## Contents Page

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam Command Words</td>
<td></td>
</tr>
<tr>
<td>How to structure your answers</td>
<td></td>
</tr>
<tr>
<td>UK’s Physical Landscape Checklist</td>
<td></td>
</tr>
<tr>
<td>UK’s Physical Landscape Key Words</td>
<td></td>
</tr>
<tr>
<td>UK’s Physical Landscape Revision Material</td>
<td></td>
</tr>
<tr>
<td>UK’s Physical Landscape Practice Questions</td>
<td></td>
</tr>
<tr>
<td>Coasts Learning Checklist</td>
<td></td>
</tr>
<tr>
<td>Coasts Key Words</td>
<td></td>
</tr>
<tr>
<td>Coasts Revision Material</td>
<td></td>
</tr>
<tr>
<td>Coasts Practice Questions</td>
<td></td>
</tr>
<tr>
<td>UK’s Human Landscape Checklist</td>
<td></td>
</tr>
<tr>
<td>UK’s Human Landscape Key Words</td>
<td></td>
</tr>
<tr>
<td>UK’s Human Landscape Revision Material</td>
<td></td>
</tr>
<tr>
<td>UK’s Human Landscape Practice Questions</td>
<td></td>
</tr>
<tr>
<td>Geographical Investigations (Fieldwork) Checklist</td>
<td></td>
</tr>
<tr>
<td>Geographical Investigations (Fieldwork) Key Words</td>
<td></td>
</tr>
<tr>
<td>Geographical Investigations (Fieldwork) Revision Material</td>
<td></td>
</tr>
<tr>
<td>Geographical Investigations (Fieldwork) Practice Questions</td>
<td></td>
</tr>
</tbody>
</table>
### Exam Command Words

<table>
<thead>
<tr>
<th>Command Word</th>
<th>Marks</th>
<th>Meaning</th>
<th>Example Question</th>
<th>Sentence Starters/ Hints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify/ Name/ State</td>
<td>1</td>
<td>Find/give a simple statement</td>
<td>Identify the landform in the photo</td>
<td>I can see... An example is...</td>
</tr>
<tr>
<td>Define</td>
<td>1</td>
<td>Give the meaning</td>
<td>Define the term fertility rate</td>
<td>This means... The term ? means...</td>
</tr>
<tr>
<td>Calculate</td>
<td>1 or 2</td>
<td>Work out</td>
<td>Calculate the mean age of a group of people</td>
<td>Show your working out</td>
</tr>
<tr>
<td>Label</td>
<td>1 or 2</td>
<td>Print the name of/ Write on a map or diagram</td>
<td>Label 2 features of the river in Figure 2</td>
<td>Use correct Geographical terminology</td>
</tr>
<tr>
<td>Draw</td>
<td>2 or 3</td>
<td>Sketch/ Draw a line</td>
<td>Draw a line to complete the graph in Figure 3</td>
<td>Always draw in pencil</td>
</tr>
<tr>
<td>Compare</td>
<td>3</td>
<td>Find the similarities and differences</td>
<td>Compare the rate of population growth in 2 cities</td>
<td>This figure shows... As you can see... One similarity/ one difference that is evident</td>
</tr>
<tr>
<td>Describe</td>
<td>2 or 3</td>
<td>What is it like/ Trends on graphs</td>
<td>Describe the trends shown in Figure 1. Describe the increase in population</td>
<td>Use PQE: Pattern Quantity Exceptions Use GCSE General Comment Specific Example or Exceptions</td>
</tr>
<tr>
<td>Explain</td>
<td>2, 3 or 4</td>
<td>Give reasons why it happens</td>
<td>Explain the formation of a meander</td>
<td>PEE paragraphs This is because......</td>
</tr>
<tr>
<td>Suggest</td>
<td>2, 3 or 4</td>
<td>Give a well-reasoned guess to explain</td>
<td>Suggest reasons why flooding has become more frequent along this river</td>
<td>One possible reason... It may be that... In some cases we might...</td>
</tr>
<tr>
<td>Assess</td>
<td>8</td>
<td>Weigh up which is most/least important</td>
<td>Assess the need for coastal management along a stretch of coastline you studied</td>
<td>On one hand... Some may suggest that... The most important reason could be... Evidence suggests...</td>
</tr>
<tr>
<td>Evaluate</td>
<td>8</td>
<td>Give a judgement: which is most/ least effective</td>
<td>Evaluate the methods used in collecting data in your fieldwork</td>
<td>Although... In certain situations... Contributed to... Overall...</td>
</tr>
<tr>
<td>Select &amp; Justify</td>
<td>12</td>
<td>Select and then give evidence to support</td>
<td>Select and justify the best option for the future of</td>
<td>The reason for this... Significant impacts... However... To conclude Some may suggest</td>
</tr>
</tbody>
</table>
# How to structure your answers

<table>
<thead>
<tr>
<th>1 mark</th>
<th>Identify, State, Name, Define, Calculate, Label</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Write a simple sentence or just a few words</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2 marks</th>
<th>Calculate - You must show your workings out</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Label - Label/annotate at least 2 main things</td>
</tr>
<tr>
<td></td>
<td>Draw - Draw a diagram and label/annotate at least 2 main parts</td>
</tr>
<tr>
<td></td>
<td>Describe - state 2 things</td>
</tr>
<tr>
<td></td>
<td>Explain - Point, Explain</td>
</tr>
<tr>
<td></td>
<td>Suggest - Point, Development</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3 marks</th>
<th>Draw - Draw a diagram and label/annotate at least 3 main parts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Compare - At least one difference and one similarity plus another of your choice</td>
</tr>
<tr>
<td></td>
<td>Describe - state 3 things</td>
</tr>
<tr>
<td></td>
<td>Explain &amp; Suggest - Point &amp; 2 development or Point, Development, Point</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4 marks</th>
<th>Explain &amp; Suggest - Point &amp; Development x 2</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>8 marks</th>
<th>4 marks for explanation &amp; 4 marks for use of evidence</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Explanation</th>
<th>Use of evidence</th>
</tr>
</thead>
</table>
| **Assess**     | Requires you to explain which you think is the most important aspect of something in relation to others. Give 4 reasons for your decision or opinion  
E.g. Global responses to climate change are more important than local response because... | May require you to find evidence in a figure and/or use your own knowledge to give evidence for your decisions. Learn case studies and named examples. |
| **Evaluate**   | Require you to explain how successful you think something is or has been. Give 4 reasons for your decision.  
E.g. India has been successful in managing the environmental impacts of slums in Mumbai because... | Require you to use your own knowledge of the world to answer the question and provide evidence. Learn case studies and named examples. |
UK’s Physical Landscape Checklist

Learning Objective

I understand the role of geology, past tectonics and glacial processes in the development of upland and lowland areas.

I understand the characteristics and distribution of the UK’s main rock types: sedimentary, igneous, and metamorphic.

I understand why distinctive upland and lowland landscapes result from interaction of physical processes: weathering and climatological, post-glacial river and slope processes.

I understand why distinctive landscape result from human activity over time. (Agriculture, forestry, settlement)

UK’s Physical Landscape Key Words

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>wearing away the landscape</td>
</tr>
<tr>
<td>Faults</td>
<td>large cracks caused by past tectonic movements</td>
</tr>
<tr>
<td>Glaciated</td>
<td>formed or once covered by glaciers or ice sheets</td>
</tr>
<tr>
<td>Gradient</td>
<td>Slope</td>
</tr>
<tr>
<td>Igneous</td>
<td>Rock type formed from lavas and deep magmas. They were once molten, then cooled and crystallised</td>
</tr>
<tr>
<td>Interlocking spurs</td>
<td>hills that stick out on alternate sides of a V-shaped valley, like the teeth of a zip</td>
</tr>
<tr>
<td>Limestone</td>
<td>a pale grey rock consisting of crushed shells of corals that lived in tropical seas 300 million years ago</td>
</tr>
<tr>
<td>Lowland landscape</td>
<td>an area of flat land that is at, near or below sea level, which in the UK usually consists of younger and less resistant sedimentary rocks</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Mass movement</td>
<td>the movement of material downslope, such as rock falls, landslides or cliff collapse</td>
</tr>
<tr>
<td>Metamorphic</td>
<td>sedimentary rocks that were heated and compressed during igneous activity</td>
</tr>
<tr>
<td>Prevailing wind</td>
<td>the most frequent direction the wind blows in a certain area</td>
</tr>
<tr>
<td>Sedimentary</td>
<td>rock formed from sediments eroded and deposited by rivers, the sea, or on the sea bed</td>
</tr>
<tr>
<td>Strata</td>
<td>distinctive layers of rock</td>
</tr>
<tr>
<td>Sub-aerial processes</td>
<td>occurring on land, at the Earth’s surface, as opposed to underwater or underground</td>
</tr>
<tr>
<td>Upland landscape</td>
<td>an area of high land, in the UK consisting of resistant igneous, metamorphic and sedimentary rock</td>
</tr>
<tr>
<td>Uplifted</td>
<td>(in geology) raised or pushed up as a result of tectonic activity</td>
</tr>
<tr>
<td>U-shape</td>
<td>(river valley) deep valleys created by glaciers, shaped like the letter ‘U’ with steep, straight sides and a flat bottom</td>
</tr>
<tr>
<td>Weathering</td>
<td>the physical, chemical or biological breakdown of solid rock by the action of weather (e.g. frost, rain) or plants</td>
</tr>
</tbody>
</table>
UK’s Physical Landscape Revision Material

**Uplands and lowlands**

Geology and past processes – such as glaciation and past tectonic activity – have influenced the physical landscape of the UK.

There are three groups of rock type.

- **Igneous** – made from magma (granite)
- **Sedimentary** – compressed sediment (e.g. clay, chalk, limestone)
- **Metamorphic** – igneous or sedimentary rock changed by heat or pressure (e.g. shale into slate)

The UK is split into two halves geologically.

- The geology of the top half is mainly igneous and metamorphic rocks. This forms upland landscapes.
- The geology of the bottom half is mainly sedimentary rocks. These rocks are characteristic of lowland landscapes.

**Glaciation**

The top half of the UK was glaciated during the last Ice Age. Ice sheets and glaciers hundreds of metres thick covered the land as far south as London. The ice pressed down on the landscape and eroded it in distinctive ways.

The bottom half of the UK was not covered in ice sheets, but it was heavily influenced by glacial deposition. Clays, sands and silts eroded by glaciers in northern areas were dumped and washed over southern areas. The south was frozen, even if it was not ice-covered.

**Worked example**

Study the picture opposite, which shows Arthur’s Seat, a long-extinct volcano near Edinburgh. Explain two ways in which the UK’s landscape has been influenced by past tectonic processes.

(4 marks)

North of the Tees–Exe line the UK’s geology is largely igneous: rock formed from magma, associated with tectonic events. Long-extinct volcanoes also form other hills and mountains in the UK.

This is a good answer because it relates tectonic events to the UK landscape.
Main UK rock types

The UK’s main types of igneous, metamorphic and sedimentary rocks help produce some characteristic UK landscapes.

Main UK rock types

- Sedimentary
  - chalk
  - limestone
  - clay
- Igneous
  - granite
  - schists
- Metamorphic
  - slate

Chalk and clay landscapes

- Chalk is strong and permeable – water moves through it. It forms cliffs when it occurs at coastlines.
- Chalk is only found in lowland Britain.
- Clay is weak and impermeable – water cannot move through it.
- Clay is found all over Britain. Clay landscapes are typically wide, flat plains with lots of lakes, streams and rivers.

Sedimentary, igneous and metamorphic rocks in the UK

Water draining through the chalk flows out as springs along the line where the permeable chalk meets impermeable clay.

Igneous and metamorphic rocks

- Granite is hard and resistant to erosion but is susceptible to chemical weathering.
- Granite is impermeable and granite landscapes are badly drained – boggy.
- Tors are features of some granite landscapes: towers of granite chemically weathered into blocks.
- Metamorphic rocks are very strong and very resistant to erosion and weathering.
- Slate is formed from clay. Layers in the original clay form weak planes in the slate.
- Schists are formed from shale. The word schist originally meant ‘to split’. Schist rocks split easily.

Worked example

Study the diagram below, which shows a cross section of a Carboniferous limestone landscape. W is a limestone pavement, Y is a cave, and Z is a gorge. Which one of the remaining letters indicates a resurgence stream? (1 mark)

V W X Y Z

Carboniferous limestone is permeable and is chemically weathered by rainwater. Limestone landscapes have distinctive features, and are often associated with underground caves.

Now try this

Identify the rock type that underlies Dartmoor – an upland area with thin, boggy, poorly drained soils and dramatic tor features. (1 mark)
Human activity

The UK has been settled by humans for many thousands of years and all its landscapes have been heavily influenced by human activity.

Agriculture

This OS map extract is at 1:25,000 scale. It shows a region of Suffolk in the east of the UK.
- The blue lines are drainage ditches, built to drain water away from low-lying agricultural land to allow crops to grow.
- Trees have been cleared to make way for agriculture.
- Straight lines on maps are not often produced by natural physical processes so they are a good indication of human activity.

Forestry

Forestry is planting, managing and caring for forests for different purposes such as nature conservation, landscaping, recreation and timber production.
- Many UK upland landscapes have been planted with trees. Sometimes they are in straight rows to make forestry processes easier to manage.
- The UK would naturally be covered by deciduous woodland. However, some UK landscapes feature conifer plantations, which have been planted for timber production and are very distinctive.

Settlements

Settlements grew up where the landscape offered particular advantages. For example:
- river meander loops made good defensive locations
- natural harbours were sites for fishing villages
- shallow points of rivers were used as fords
- springs gave people reliable freshwater.

As settlements grew, the settlements took over the landscape. In big cities, many streams and small rivers now run in tunnels underground.
UK’s Physical Landscape Practice

Questions

1. Explain one way glacial processes have contributed to the formation of the UK’s physical landscape (2 marks)
2. State the main characteristics of a sedimentary rock (1 mark)
3. Explain how metamorphic rocks form. (2 marks)
4. Explain two ways in which humans have influenced the landscape of the UK. (4 marks)
5. Explain how past tectonic processes have shaped the UK landscape (4 marks)
6. Explain one way that climate may be influencing the physical processes in this landscape (2 marks)

Coasts Learning Checklist

<table>
<thead>
<tr>
<th>Learning Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>I understand how geological structure and rock type influence erosional landforms in the formation of coastal landscapes of erosion. (Hard/soft rock) (Headlands, Bays, caves, arches, cliffs, stacks)</td>
</tr>
<tr>
<td>I understand how UK climate, marine and sub-aerial processes are important in coastal landscapes or erosion &amp; rate of erosion.</td>
</tr>
<tr>
<td>I understand how sediment transportation and deposition processes influence coastal landforms on coastal landscapes of deposition.</td>
</tr>
<tr>
<td>I understand how human activities have direct or indirect effects on coastal landscapes.</td>
</tr>
</tbody>
</table>
I understand how the interaction of physical and human processes is causing change on a named local landscape including the significance of its location.

I understand why there are increasing risks from coastal flooding and the threats to people and environment.

I understand why there are costs and benefits to, and conflicting views about, managing coastal processes by hard/soft/sustain engineering strategies.

## Coasts Key Words

<table>
<thead>
<tr>
<th>Keywords</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasion</td>
<td>the scratching and scraping of a river bed and banks by the stones and sand in a river</td>
</tr>
<tr>
<td>Arch</td>
<td>a curved passage through a headland created when a cave which was eventually broken through by erosion</td>
</tr>
<tr>
<td>Attrition</td>
<td>the wearing away of particles of debris by the action of other particles, such as river or beach pebbles</td>
</tr>
<tr>
<td>Backwash</td>
<td>the flow of water back to the sea after waves break on a beach</td>
</tr>
<tr>
<td>Bar</td>
<td>an accumulation of sediment that grows across the mouth of a bay, caused by longshore drift</td>
</tr>
<tr>
<td>Beach</td>
<td>an area of sand or pebbles along the shore of a body of water</td>
</tr>
<tr>
<td>Beach profile</td>
<td>the shape of a beach resulting from how waves break</td>
</tr>
<tr>
<td>Cave</td>
<td>a large hole, either underground or in the side of a hill or cliff, often created when waves force their way into cracks in the cliff face</td>
</tr>
<tr>
<td>Concordant</td>
<td>(coasts) follow the ridges and valleys of the land, so the rock strata is parallel to the coastline</td>
</tr>
<tr>
<td>Constructive waves</td>
<td>build beaches by pushing sand and pebbles further up the beach</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Cost-benefit analysis</td>
<td>looking at all the costs of a project, social and environmental as well as economic, and deciding whether it is worth going ahead</td>
</tr>
<tr>
<td>Destructive waves</td>
<td>waves which erode beaches</td>
</tr>
<tr>
<td>Discordant</td>
<td>(coasts) alternate between bands of hard rocks and soft rocks, so the rock strata is at right angles to the coast</td>
</tr>
<tr>
<td>Fetch</td>
<td>the length of water over which the wind has blown, affecting the size and strength of waves</td>
</tr>
<tr>
<td>Groynes</td>
<td>wooden or stone structures built at right angles to the coast to trap sediment from longshore drift, allowing a beach to build up</td>
</tr>
<tr>
<td>Hard engineering</td>
<td>building physical structures to deal with natural hazards, such as sea walls to stop waves</td>
</tr>
<tr>
<td>Holistic</td>
<td>(coastal management) takes into account all social, economic and environmental costs and benefits. This means looking at the coastline as a whole instead of an individual bay or beach</td>
</tr>
<tr>
<td>Hydraulic action</td>
<td>the force of water along the coast, or within a stream or river</td>
</tr>
<tr>
<td>Integrated Coastal Zone Management (ICZM)</td>
<td>the holistic management of coasts</td>
</tr>
<tr>
<td>Marine processes</td>
<td>wave-related processes that contribute to coastal erosion</td>
</tr>
<tr>
<td>Prevailing wind</td>
<td>the most frequent direction the wind blows in a certain area</td>
</tr>
<tr>
<td>Recurved end</td>
<td>the hooked end of a spit</td>
</tr>
<tr>
<td>Shoreline Management Plan (SMP)</td>
<td>an approach which builds on knowledge of the coastal environment and takes account of the wide range of public interest to avoid piecemeal attempts to protect one area at the expense of another</td>
</tr>
<tr>
<td>Soft engineering</td>
<td>involves adapting to natural hazards and working with nature to limit damage</td>
</tr>
<tr>
<td>Spit</td>
<td>a ridge of sand running away from the coast, usually with a curved seaward end</td>
</tr>
<tr>
<td>Stack</td>
<td>a tall column of rock left standing in the sea after wave erosion has separated it from the mainland</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Storm surge</td>
<td>A rapid rise in the level of the sea caused by low pressure and strong winds</td>
</tr>
<tr>
<td>Stump</td>
<td>The part of a stack that has been left after wave erosion has caused the stack to collapse</td>
</tr>
<tr>
<td>Suspension</td>
<td>Tiny particles of sediment dispersed in water</td>
</tr>
<tr>
<td>Swash</td>
<td>When water rushes up a beach</td>
</tr>
<tr>
<td>Terminal groyne syndrome</td>
<td>When the last groyne along a coast prevents longshore drift from bringing material to other areas, causing erosion problems further down the coast</td>
</tr>
</tbody>
</table>

**Coasts Revision Material**

**Geology of Coasts**

The geological structure of coasts and the type of rock found there influence the erosion landscapes formed.

**Soft rock (e.g. clay)**
- Soft rock is easily eroded by the sea.
- Cliffs will be less rugged and less steep than hard rock coasts.
- Soft rock landscapes include bays.

**Hard rock (e.g. granite)**
- Hard rock is resistant to all types of erosion.
- Cliffs will be high, steep and rugged.
- Hard rock landscapes include wave-cut platforms and headlands where caves, arches and stacks are formed.

**Concordant and discordant coasts**

Concordant coasts are made up of the same rock type, parallel to the sea. On discordant coasts the rock type alternates in layers perpendicular to the sea, forming headlands and bays.

**Joints and faults**
- Joints are small cracks in rock, and faults are larger cracks in rock.
- Both make rock more susceptible to erosion.
- Rocks with more joints and faults are eroded more quickly than rocks with fewer joints and faults.

**Rates of erosion: other factors**

How fast coastal erosion occurs is primarily down to geology (soft rock is eroded much faster than hard rock) but is also influenced by:
- Geological structure – for example, if soft rocks and hard rocks occur together
- Wave climate – how powerful waves are, wave direction, wave height, fetch (how far winds travel over open water), etc.
- Local currents and tidal range (the difference in height between low and high tides)
- Groundwater levels – saturated cliffs (high groundwater) are more vulnerable.
Landscapes of erosion

You need to be able to explain how coastal landscapes are formed.

The formation of headlands and bays

- **Soft rock (e.g. clay) is easily eroded**
- **Hard rock (e.g. granite, chalk) is more resistant to erosion**

Bays form due to the rapid erosion of soft rock. When formed, bays are sheltered by headlands and so are less eroded.

Headlands are left sticking out where hard rock has resisted erosion.

- **Bays have formed due to rapid erosion of less resistant rocks**
- **Once formed, headlands are more vulnerable to erosion because wave energy is concentrated there.**

Hard rock coastal landforms created by erosion

- **Caves, arches and stacks**

- **Stack** — formed when an arch collapses
- **Stump** — formed when a stack is eroded by wind and water

- **Cave** — formed when the waves erode a weakness in the rock such as a joint or a fault
- **Arch** — formed when two caves erode back from either side of a headland and meet in the middle

Wave-cut platforms

The erosion of cliffs can create wave-cut platforms — areas of flat rock at the base of the cliff.

- **Rock face overhangs**
- **Wave-cut notch showing undercutting by the waves**

Worked example

Explain how geological structure can influence the erosion of a coastal headland. (4 marks)

Headlands are sections of resistant rock which jut out into the sea. Erosion by the sea will happen faster where there are gaps, cracks, joints, faults or other weaknesses in the rock. Caves are formed as erosion happens more quickly at this weaker section of the rock. If the weakness goes right through the rock, an arch may form as caves on either side of the headland join up.

Now try this

Explain how a wave-cut platform is formed. (4 marks)
Waves and climate

Destructive waves are the main cause of coastal erosion, but climate also plays an important role.

How waves erode the coast

- **Hydraulic action**: the sheer weight and impact of water against the coastline, particularly during a storm, will erode the coast. Also waves compress air in cracks in the rock, forcing them apart and weakening the rock.
- **Abrasion**: breaking waves throw sand and pebbles (or boulders) against the coast during storms.
- **Attrition**: the rocks and pebbles carried by the waves rub together and break down into smaller pieces.
- **Solution**: chemical action by seawater on some rocks, especially limestone.

In a destructive wave the swash is weak and the backwash is strong, which means material is dragged back down a beach into the sea.

The four seasons have different impacts on coastal erosion. For example, cold temperatures in winter lead to freeze–thaw weathering in cliffs.

Prevailing winds in the UK are from the south-west, bringing warm, moist air from the Atlantic and frequent rainfall, leading to weathering and mass movement on the coast.

**Impact of UK climate on coastal erosion**

Storm frequency is high in many parts of the UK, so coasts are often subject to strong winds, leading to an increase in the eroding power of waves and also leading to heavy rainfall contributing to mass movement.

This is a good answer because the points it makes are accurate and each explained in terms of contribution to coastal erosion.

**Worked example**

Explain how the UK climate contributes to coastal erosion.

The UK's climate is temperate maritime, which means winters are mild and wet and summers are warm and wet. The prevailing winds from the south-west often bring rainfall to the country. The large amount of rainfall causes coastlines to erode through weathering and can also lead to mass movement and cliff collapse. Storm frequency is high, which brings heavy rainfall and strong winds that increase the erosional power of waves. The UK winter climate frequently sees temperatures dipping below freezing at night and then rising above 0°C in the daytime. When this is repeated many times, freeze–thaw weathering results, which adds to erosion.

(4 marks)
Sub-aerial processes

Processes that impact on the land—such as weathering and mass movement—also contribute to coastal erosion.

Mechanical weathering
Freeze–thaw—most common in cold climates. When it freezes, water in cracks in the rock expands. Over time, the crack widens and pieces of rock fall off. It is most effective when the temperature frequently rises above and falls below 0°C.

Chemical weathering
This happens when the rock’s mineral composition is changed.
• Granite contains feldspar which converts to soft clay minerals as a result of a chemical reaction with water.
• Limestone is dissolved by carbonation. Carbon dioxide in the atmosphere combines with rainwater to form carbonic acid, which changes calcium carbonate (limestone) into calcium bicarbonate. This is carried away by water in solution.

Biological weathering
This is caused by plants and animals and its action speeds up mechanical or chemical weathering. For example, tree roots widen gaps in rocks.

Mass movement
Mass movement is the downhill movement of material under the influence of gravity. The different types of mass movement depend on:
• the material involved
• the amount of water in the material
• the nature of the movement e.g. falls, slips or rotational slides.

Slumps happen when the rock (often clay) is saturated with water and slides down a curved slip plane.

Sliding happens when loosened rocks and soil suddenly tumble down the slope. Blocks of material might all slide together.

Coastal erosion leads to coastal retreat, when the coastline moves further inland. Another way to look at this question is to think about factors that increase the rate of erosion at the coast.

Worked example
Explain factors that lead to a fast rate of coastal retreat.
Coasts exposed to frequent storms will retreat faster than other areas because strong winds increase the eroding power of the sea and heavy rainfall will contribute to mass movement. Soft rock coastlines will retreat faster than hard rock coastlines as soft rock erodes quickly. Cliffs where the rocks have a large number of joints and faults will also erode more quickly than cliffs with fewer joints and faults.

Now try this
Draw a diagram to show the stages of freeze–thaw weathering.
Transportation and deposition

Waves transport eroded material along the coast and deposit it when they lose the energy to carry it further.

**Longshore drift**

1. Waves approach the coast at an angle.
2. Swash pushes sand and gravel up the beach at the same angle.
3. Backwash carries sand and gravel back down the beach at 90° to the coastline under the force of gravity.
4. Sand and gravel move along the beach in a zigzag fashion.
5. Sand is lighter than gravel so moves further up the beach.

**Transportation**

Waves transport material by:

- **Traction** – large boulders are rolled along the sea bed by waves
- **Saltation** – smaller stones are bounced along the sea bed
- **Suspension** – sand and small particles are carried along in the flow
- **Solution** – some minerals are dissolved in seawater and carried along in the flow

**Deposition**

The load carried by waves is deposited by constructive waves. Different factors influence deposition, for example:

- sheltered spots (e.g. bays)
- calm conditions
- gentle gradient offshore causing friction.
- All reduce the wave’s energy.

**Worked example**

Describe the differences between a constructive wave and a destructive wave. (4 marks)

Constructive waves deposit material on beaches because they break gently on the beach and their strong swash carries material up the beach, while their weak backwash does not erode the material already on the beach. Destructive waves erode material from beaches because the backwash of these waves is much stronger than their swash and this drags material back down the beach into the sea.
Landscapes of deposition

Landscapes resulting from deposition include beaches, spits and bars.

**Beaches**
Beaches are accumulations of sand and shingle formed by deposition and shaped by erosion, transportation and deposition.

Beaches can be straight or curved. Curved beaches are formed by waves refracting, or bending, as they enter a bay.

Beaches can be sandy or pebbly (shingle). Shingle beaches are usually found where cliffs are being eroded and where waves are powerful. Ridges in a beach parallel to the sea are called berms and the one highest up the beach shows where the highest tide reaches.

**Spits** are narrow projections of sand or shingle that are attached to the land at one end. They extend across a bay or estuary or where the coastline changes direction. They are formed by longshore drift powered by a strong prevailing wind.

**Bars** form in the same way as spits, with longshore drift depositing material away from the coast until a long ridge is built up. However, bars grow right across the bay, cutting off the water to form a lagoon.

---

**Worked example**

Identify the coastal landform shown on the map.

- □ A bar
- □ B beach
- □ C cave
- X D spit

**Now try this**

Briefly describe how spits are formed.

(2 marks)

You need to be able to identify coastal landforms of deposition on OS maps like this one.
## Human impact on coasts

Human activities can have direct and indirect, positive and negative, effects on coastal landscapes.

### Development
- The weight of buildings increases cliff vulnerability.
- Changes in drainage increase saturation.
- Raises interest in protecting coastal landscapes.

### Industry
- Can cause/increase air, soil, water and noise pollution.
- Can destroy natural habitats for birds, animals and sea life.
- Brings wealth and jobs to an area.

### Agriculture
- Increased soil erosion.
- Increased sedimentation.
- Wildlife habitats may be created and preserved.

### Coastal management
- Can increase erosion further along the coastline.
- Helps reduce risk of coastal flooding.
- Some salt marshes, sand dunes, sand bars and spits are preserved and protected.

### Tourism
Coasts attract tourists for relaxing on beaches, swimming and water sports as well as enjoying the beautiful landscape. The effects can be diverse.
- Increased development for hotels and campsites impacts on natural processes – for example, increasing/decreasing coastal erosion, transportation and deposition and mass movement.
- Increased pollution – for example, littering, noise, traffic fumes.
- Increased revenue benefits people living there.
- Increased desire to protect and preserve landscape so tourism continues.

### Worked example
Describe **two** effects of human activities on coastal landscapes.

(2 marks)

Human development of coastlines by building houses and other buildings on the coast increases the risk of mass movement and cliff collapse as the weight of the buildings puts increased pressure on the cliffs and adds to run-off, which leads to soil saturation.

Humans can also decrease coastal erosion and transportation by building sea defences, which protect the coastline from the sea, reducing the risk of flooding and coastal retreat.

When a question asks for a specific number of things (in this case 'two'), show the separate points, as in this example.

### Now try this
Explain **one** way in which agriculture has affected coastal landscapes.

(2 marks)
Holderness coast

You need to know how the interaction of physical and human processes is causing change on one named coastal landscape, including the significance of its location. We’ve used Holderness; you should use the example you did in class.

Holderness coast in East Yorkshire is one of the most vulnerable coastlines in Europe.

Significance of location
- Rock type is soft boulder clay, which is easily eroded and prone to slumping when saturated.
- Exposed to strong waves from the North Sea.
- Harder chalk rocks at Flamborough Head.

Physical processes at work
- Coastal erosion – a combination of strong waves (especially during storms) and rock type ensure the coast is eroded rapidly.
- The mean rate of erosion is around 2 m/yr: one of the fastest-eroding coastlines in Europe.
- Mass movement – clay frequently slumps from the cliffs after rainfall.
- Transportation – strong waves move the eroded material away from the coastline.

Human processes at work
- Hard engineering on some parts of this coast – for example, rock armour and groynes at Mappleton have protected some areas from erosion and cliff collapse.
- Hard engineering in some places has prevented transportation, making erosion worse in other places.

Changes caused
Some parts of this coastline are retreating at a rate of nearly 2 m/yr. Farmland, property and settlements have been lost to the sea, changing the landscape permanently.

Worked example

Using one named example, describe two ways in which human processes have affected physical processes in a coastal landscape.

On the Holderness coast in East Yorkshire, hard engineering methods including rock armour and groynes have slowed down the rate of coastal erosion and cliff collapse, which would otherwise have been fairly rapid. However, the rock armour and groynes in some places, such as Mappleton, have prevented the transportation of material along the coast, leaving these other areas more exposed to erosion by the sea than they would have been and therefore speeding up the rate of coastal retreat.

Make sure you name your location in your answer.

Now try this

Explain how the location and geology of the Holderness coast contributes to its rapid rates of coastal erosion.
Coastal flooding

There is increased risk of coastal flooding in the UK that is mainly due to climate change.

**Climate change**

- As atmospheric temperature rises, it is likely that storm frequency and strength will increase. This can increase the height and strength of waves reaching the coast (especially when combined with high tides). An increase in heavy rainfall and wind will also increase weathering and mass movement on the coast.
- As sea temperature increases, the water expands so sea levels rise. The melting of ice on land also adds to the water in the ocean. Rising sea levels put low-lying coastal land at increased risk of flooding.

**The effects of climate change on the coastal environment**

- Erosion may increase, so some beaches may disappear.
- Depositional features such as spits and bars may be submerged or destroyed.
- Natural ecosystems (e.g. the Essex marshes) and habitats may be destroyed.
- Erosion may increase, adding to coastal retreat and the risk of cliff collapse.

---

**Impacts of increased risk of flooding on people**

- Flooding associated with storm surges can put people at risk of injury and death.
- Psychological impacts of losing or potentially losing homes and livelihoods.
- Settlements either need to be moved or defended, both of which will be expensive.
- Coastal tourism may diminish in some areas if beaches or other landscapes are lost.
- Flooding of roads and damage to railways will make travel more difficult.
- Loss of agricultural land will affect food production and the economy.

---

**Worked example**

Explain how climate change may affect coasts in the future. (4 marks)

Sea levels are predicted to rise because of climate change. This will mean that low-lying coastal areas, such as in much of East Anglia, are at increased risk of flooding or may even completely disappear into the sea. There is likely to be more frequent and stronger storms in the UK. This will mean that coastlines are eroded faster and there may be more instances of coastal flooding, which may damage people’s properties and destroy depositional features such as beaches.

This answer includes an example of an area that’s at risk of increased flooding. It’s always a good idea to include examples in your answers where you can.

---

**Now try this**

Explain why climate change brings an increased risk of coastal flooding in the UK. (4 marks)
Coastal management

Managing coastal processes can be done in different ways. All have different costs and benefits.

### Hard engineering

- **Sea wall**
  - Protects cliffs and buildings
  - Expensive

- **Groynes**
  - Prevents sea removing sand
  - Exposes other areas of coastline

- **Beach replenishment**
  - Sand reduces wave energy and maintains tourism
  - Expensive

### Soft engineering

- **Slope stabilisation**
  - Reduces slippage of cliff still needs protection from the waves

### Integrated Coastal Zone Management

- **Do nothing**
  - Cheaper than taking action
  - Homes and land are lost

- **Hold the line**
  - Existing shoreline maintained
  - Expensive

- **Strategic realignment**
  - People and activities move inland
  - Unpopular with local residents

**Worked example**

Explain conflicting views on one method of coastal management. (4 marks)

Groynes are a hard engineering method of coastal management. They help prevent erosion of that bit of coastline and stop longshore drift transporting beach sediments along the coast. People who have homes and businesses that would be impacted by coastal erosion if the groynes were not built are likely to approve of the scheme. However, people who live further along the coast may disapprove as their homes and businesses will be negatively impacted. People who are not affected at all may disapprove of taxpayers’ money being used to fund such schemes.

With questions like this, it is always good to begin answers by naming the method the answer will discuss.
Coasts Practice Questions

Assess the costs and benefits of a coastal management scheme in the UK. (8 marks)

Before attempting to answer the question, remember to BUG it.

✓ Box the command word.
✓ Underline the following:
  • the theme
  • the focus
  • if you need to refer to specific evidence
  • if there is more than one part to the answer.
✓ Glance back over the question – to make sure you include everything in your answer.

Command word: Weigh up the costs and benefits, and come to a conclusion on which are the most important.

Number of examples: The question refers to costs and benefits, so you must consider more than one of each.

Specific evidence: Support your answer with evidence from a named example you have studied.

Topic: This question is related to the topic of The UK’s evolving physical landscape, which will be assessed in Paper 2, Section A of your GCSE exam. This question is compulsory.
PEEL your answer

Use PEEL notes to structure your answer. This will help you to communicate your ideas to the examiner in the clearest way.

- **Point** – Make two or three points in detail, rather than lots of points in less detail. Don’t use bullet points.
- **Explain** – Give reasons by using sentence starters such as: ‘This is because ...’; ‘One reason is ...’.
- **Evidence** – Include facts and other details from named examples to back up your point. Each point – with explanation and evidence – should represent a separate PEE paragraph.
- **Link** – To link different points to each other, use PEE sentence starters such as: ‘Another important point is ...’ or ‘Of more importance is ...’. Make sure your conclusion also links back to the question.

**Quality not quantity:** You will not be marked simply on the number of points you make, but on the quality of your answer. That means the quality of the content and how well you structure your answer.

**SPaG:** You are not awarded extra marks for spelling, punctuation and grammar for this question. However, you should use your best English writing style and check your answer carefully.
1. Identify two landforms that are characteristic of a discordant coast (2 marks)

2. Explain how a wave cut platform is formed (4 marks)

3. Describe two ways in which waves erode a coast (2 marks)

4. Draw a diagram to show the stages of freeze-thaw weathering (3 marks)

5. Explain the process of longshore drift (4 marks)

6. Describe how spits are formed (2 marks)

7. Explain one way in which agriculture has affected coastal landscapes (2 marks)

8. Explain why climate change brings an increased risk of coastal flooding in the UK (4 marks)
9. Outline one cost and one benefit of one hard engineering method of coastal management. (4 marks)

10. Define the term ‘concordant coast’ (1 mark)

11. Describe two characteristics of soft rock cliffs (2 marks)

12. Explain two differences between destructive and constructive waves (2 marks)

13. State two factors that influence the size and type of wave (2 marks)

14. Define the term ‘sub-aerial processes’ (1 marks)

15. Draw a labelled diagram to explain the process of longshore drift (3 marks)

16. Explain how human activities can affect the coastal landscape (4 marks)

17. For a named example, explain how coastal management processes have changed the coastal landscape (4 marks)

18. Explain why sea-level rise is threatening coastal areas across the UK. (4 marks)

19. Coastal areas are increasingly threatened by rising sea levels. Assess the possible consequences of sea level rise for people living near the coast (8 marks)

20. Explain how groynes can help reduce rates of coastal erosion (2 marks)

21. Describe one advantage of beach nourishment (2 marks)

22. Explain one advantage of using hard defences at the coast (2 marks)
### UK’s Human Landscape Learning Checklist

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>✔️</th>
<th>☑️</th>
<th>☑️</th>
</tr>
</thead>
<tbody>
<tr>
<td>I understand the differences between urban core and rural.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I know how the UK and EU government policies have attempted to reduce them.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand why national and international migration over the past 50 years has altered the population geography of the UK, examining UK and EU immigration policy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand the decline in primary and secondary sectors and the rise of tertiary and quaternary sectors in urban and rural areas, altering employment structures in different UK regions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand why globalisation, free-trade policies and privatisation has increased foreign direct investment and the role of TNC’s in the UK economy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand the significance of site, situation and connectivity of the city in a national, regional and global context.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand the city’s structure, inner city, in terms of its functions and variations in building age and density, land-use and environmental quality.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand the causes of national and international migration that influence growth and character the different parts of the city.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand the reasons for different levels of inequality, in employment and services, education, health in different parts of the city.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand how parts of the city have experienced decline, de-centralisation, e-commerce, developments in transport.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand how parts of the city have experiences economic and population growth.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand how regeneration and rebranding of the city has positive and negative impacts on people.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
I understand the strategies aimed at making urban living more sustainable and improving quality of life in the city.

**UK’s Human Landscape Key Words**

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessible</td>
<td>Easy to get to and from</td>
</tr>
<tr>
<td>Affordable housing</td>
<td>cheaper housing</td>
</tr>
<tr>
<td>Brownfield sites</td>
<td>land previously used for industrial purposes that has become vacant</td>
</tr>
<tr>
<td>Business parks</td>
<td>areas specifically designed for business offices and small factories</td>
</tr>
<tr>
<td>Conurbations</td>
<td>a continuous urban or built-up area, formed by merging towns or cities</td>
</tr>
<tr>
<td>Core regions</td>
<td>urban areas that drive the economy</td>
</tr>
<tr>
<td>Counter-urbanisation</td>
<td>when people leave towns and cities to live in the countryside</td>
</tr>
<tr>
<td>Decentralisation</td>
<td>shift of shopping activity and employment away from the Central Business District (CBD)</td>
</tr>
<tr>
<td>Deindustrialisation</td>
<td>decreased activity in manufacturing and closure of industries, leading to unemployment</td>
</tr>
<tr>
<td>Deprivation</td>
<td>a lack of wealth and services. It usually means low standards of living caused by low income, poor health, and low educational qualifications</td>
</tr>
<tr>
<td>Enterprise zones</td>
<td>areas where the UK government offers companies help with start-up costs, reduced taxes on profits, and access to superfast broadband in order to attract them to the area</td>
</tr>
<tr>
<td>EU grants</td>
<td>funds to help the poorest regions of the EU whose GDP is below 75% of the EU average</td>
</tr>
<tr>
<td>Footloose</td>
<td>companies not tied to location, such as many high-tech companies</td>
</tr>
<tr>
<td>Foreign direct investment (FDI)</td>
<td>investment by one country into another country</td>
</tr>
<tr>
<td>Free trade</td>
<td>the free flow of goods and services, without the restriction of tariffs</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Gentrification</td>
<td>high-income earners move into run-down areas to be closer to their workplace, often resulting in the rehabilitation and regeneration of the area to conform with middle class lifestyles</td>
</tr>
<tr>
<td>Globalisation</td>
<td>increased connections between countries</td>
</tr>
<tr>
<td>Index of multiple deprivation (IMD)</td>
<td>a government measure of how deprived areas are based on factors such as employment, housing and education</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>the basic physical and organisational structures and facilities (i.e. buildings) a country needs to operate, such as roads and power supplies</td>
</tr>
<tr>
<td>Knowledge economy</td>
<td>an economy based on specialised knowledge and skill</td>
</tr>
<tr>
<td>Multiplier effect</td>
<td>when people or businesses move to an area and invest money in housing and services, which in turn creates more jobs and attracts more people</td>
</tr>
<tr>
<td>New economy</td>
<td>economic activities based on knowledge and information, rather than more traditional industries such as manufacturing</td>
</tr>
<tr>
<td>Northern powerhouse</td>
<td>a major core region of cities (with a similar population to London) that has the potential to drive the economy of northern England</td>
</tr>
<tr>
<td>Old economy</td>
<td>an economy based on traditional industries</td>
</tr>
<tr>
<td>Primary sector</td>
<td>sector of the economy involved with getting raw materials from the natural environment, such as farming, fishing and mining</td>
</tr>
<tr>
<td>Quality of life</td>
<td>a measure of how 'wealthy' people are, but measured using criteria such as housing, employment and environmental factors, rather than income</td>
</tr>
<tr>
<td>Quaternary sector</td>
<td>sector of the economy that is based on specialised knowledge and skill</td>
</tr>
<tr>
<td>Regional development grants</td>
<td>grants and advice to help businesses start up. Most are targeted at peripheral areas, but funds are small</td>
</tr>
<tr>
<td>Retail park</td>
<td>a shopping area on the edge of a town or city, usually having several large chain stores</td>
</tr>
<tr>
<td>Rural periphery</td>
<td>areas away from the urban core</td>
</tr>
<tr>
<td>Rural-urban fringe</td>
<td>the area where a town or city meets the countryside</td>
</tr>
<tr>
<td>Secondary sector</td>
<td>sector of the economy involved with manufacturing and assembling</td>
</tr>
<tr>
<td><strong>Studentification</strong></td>
<td>communities benefit from local universities which provide employment opportunities and a large student population which can regenerate pubs, shops and buy-to-let properties</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Tertiary sector</strong></td>
<td>sector of the economy involved with providing services, such as insurance, teaching and health care</td>
</tr>
<tr>
<td><strong>Trans-national corporation</strong></td>
<td>companies that operate in more than one country</td>
</tr>
<tr>
<td><strong>World city</strong></td>
<td>a city that plays a disproportionate role in world affairs and is a centre for finance and trade, e.g. London</td>
</tr>
</tbody>
</table>

---

**UK’s Human Landscape Revision Material**

---

**Urban and rural UK**

You need to know some key differences between urban core and rural places and how UK and EU government policies have attempted to reduce these differences.

**Definitions**

**Rural settlements** – in the UK, settlements with fewer than 10,000 inhabitants (fewer than 3000 in Scotland)

**Conurbation** – when a city has expanded outwards and absorbed smaller settlements that used to be separate

**Urban core** – the central part of a conurbation: high population density

**Urban fringe** – the settlement areas around the edge of the urban core: lower density

**Population density** – the number of people per square kilometre
Worked example

Study the population structure diagram opposite, which shows the age structure of UK urban and rural areas in 2001 and 2011.

Explain two reasons why the rural population structure has changed between 2001 and 2011. (4 marks)

People who work in cities often move to rural areas when they retire because of rural area attractions: quieter, less congested, natural.

Younger people who grow up in rural areas tend to move to urban areas because of wider job opportunities, higher pay, better services.

Economic differences

• There are more people working in the primary sector in rural areas: agriculture, forestry and fishing.

• Many of the people who live in rural areas work in urban areas.

• Rural settlements have lower average wages than urban cores.

UK and EU policies

Policies to reduce economic differences between urban and rural places include:

• The EU’s European Regional Development Fund – £2.6 billion (England). The EU invests in businesses in poorer regions to help them grow.

• Enterprise Zones – tax cuts to attract businesses to specific regions, plus superfast broadband.

The UK and migration

You need to know about migration numbers, distribution and age structure, and ways that immigration has increased ethnic and cultural diversity.

International migration to the UK

Immigration has increased over the last 50 years.

☑ In 1961, 3 per cent of people living in the UK were born in another country.

☑ In 2015, 13 per cent of UK residents were born in another country.

☑ In 2015, 8 million people born outside the UK lived here.

☑ In 2015, UK net immigration (the difference between those immigrating and those emigrating) was estimated at 336,000.

Immigration and age structure

Most immigrants are young and therefore more likely to have children. This influences UK age structure.
Immigration policy
- Current (2016) UK government policy is to reduce the level of net migration to 100,000 people per year.
- However, the UK is a member of the European Economic Area (EEA), the government cannot restrict the movement of EEA citizens to the UK.
- This means the UK's policy is to make immigration by non-EU people more difficult.

Immigrants come from many different EU and non-EU countries: the top five are India, Poland, Pakistan, Ireland and Germany.
London was the most popular destination for immigrants to the UK in 2012.
Northern Ireland was the only UK region with more emigrants than immigrants.

Study the age structure diagram for the UK in 2015 above.
Describe two ways in which immigration influences age structure. (2 marks)
Immigrants are usually young – in their 20s. This means immigrants can increase the number of 20 to 30-year-olds in a population structure.
This age is when most people have families, so immigration also tends to increase the number of babies and young children in a population.

Two clear points that correctly describe two influences.

Now try this
Explain one way in which European policy on immigration influences cultural and ethnic diversity in the UK. (2 marks)

Economic changes
Some regions of the UK that depended on primary and secondary sectors have now become successful tertiary centres, while other regions have not. You need to know about the differences in contrasting UK regions, for example north-east and south-east England.

There has been a big growth in the importance of tertiary and quaternary industry in the UK in the last 50 years.

The decline of the coal industry
In 2015 the last deep coal mine in the UK was closed. Although coal is still an important fuel in the UK, it is much cheaper to import it from other countries than use coal mined in the UK.

Some regions in the UK, such as the North East and South Wales, had a long history of coal mining. Whole communities depended on coal mining for work.

Where pits have closed down, new service industries have grown up, such as warehousing. However, wages in these industries are much lower than the coal miners had been able to earn previously.

Miners at Kellingley Colliery in December 2015 as the pit – the last UK deep coal mine – was closed.
Worked example

Study the fact file about the London Docklands.

Explain one reason why London has been able to deal with the decline in secondary industry. (2 marks)

London was already a global financial centre as well as an important manufacturing city. When secondary sector employment declined, London’s population declined too. Government investment (£1.8 billion) to encourage the redevelopment of the London Docklands allowed the financial industry (tertiary sector) to expand and create new jobs.

This answer uses relevant detail (e.g. £1.8 billion) to enhance the reason given.

Fact file: London Docklands

- In the 1930s, the London docks were the world’s largest. Products came to London from all over the British Empire.
- Global trade moved to container ships: these ships were too big for London docks.
- Between 1951 and 1981, 100,000 jobs dropped to just 27,000 in the Docklands.
- Jobs in manufacturing declined by 80 per cent in London after 1960 as manufacturing moved out of London and then abroad.
- In 1981, the government invested £1.8 billion on regenerating the Docklands.
- There was high demand for new offices. 100,000 new jobs were created in financial services and business services.

Now try this

Describe two reasons why the number of people employed in the primary sector has declined in the UK. (2 marks)

Globalisation and investment

Globalisation has meant increased FDI in the UK, including investment by TNCs in the UK economy.

Definitions

Globalisation – the process by which trade and investment build more and more connections between countries

Foreign direct investment (FDI) – when people in one country invest in businesses in another country to the extent that they gain significant control over how those businesses are run

Transnational corporations (TNCs) – businesses run from one country that have control over enterprises in other countries

Worked example

Study the map below, which shows the level of FDI in European countries in 2012. Identify which one out of the following countries from the map had the highest level of FDI in 2012. (1 mark)

A UK  B Denmark  C Belgium  D Germany

Why has FDI in the UK increased?

FDI in the UK increased by 88 per cent between 2005 and 2015. Why?

- Globalisation is strong in banking
• Globalisation is strong in banking and finance because money can be moved electronically around the world. London is a global centre for finance.
• Trade deals with developed and emerging countries make imports and exports cheaper and easier and create UK jobs.
• The EU encourages free trade between member states and sets up good trade deals for the whole EU with other countries.
• UK governments have encouraged FDI by privatising industries and allowing foreign companies to buy them.

Role of TNCs
TNCs have advantages and disadvantages for the UK economy.

 dinheiro 1: investment. Foreign companies have invested £1 trillion in the UK, creating hundreds of jobs.
 dinheiro 2: innovation. Foreign companies bring new technologies.

 disinheiro 1: security. Economic problems abroad can mean production gets shut down in the UK; job losses.
 disinheiro 2: competition. TNCs can outcompete UK companies due to the TNCs’ massive economies of scale.

Now try this
TNCs are able to reduce the amount of tax they pay on their sales in countries like the UK by setting up headquarters in low-tax countries like Eire or Luxembourg. Explain why this is seen as a disadvantage of TNCs.

(4 marks)

A UK city in context
For this case study, you will have learned about how a major UK city is changing. We use Birmingham as an example of a UK city here, but you should revise the city that you did in class.

City in context
Make sure you know about why your case study city is important: in the UK; in its region; and globally. You should consider its site, situation and connectivity.

For example, Birmingham is:
• located in the centre of England, with fast motorway and rail connections
• the main city of the West Midlands region, a major centre of manufacturing
• home to people from all over the world – one third of residents are from minority ethnic backgrounds.

If you are doing urban areas for one of your geographical investigation options, you will have done fieldwork and research on an urban area too. See pages 77–79 of this book for more on the urban geographical investigation option.

If you are doing rural settlements for your geographical investigation, you still need to revise your case study of a major UK city. Then you need to see pages 80–82 for more on the rural geographical investigation option.
City structure

How do the different parts of your city work – what is their function? Functions include: residential, industrial, tourism, retail, cultural or religious, centres for administration.

- Remember city sectors can be multifunctional.
- What examples do you have of how city sectors have changed over time?

How do the different parts of your city look?

- Where would you find the oldest buildings or the newest housing?
- How does population density change as you move through the city sectors?
- What is environmental quality like in different sectors; where would quality be lowest and highest?
- What evidence is there of land-use change in your city – for example, greenfield development on the urban-rural fringe, or brownfield development in the inner city?

For your UK city case study you need to be able to describe its structure:
- CBD
- suburbs
- inner city
- urban-rural fringe.

People travel to Birmingham's Bullring Shopping Centre from all over the UK. Located in Birmingham's CBD, the Bullring was redeveloped in 2003 at a cost of £50 million. 3.8 million visitors come to the Bullring each year.

Worked example

State two characteristics of the urban-rural fringe.

Land use is extensive because there is more space for expansion so, for example, retail centres have very large car parks.
There is a high residential population. This is an area dominated by expensive family housing.

This answer understands what is meant by 'characteristics'. Make sure you do more than say where the urban-rural fringe is located.

Urban change differences

Changes happen in different ways in different parts of the city. This leads to inequalities between different parts of the city – for example, in education, health and employment. You need to know the reasons for these inequalities.

Different models have been developed to explain urban change. Here are three key ideas.

1. New arrivals to the city move to the cheapest areas in the inner city.
2. More established residents of the city move to the suburbs, where housing is more expensive but living conditions are better.
3. Industry and housing often develop along main roads and rail lines – this causes the wedges in the second diagram.
**The Index of Multiple Deprivation**

*Deprivation* means not having access to the same resources and opportunities as other people.

The *Index of Multiple Deprivation (IMD)* scores small areas across the whole UK for a range of different measures. All the areas are ranked from 1, the most deprived in the UK, to 32482: the least deprived area.

**Why do cities have deprivation ‘hot spots’? Reasons include:**
- a lack of jobs as industry moves out of the inner city, leaving behind those residents who cannot afford to move
- the inner city areas have old housing, which residents cannot afford to maintain: lowering environmental quality.
- crime increases with deprivation, reducing investment in the inner city.

**City change and migration**

In 2011, 42 per cent of Birmingham’s population was from an ethnic minority population, many from Pakistan and India.

People come to Birmingham now from many places and for many reasons. New arrivals can feel more at home among communities of people from their old country.

- 40 per cent of Birmingham’s residents live in areas described as among the most deprived.
- 10 per cent in England.
- The areas of deprivation are found in a ring around the city centre.

**Worked example**

Identify two ways in which recent immigrants to a city impact on the character of city areas. (2 marks)

Immigrants can bring new cuisines with them and that can mean new types of restaurants and new types of food in shops and supermarkets.

New immigrants may strengthen the small business sector by increasing the number of shops and widening the types of services provided in the area.

---

**City challenges and opportunities**

As the city changes it creates different challenges and opportunities – for example, regeneration of deindustrialised inner city areas.

**Decline and decentralisation**

In the second half of the 20th century, many UK cities went into decline: losing population. This was because of deindustrialisation – industries moving out of cities to cheaper locations.

Decentralisation also occurred. Land was cheaper and more space was available in the suburbs, so out-of-town shopping centres and business parks developed away from the urban core.

**Worked example**

Study the OS 1:25000 map extract below, which includes the Birmingham Business Park.

Identify two opportunities that this city location offers for a business park development. (2 marks)

This location on the urban-rural fringe has excellent transport links (a motorway and major roads) and plenty of flat land for business park expansion.

**Economic and population growth**

Growth in cities occurs because economic opportunities attract people to live and work in city areas.

- *Sprawl on the rural-urban fringe* is driven by demand for housing, especially more expensive housing with a rural character.
- While manufacturing industry has declined in cities, financial and business services have expanded to replace lost jobs in the CBD and inner city. Globalisation means finance TNCs locate in major UK CBDs.
- *Gentrification* occurs when wealthier people move into deprived city areas where property is cheap. As these areas get more investment, poor residents are pushed out as rents and house prices rise.
- *Studentification* occurs in cities with universities when large numbers of young people become residents in student
accommodation or other houses and flats. This can mean changes to land use with the construction of university accommodation blocks, and also social and cultural changes resulting from areas of the city becoming dominated by students.

- **Culture and leisure**: city authorities and private investors have built landmark cultural buildings and leisure facilities in city centres and on city outskirts.

**Now try this**

Identify one example for your case study city of decentralisation or one example of growth/ expansion. (1 mark)

Can you find these two examples on OS maps of your city?

**Improving city life**

There are different strategies that can improve ways of life in a city. Regeneration schemes can redevelop deprived areas, while environmental initiatives can improve quality of life.

**Positive impacts of regeneration**
- New job opportunities in the area.
- Residents have better access to services – new retail outlets, cinemas, leisure services.
- Derelict buildings get repurposed or rebuilt.

**Negative impacts of regeneration**
- The area becomes too expensive for poorer residents to live in.
- New jobs may be low-paid service jobs – bar work, café work – not higher-wage skilled jobs.
- Regeneration strategies have been similar in many UK cities; cities lose individuality.

**Affordable housing**
City authorities run affordable housing schemes.

- Property developers must include a set number of affordable homes when they are building new housing estates.
- Landlords who rent property also work with the city authorities to make low-rent housing available to poorer people.
- City authorities provide support to help people find affordable housing.

Sustainable cities are more pleasant places to live in: greener, less polluted, easier to get around in and less expensive to live in.
Use brownfield sites for development to:
- improve appearance of these areas
- create new green spaces in the city.

Reduce waste by:
- recycling – 90% of household waste is recyclable
- reusing, e.g. bottles, plastic bags, etc.

Renovate old buildings to:
- enhance the appeal of the area
- improve energy efficiency.

New housing that is:
- affordable to rent or buy
- energy efficient.

Improve public transport systems by:
- linking bus, tram and rail routes
- providing feeder services to housing estates
- using environmentally friendly vehicles.

Involve communities in local decision making:
- consult local people instead of imposing plans
- put people first; ask for and act on their ideas
- foster the growth of a community spirit.

Ways to make urban living in the UK more sustainable

Worked example

Explain two ways in which quality of life in urban areas can be improved. (4 marks)
Investing in public transport, introducing congestion charging and pedestrianising shopping streets significantly improves urban quality of life.
Encouraging developers to include entertainment facilities like theatres and restaurants in new CBD retail developments improves quality of life because it means these areas are used at night as well as in the day.

Now try this

Describe two examples from your case study city of how quality of life has been improved. (3 marks)

The city and rural areas

The city and the rural areas around it (accessible rural areas) are linked together so that changes in the city affect the rural areas too.

There are flows between rural and urban areas.

- **migration**
  - rural-urban: for jobs, lifestyle, education
  - urban-rural: for quality of life (commuters)

- **services**
  - rural residents use urban hospitals, universities
  - urban residents use rural areas for recreation

- **goods**
  - rural residents get consumer goods from cities
  - urban residents get food from rural areas

The relationship between urban areas and accessible rural areas has costs and benefits.

- **Economic**: people living in rural areas but working in the city can get higher wages.
- **Social**: people in accessible rural areas can access urban centralised services, like hospitals.
- **Environmental**: urban residents can access pleasant rural landscapes for recreation.
- **Economic**: urban decentralisation as developments move to the rural-urban fringe.
- **Social**: rural locations become too expensive for local young people to buy homes.
- **Environmental**: development of greenfield sites makes rural areas more urban.
UK's Human Landscape Practice
Questions

Study the photograph, which was taken in South Wales. Use evidence from the photograph and your own knowledge to assess the effects of changes in the economic and employment structure of different parts of the UK. (12 marks)

In this question, four of the marks awarded will be for your spelling, punctuation and grammar and your use of specialist terminology.

Before attempting to answer the question, remember to BUG it.

✓ Box the command word.
✓ Underline the following:
  • the theme
  • the focus
  • if you need to refer to specific evidence
  • if there is more than one part to the answer.
✓ Glance back over the question – to make sure you include everything in your answer.
Study the photograph, which was taken in South Wales. Use evidence from the photograph and your own knowledge to assess the effects of changes in the economic and employment structure of different parts of the UK. (12 marks)

**Focus:** You must consider changes, not non-changing situations.

**Number of examples:** You must refer to more than one change.

**PEEL your answer**

Use PEEL notes to structure your answer. This will help you to communicate your ideas to the examiner in the clearest way.

- **Point** – Make two or three points in detail, rather than lots of points in less detail. Don’t use bullet points.

- **Explain** – Give reasons by using sentence starters such as: ‘This is because ...’, ‘One reason is ...’.

- **Evidence** – Include facts and other details from named examples to back up your point. Each point – with explanation and evidence – should represent a separate PEE paragraph.

- **Link** – To link different points to each other, use PEE sentence starters such as: ‘Another important point is ...’ or ‘Of more importance is ...’. Make sure your conclusion also links back to the question.

**Quality not quantity:** You will not be marked simply on the number of points you make, but on the quality of your answer. That means the quality of the content and how well you structure your answer.

**SPaG:** You are not awarded extra marks for spelling, punctuation and grammar for this question. However, you should use your best English writing style and check your answer carefully.
Sample answer 5

In recent years manufacturing industries in the UK have been replaced by service industries. In the photograph, there is evidence of an old manufacturing plant in South Wales being cleared after it closed down. Lots of the area has been cleared but there are still some abandoned buildings left. This is a brownfield site. The people who used to work in that industry will have lost their jobs and the area will have a high rate of unemployment. People will have less money to spend and so shops, etc. will also close down. People’s health may suffer. Environmentally, the brownfield site is very unattractive. However, these areas can be regenerated.

There have been similar changes in the north-east of England, for example, near Rotherham in Yorkshire. Traditionally people in this area worked in coal mines or industries like iron and steel manufacturing and shipbuilding. When these closed down people had to look for work elsewhere. However, many of the available jobs were in larger cities so people had to commute, and some jobs were only temporary and did not pay very high wages. The jobs available were in transport and in call centres. As well as the economic effects, there were also social effects as the changes affected people’s lives.

The Temple Quarter of Bristol is an example of an old industrial site that is being redeveloped. It is near the centre of Bristol and so is accessible for people to work, live and socialise in. It is being used for high-tech industries and so provides jobs for the area. The development of the high-tech industry is a major benefit. Science and business parks also attract high-tech industries. Science parks are often near universities, as in Southampton, and some business parks make use of brownfield sites as the one near Newcastle. London also attracts these new industries and this has led to the development of the financial, creative and IT industries in Canary Wharf.

Changes in the economic and employment structure of different parts of the UK have therefore resulted in a range of effects. These are social, in that they have affected people’s quality of life, economic, due to the availability or non-availability of employment, and finally environmental, if polluted and derelict land remains.

Feedback: This answer is not perfect as it moves away from the main focus of the question a little, especially when dealing with regeneration of the brownfield site in Bristol. However, it makes effective use of the photograph and own knowledge of appropriate examples to assess the effects of the changes to economic and employment structure. There is also a meaningful conclusion, based on the evidence presented and linking back to the question.

There are no problems with spelling, punctuation or grammar and the answer shows appropriate use of specialist terminology.

Level = 3  Marks = 8  SPaG = 4

1. Describe two ways in which the UK government aims to reduce regional differences within the UK. (2 marks)

2. Describe two reasons why the number of people employed in the primary sector has declined in the UK. (2 marks)
3. Describe two examples from your case study city of how quality of life has been improved. (3 marks)
4. Explain how the government’s immigration policy has changed the UKs diversity. (4 marks)
5. Explain how globalisation has increased FDI in the UK. (4 marks)
6. Name one factor, other than globalisation, that has contributed to the increase in FDI in the UK. (1 mark)
7. State one positive effect that TNCs have had on the UK economy. (1 mark)
8. Suggest one possible negative effect of over-reliance on TNCs in the UK (2 marks)
9. For a UK city you have studies, explain why some areas of the city have declined. (4 marks)
10. Explain the patterns of migration for a named UK city. (4 marks)

Geographical Investigations (Fieldwork)
Learning Checklist

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Investigating coastal change and conflict</strong></td>
<td></td>
</tr>
<tr>
<td>I understand different questions that can be investigated through fieldwork in the coastal environment.</td>
<td></td>
</tr>
<tr>
<td>I understand how to use one quantitative fieldwork method to measure coastal management.</td>
<td></td>
</tr>
<tr>
<td>I understand how to use one qualitative fieldwork method to collect on data on coastal management.</td>
<td></td>
</tr>
<tr>
<td>I understand how to use two secondary data sources.</td>
<td></td>
</tr>
<tr>
<td><strong>Investigating urban areas</strong></td>
<td></td>
</tr>
<tr>
<td>I understand different questions that can be investigated through fieldwork in the urban environments.</td>
<td></td>
</tr>
<tr>
<td>I understand how to use one qualitative fieldwork method to collect data on perceptions of quality of life.</td>
<td></td>
</tr>
</tbody>
</table>
I understand how to use one qualitative fieldwork method to collect data on environmental quality.

I understand how to use secondary sources such as census data and one other method.

### Geographical Investigations (Fieldwork) 

#### Key Words

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>being correct or exact; having no errors</td>
</tr>
<tr>
<td>Annotated</td>
<td>to have a short explanation or comments added to text or drawings</td>
</tr>
<tr>
<td>Anomalies</td>
<td>unusual data which do not fit the general pattern of results</td>
</tr>
<tr>
<td>Census</td>
<td>an official count or survey, usually of the population in an area, that also collects information about them, such as age, sex, or occupation</td>
</tr>
<tr>
<td>Environmental quality survey</td>
<td>measures different characteristics of a place based on numerical judgements with a simple scoring system</td>
</tr>
<tr>
<td>GIS (geographical information system)</td>
<td>a computer-based system for capturing, storing, analysing and presenting geographical information that allows you to overlay data</td>
</tr>
<tr>
<td>Primary data</td>
<td>first-hand information; fieldwork data that you collect yourself (or as part of a group)</td>
</tr>
<tr>
<td>Qualitative data</td>
<td>techniques that don’t involve numbers or counting. They are subjective and involve the judgment of the person collecting</td>
</tr>
<tr>
<td>Quantitative data</td>
<td>data that can be measured numerically</td>
</tr>
<tr>
<td>Random</td>
<td>where samples are chosen by chance, and every sample has an equal chance of being selected</td>
</tr>
<tr>
<td>Range</td>
<td>the difference between the highest and lowest values in a set of data</td>
</tr>
<tr>
<td>Reliability</td>
<td>the extent to which an investigation produced consistent results</td>
</tr>
</tbody>
</table>
Sample size | the number of measurements being taken
---|---
Secondary data | data that has been collected by someone else
SMP (Shoreline Management Plan) | an approach which builds on knowledge of the coastal environment and takes account of the wide range of public interest to avoid piecemeal attempts to protect one area at the expense of another
Stratified | collecting a sample made up of different parts
Systematic | working to a plan or set of methods to collect data
Trend | the general direction of something
Validity | being logically or factually sound

Geographical Investigations (Fieldwork) Revision Material

Investigating coasts: developing enquiry questions

Enquiry questions are the kind of questions that can be investigated by fieldwork in coastal environments. They give fieldwork a purpose. You will have put together enquiry questions for your fieldwork.

In your exam you will be asked questions about the fieldwork you did, and also some questions where you will need to apply what you learned on your fieldwork to new situations.

An enquiry question often relates to a geographical theory: the sort of theory that can be tested through fieldwork.
**Key questions/hypotheses follow from the enquiry question, and they can be tested.** For example, an enquiry question could be:
- How do different methods of coastal management create benefits and conflicts?
A key question following on from this could be:

The enquiry process
There are six stages in the enquiry process and you will be asked questions on at least two of them in the exam.

Geographical examples and theories
You need to be able to identify the key geographical concepts that the investigation is based on.
For example, consider the enquiry question: *How and why do beach profiles vary in [name of coastal location]?*
To be able to evaluate different aspects of this investigation you would need to understand that beach profiles are affected by: wave type; wave
Do people prefer hard engineering to soft engineering in managing coastal processes? (2 marks)

frequency; wave direction/longshore drift; local geology; pebble size; beach management strategies (e.g. groynes).

Worked example

Explain one reason why Site 3 is not appropriate for comparing different coastal management strategies with Sites 1 and 2. (2 marks)

Site 3 is sheltered from waves approaching from the north-east and Sites 1 and 2 are sheltered from waves approaching from the south-west. The results from Site 3 will be different because of these factors rather than only because of different management approaches.

Now try this

Describe the location of your coastal management fieldwork. Explain why it was a good place to investigate coastal management and coastal processes. (2 marks)

Investigating coasts: techniques and methods

You will have used several different fieldwork techniques and methods in your investigation. You need to know what these techniques and methods are appropriate for, and what things to watch out for when using them, to avoid making errors in the field.

Worked examples

Explain one reason why the method you used to measure beach sediment was appropriate to the task. (2 marks)

Name of method used: Calleix roundness index

It was appropriate because the beach was a pebble beach with a wide range of particle sizes and shapes. The Calleix roundness index provided a consistent way of measuring pebble roundness.

Explain one advantage of using secondary data to support your investigation. (2 marks)

We used a geology map. The geology map helped us choose good sites to study because it gave us information about where different types of rock are likely to occur.

For the exam you need to know about:

- one quantitative fieldwork method to measure how coastal management has affected beach morphology and sediment characteristics. Quantitative methods record data that can be measured as numbers.
- one qualitative fieldwork method to collect data on coastal management measures and their success. Qualitative methods record descriptive data, such as how people feel.

You need to be able to say why the method you used was appropriate: there isn’t just one correct method.

For the exam you need to know about two secondary data sources:

- a geology map such as the Geology of Britain viewer
- one other source, which your teacher is likely to suggest for you.

Secondary data are data someone else has
were located along the coast.

Explain one possible source of error when measuring beach sediment. (2 marks)
You need a way to make sure that you measure a representative sample of pebbles at each location along the beach profile. Using a quadrat helps you to avoid picking pebbles just because they look like they fit with your hypothesis.

**Now try this**

Study these two images. Which one shows a quantitative fieldwork method and which one shows a qualitative fieldwork method? (2 marks)
- Measuring beach gradient with a clinometer
- Interviewing residents and visitors on their views of coastal management measures

**Investigating coasts: working with data**

You need to know about ways to process and present fieldwork data, how to analyse it and how to make conclusions and summaries backed up by evidence from the data.

**Worked example**

A student investigated what recreational activities people had come to Borth beach for, using a questionnaire survey. They presented their data using a line chart.

Explain one weakness of using a line chart to present data from a questionnaire survey. (2 marks)

**Data presentation disadvantages**

This is a list of the top five disadvantages. You might be able to think of others, too.

1. Scattergraphs: can only show relationships between two variables; inappropriate for more than two.
2. Pie charts: lots of small segments make the chart difficult to interpret.
3. Choropleth maps: hide variations within areas; give an impression of boundaries between areas instead of gradual transitions.
4. Triangular graphs: data must be in %.
5. Bar graphs: do not show relationships between categories.
A line chart is appropriate for presenting continuous data. Survey data involving categories, like this fieldwork data, are discrete. A pie chart or bar graph would have been a more appropriate choice.

Conclusions and summaries
The job of the conclusion is to use evidence from the investigation to answer the key question or hypothesis.

Analysing data
Key steps for successful data analysis are:

1. **Describe what you see:**
   - What are the overall patterns or main features?
   - Are any figures or features in groups?
   - What about anomalies or exceptions?

2. **Use evidence** — precise numbers or facts from the data — in your analysis.

3. **Give reasons** for the patterns you see in the data.

4. **Link these reasons to geographical concepts/theories if you can.**

Now try this
To measure beach morphology, students divided the beach into 10 segments by placing a ranging pole at each break of slope, and then they measured the length of each segment and its slope angle in degrees and minutes. Which one of the following would be an appropriate way of presenting their data?

- [ ] A beach transect diagram
- [ ] B Abney level
- [ ] C Power’s scale of roundness
- [ ] D distribution diagram

(1 mark)

Investigating dynamic urban areas: developing enquiry questions

Enquiry questions are the kind of questions that can be investigated by fieldwork in urban environments. They give fieldwork a purpose. You will have put together enquiry questions for your fieldwork.

In your exam you will be asked questions about the fieldwork you did, and also some questions where you will need to apply what you learned on your fieldwork to new situations.

The enquiry process
There are six stages in the enquiry process and you will be asked questions on at least two of them in the exam.

Geographical examples and theories
You need to be able to identify the key geographical concepts that the investigation is based on.

For example, for the enquiry question: How does urban quality of life vary within inner city residential locations in [city name]?

Geographers would use theories about urban change that help explain why inner city areas often experience issues of deprivation:
Worked example

Study this map opposite, which shows levels of multiple deprivation in wards of Brighton in 2010. Students at the school marked on the map decided that ward 6 would not be an appropriate place to carry out fieldwork on variations in quality of life in Brighton’s inner city wards. Explain one reason why this ward was not appropriate. (2 marks)

Ward 6 is a relatively large ward, which would have made carrying out a survey there very time-consuming.

There are several other reasons why ward 6 might not have been appropriate – for example, ward 3 has the same level of deprivation as ward 6 and is of a comparable size to other inner city wards. However, only one reason was required.

Now try this

Describe the location of your urban fieldwork. Explain why it was a good place to investigate how and why quality of life varies within urban areas. (4 marks)

Investigating dynamic urban areas: techniques and methods

You will have used several different fieldwork techniques and methods in your investigation. You need to know what these techniques and methods are appropriate for, and what things to watch out for when using them to avoid making errors in the field.

Worked examples

Explain one reason why the method you used to measure environmental quality in the urban area you studied was appropriate to the task. (2 marks)

Name of method used: An environmental quality survey

It was appropriate because using the same survey questions between sites allowed me to make meaningful comparisons.

You have used census data in your investigation. Explain one way using census data supported your investigation. (2 marks)

The census data gave us information such as the percentage unemployed in each ward, and the percentage with no qualifications or with degree level qualifications. Using this information helped us select wards with contrasting socio-economic profiles to include in our investigation.

For the exam you need to know about:
- one qualitative fieldwork method to collect data on the views and perceptions of quality of life. Qualitative methods record descriptive data such as how people feel.
- one quantitative fieldwork method to collect data on environmental quality. Quantitative methods record data that can be measured as numbers.
- you need to be able to say why the method that you used was appropriate; there isn’t just one correct method.

For the exam you need to know about two secondary data sources:
- census data such as the Office for National Statistics Neighbourhood Statistics.
- one other source, which your teacher is likely to suggest for you.
Explain one possible source of error when you collected data on perceptions of quality of life. (2 marks)

One possible source of error was my sampling strategy. I find it easier to talk to people who are about the same age as me so I didn’t ask many older people to do the survey questionnaire. So the sample would be biased toward the perceptions of younger people and was therefore not 100% representative.

Secondary data are data someone else has already collected. It will be useful for you to know about the different ways in which secondary data sources supported your investigation, and also about any particular advantages and disadvantages of your secondary data sources.

You may be asked questions that require you to reflect on the methods you used and consider any ways in which problems could have occurred. For the exam, it will be useful to revise possible disadvantages of your urban fieldwork method.

Now try this

One indicator of urban quality of life is ‘burglability’ – how secure an area is. Name three things you would look for in an urban area to measure ‘burglability’. (3 marks)

Investigating dynamic urban areas: working with data

You need to know about ways to process and present fieldwork data, how to analyse it and how to make conclusions and summaries backed up by evidence from the data.

The exam may ask questions about how the presentation of fieldwork data could be improved. Use your knowledge of what the advantages and disadvantages are of different types of data presentation.

Data presentation advantages

This is a list of the top five disadvantages. You might be able to think of others, too.

1. Isopleth maps: ideal for showing gradual change over an area.
2. Proportional symbols map: very accessible and easy to understand.
3. Kite diagrams: show changes over distance (e.g. transect data).
4. Dot maps: give a clear indication of differences in density for a geographic distribution (e.g. tourist signage).
5. Flow maps: show direction and volume of movement (e.g. for vehicle counts).

A student investigated variations in environmental quality in different urban locations. She presented her data using a radar graph, one graph for each location. Explain one advantage of using a radar graph to present these data. (2 marks)

An advantage of a radar graph is that it can display data on several different...
Geographical Investigations (Fieldwork)

Practice Questions

You have carried out a fieldwork investigation in a coastal environment. Assess the effectiveness of the ways you presented the data collected in your coastal fieldwork. (8 marks)

Before attempting to answer the question, remember to BUG it.

✓ Box the command word.
✓ Underline the following:
  • the theme
  • the focus
  • if you need to refer to specific evidence
  • if there is more than one part to the answer.
✓ Glance back over the question – to make sure you include everything in your answer.
Assess the effectiveness of the ways you presented the data collected in your coastal fieldwork. (8 marks)

Topic: This question is related to the topic of Geographical investigations: Fieldwork in a physical environment, which will be assessed in Paper 2, Section C1 of your GCSE exam. This question is optional, but you must answer either this question or the other question in Section C1. You need to be clear about the nature of the coastal fieldwork you carried out.

PEEL your answer

Use PEEL notes to structure your answer. This will help you to communicate your ideas to the examiner in the clearest way.

- **Point** – Make two or three points in detail, rather than lots of points in less detail. Don’t use bullet points.
- **Explain** – Give reasons by using sentence starters such as: ‘This is because ...’, ‘One reason is ...’
- **Evidence** – Include facts and other details from named examples to back up your point. Each point – with explanation and evidence – should represent a separate PEE paragraph.
- **Link** – To link different points to each other, use PEE sentence starters such as: ‘Another important point is ...’ or ‘Of more importance is ...’. Make sure your conclusion also links back to the question.

**Quality not quantity**: You will not be marked simply on the number of points you make, but on the quality of your answer. That means the quality of the content and how well you structure your answer.

**SPaG**: You are not awarded extra marks for spelling, punctuation and grammar for this question. However, you should use your best English writing style and check your answer carefully.
1. Explain why it was a good place to investigate coastal management and coastal processes (2 marks)

2. Describe one qualitative fieldwork method you used to investigate the success of a coastal management measure. (2 marks)

3. Evaluate the suitability of your chosen methods of data presentation in helping you make conclusions about the relationship between coastal management and coastal processes (8 marks)

4. Explain how one of your primary data collection techniques was appropriate to the task (3 marks)
5. Describe two strengths of one of the data presentation techniques that you used. (4 marks)

6. Using an annotated diagram, explain the effectiveness of one coastal management measure you studied. (4 marks)

7. Assess the extent to which your results allowed you to reach a valid conclusion. (8 marks)

8. Suggest one way in which the reliability of your data could be improved (2 marks)

Students investigating variations in urban quality of life in Bristol used the following census data as part of their fieldwork.

<table>
<thead>
<tr>
<th>Census data 2011</th>
<th>Whole of Bristol</th>
<th>Stoke Bishop</th>
<th>Filwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of owner-occupied houses</td>
<td>55</td>
<td>81</td>
<td>45</td>
</tr>
<tr>
<td>Percentage of homes with no cars</td>
<td>28.9</td>
<td>8.2</td>
<td>36.8</td>
</tr>
<tr>
<td>Percentage of children living in poverty</td>
<td>25</td>
<td>4</td>
<td>36</td>
</tr>
<tr>
<td>Number of crimes per 1000 people</td>
<td>85</td>
<td>20</td>
<td>110</td>
</tr>
<tr>
<td>Life expectancy in years</td>
<td>80</td>
<td>83</td>
<td>78</td>
</tr>
<tr>
<td>Percentage of children gaining 5 or more GCSEs, including Maths and English</td>
<td>69</td>
<td>94</td>
<td>36</td>
</tr>
<tr>
<td>Percentage of single parents with children</td>
<td>0</td>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td>Percentage of unemployed aged 16–24 years</td>
<td>27</td>
<td>21</td>
<td>34</td>
</tr>
<tr>
<td>Percentage of homes with no central heating</td>
<td>2.8</td>
<td>2.1</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Assess the usefulness of this data in coming to conclusions about how the quality of life varies in the different parts of Bristol. (8 marks)

Before attempting to answer the question, remember to BUG it.

✓ Box the command word.
✓ Underline the following:
  • the theme
  • the focus
  • if you need to refer to specific evidence
  • if there is more than one part to the answer.
✓ Glance back over the question – to make sure you include everything in your answer.
Assess the **usefulness** of this data in coming to conclusions about how the quality of life varies in **these parts** of Bristol. (8 marks)

**Topic:** This question is related to the topic of Geographical investigations: Fieldwork in a human environment, which will be assessed in Paper 2, Section C2 of your GCSE exam. This question is optional, but you must answer **either** this question or the other question in Section C2. Quality of life is more subjective than standard of life.

**Number of examples:** The question refers to these parts, so you must consider the data given for the two specific areas of Bristol.

**PEEL your answer**

Use **PEEL** notes to structure your answer. This will help you to communicate your ideas to the examiner in the clearest way.

- **Point** – Make two or three points in detail, rather than lots of points in less detail. Don’t use bullet points.
- **Explain** – Give reasons by using sentence starters such as: ‘This is because ...’, ‘One reason is ...’
- **Evidence** – Include facts and other details from named examples to back up your point. Each point – with explanation and evidence – should represent a separate PEE paragraph.
- **Link** – To link different points to each other, use PEE sentence starters such as: ‘Another important point is ...’ or ‘Of more importance is ...’ Make sure your conclusion also links back to the question.

**Quality not quantity:** You will not be marked simply on the number of points you make, but on the quality of your answer. That means the quality of the content and how well you structure your answer.

**SPaG:** You are not awarded extra marks for spelling, punctuation and grammar for this question. However, you should use your best English writing style and check your answer carefully.
1. Describe the location of your urban fieldwork. Explain why it was a good place to investigate how and why quality of life varies within urban areas (4 marks)

2. Explain one weakness of the technique you used to investigate environmental quality (2 marks)

3. Describe one technique you used to present the secondary data you used in your urban study (2 marks)

4. Explain which sampling technique (e.g. random, stratified or systematic) was best suited to your investigation (2 marks)

5. State two ways in which you managed the risks associated with your fieldwork (2 marks)

6. You used census data in your investigation. Explain how this data was useful (2 marks)
7. Other than the data you collected, suggest one source of data that would have helped you to answer your origin question. (2 marks)

8. Explain how you adapted your data presentation techniques to show your results effectively (2 marks)

9. Explain one limitation of your data presentation methods (2 marks)

10. Explain how collecting data on environmental quality allowed you to reach conclusions about why quality of life varies within the area you studied (4 marks)

11. Evaluate the suitability of the site you chose for data collection (8 marks)