COASTAL LANDSCAPES PUPIL WORKBOOK



Coastal Processes

Geomorphic processes shape distinctive river landscapes in the UK through weathering, mass movement, erosion, deposition and transportation.

Erosion	Weathering

Write each process in the correct column in the table above. Freeze-thaw, Hydraulic Action, Abrasion, Biological, Attrition, Solution, Carbonation, Oxidation.

1. Define the process of saltation. [1]

2. Define the process of abrasion. [1]

3. Define the process of freeze-thaw weathering. [1]

4. The table below names three weathering processes. Use arrows to match each process with the correct description. [2]

Process	Description
Biological	Breakdown of rocks into smaller rocks by water, ice or wind.
Mechanical	The disintegration of rocks caused by reactions.
Chemical	Rocks are broken down by living organisms including animals and plants.

Coastal Processes

Complete the definitions for the different types of erosion below by	
selecting the key words from the bank below:	

Hydraulic action- the power of the ______ as it smashes against the cliffs. Air becomes trapped in the ______ in the rock causing it to break apart.

Abrasion-pebbles grind along the sea bed, much like	·
Overtime the bed, cliffs and rocks	

Attrition- this is when rocks in the sea knock against each other. Overtime they break into smaller and more ______ rocks.

Solution- this is when the acidic sea water ______ certain rocks. In the UK, alkali rock such as ______ is prone to this process of erosion.

Waves, Cracks, Sandpaper, Smoothen, Rounded, Chalk, Dissolve.

Using the image below, annotate to show how each type of erosion causes the sea bed and cliffs to be worn away.



Coastal Landscapes (Processes)

Coastal landscapes are shaped by the same types of geomorphic processes as rivers. However, there are differences in the way that they shape the land. Make sure that you learn that geomorphic processes are different in coastal landscapes.



Figure 1 photograph of pebbles.

1. Study Figure 1, which shows a photograph of pebbles. Which process has shaped the pebbles? [1]

A Hydraulic ActionB AbrasionC SolutionD Attrition

How does biological weathering differ from chemical weathering?
[2]

3. Explain the process of longshore drift. You may use a diagram. [3]

This is a strong hint to use a diagram. Number the stages to help explain in a logical order.

Coastal Processes: Waves

There are two different types of waves at the coast, constructive and destructive. They can affect the coastline in different ways.



Constructive	Destructive

Write each characteristic in the correct column in the table above.

Strong swash, weak swash, weak backwash, strong swash, high frequency, low frequency, tall in height, short in height, long wavelength, short wavelength, erodes, constructs.

Challenge- use your own knowledge to add more to the columns in the table.

Coasts create a range of distinctive landforms in the UK which include spits, headlands and bays as well as a coastal stack (crack, cave, arch, stack).

1. Explain the stages in formation of a coastal stack. [4]

Showing 'stages' is often best done by using diagrams. Draw an annotated diagram below using the key terms in the key terms box.

Key terms

Headland Gravity



Coasts create a range of distinctive landforms in the UK which include spits, headlands and bays as well as a coastal stack (crack, cave, arch, stack).

1. Explain how geomorphic processes influence the formation of a coastal stack. You may use a diagram. [4]

Top tip: Don't just explain the formation of an arch. Focus on how processes influence its formation.

2. Suggest how the arch may change in the future. [2]

Want more?

- 1. Explain the formation of a headland/bay/spit/beach. [4]
- 2. Explain the stages in the formation of a beach/bay/stack/cave/arch/headland. [4]

Coasts create a range of distinctive landforms in the UK which include spits, headlands and bays as well as a coastal stack (crack, cave, arch, stack).

1. Complete the passage below to show the formation of headlands and bays using the key word bank.

Headlands and Bays

Cliffs along the coastline do not ______ at the same pace. When a stretch of coastline is formed from different types of rock, headlands and bays can form.

Bands of ______ rock such as clay and sand are weaker and therefore they can be eroded quickly. This process forms bays. A bay is an inlet of the sea where the land curves ______, usually with a beach. ______ rock such as chalk is more ______ to the processes of erosion. When the softer rock is eroded inwards, the hard rock sticks out into the sea, forming a ______.

Bays are sheltered with constructive waves which deposit sediment to form a



Coasts create a range of distinctive landforms in the UK which include spits, headlands and bays as well as a coastal stack (crack, cave, arch, stack).

1. Explain the formation of a coastal spit. [4]



Point	Sentence Starter
Explain why sediment (sand and rocks) are moved along a beach	Sediment is moved along a beach because
Explain what happens to the coastline and the beach	The coastline
Explain what happens to the end of the spit	At the end of the spit
Explain what forms behind the spit and why	Behind the spit This is because

Write your answer here. You may use the diagram and table above to help.

Coastal Management

Coastal landscapes in the UK can be managed using different strategies. These are known as hard and soft engineering. These strategies have both positives and negatives to people and the environment.



1. Study Figure 2, which shows a photograph of a coastal management strategy. What is shown in Figure 2? [1]

Figure 2 a coastal management strategy

A Groyne B Gabion C Sea Wall D Revetment

2. How does the management strategy benefit the coastal landscape? [2]

3. Explain how the coastal management strategy impacts the coastline negatively. [3]

4. What is soft engineering? [1]

5. What is hard engineering? [1]

Coastal Management

Coastal landscapes in the UK can be managed using different strategies. These are known as hard and soft engineering. These strategies have both positives and negatives to people and the environment.



1. Study Figure 3, which shows a photograph of a coastal management strategy. What is shown in Figure 3? [1]

Figure 3 a coastal management strategy

A Groyne B Gabion C Sea Wall D Revetment

2. How does the management strategy benefit the coastal landscape? [2]

3. Explain how the coastal management strategy impacts the coastline negatively. [3]

4. Explain the advantages and disadvantages of using hard engineering strategies to protect the coastline. [4]

Alternative Questions

- 1. Draw an annotated diagram of a coastal stack.
- 2. Draw an annotated diagram of headlands and bays.
- 3. Explain the advantages of sea walls. [4]
- 4. What is meant by the term hard engineering?
- 5. What is meant by the term soft engineering?
- 6. Explain the formation of a coastal stack. [4]
- 7. Explain the formation of a coastal spit. [4]
- 8. Explain the four types of erosion. [4]
- 9. Explain how longshore drift works. [3]
- 10. Explain how the sea transports sand and rocks. [4]
- 11. Explain the different features of coastal waves. [4]