24,514
No qualifications	23,943	1,462	2,507	5,716	5,579	8,679
Level 1 qualifications	12,308	2,845	2,196	3,558	2,375	1,334
Level 2 qualifications	14,497	4,179	2,389	3,496	2,545	1,888
Apprenticeship	1,420	156	169	355	401	339
Level 3 qualifications	17,113	6,887	3,119	3,408	2,343	1,356
Level 4 qualifications and above	93,946	7,950	37,610	27,338	13,308	7,740
Other qualifications	23,585	2,432	6,229	7,512	4,234	3,178

Date 2011

Geography Newham

Measures value

	All categories: Age 16 and over	Age 16 to 24	Age 25 to 34	Age 35 to 49	Age 50 to 64	Age 65 and over
All categories: Highest level of qualification	238,090	48,908	72,332	62,186	34,071	20,593
No qualifications	49,087	4,400	7,007	12,597	11,802	13,281
Level 1 qualifications	27,152	7,619	6,673	8,177	3,792	891
Level 2 qualifications	26,742	9,704	6,416	6,790	3,074	758
Apprenticeship	2,425	588	385	500	560	392
Level 3 qualifications	23,456	10,092	6,140	4,683	2,101	440
Level 4 qualifications and above	71,771	11,631	33,053	17,862	7,026	2,199
Other qualifications	37,457	4,874	12,658	11,577	5,716	2,632

- Westminster has 100 000 less residents but has approximately 30% more Level 4+ qualifications
- This indicates a lower quality of education in Newham

- Police.UK crime maps (secondary data for crime):



- total crimes in East Village: 99
- total crimes in Carpenters Estate: 33
- East Village is about twice the size of Carpenters Estate but has three times the crimes.
- crime ratio is 3:2, so East Village has a 50% higher crime rate overall





# **GEOGRAPHY PAPER 2**

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4 THE UK'S EVOLVING PHYSICAL LANDSCAPE

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5 THE UK'S EVOLVING HUMAN LANDSCAPE

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6 GEOGRAPHICAL INVESTIGATIONS

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