

GCSE Geography



Coasts

Knowledge and Assessment Organiser

Student name:



To what extent do people manage and protect our coastlines effectively?

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Key Terms

Abrasion: The pebbles being transported in the sea water wear away the cliff.

Attrition: The particles are knocked about as they are transported, and they gradually become more rounded and reduced in size.

Coast: Where land meets rocks.

Backwash: The movement of sediment in the water back towards the sea in a straight line.

Erosion: The wearing away of the cliff by abrasion, hydraulic action, solution and attrition.

Geology: The type of rock.

Hydraulic action: The sheer force of the water by itself can erode material from the cliff.

Longshore drift: The zig zag movement of sediment along the beach.

Mass movement: The downward movement of material.

Overhang: The part that extends over or hangs above something below.

Prevailing: Most common (wind direction).

Saltation: Material bounced along the seabed.

Solution: Some rocks such as limestone are subject to chemical attack and slowly dissolve in the water.

Suspended load: Very small and light material, usually fine clay and silt, transported by the sea in suspension.

Sustainability: The ability to maintain something at a certain level while protecting people (social), ensuring costs don't outweigh benefits (economy) and without damaging the environment.

Swash: The movement of sediment in the water up towards the beach at an angle.

Resistant: How strong a rock is – A resistant rock is not affected by erosion quickly.

Traction: Material rolled along the seabed.

Transportation: The movement of material along the coast.

Undercut: The wearing away of the cliff below something.

Weathering: The breaking down of rocks in their original place.

What's the Story?

My name is Shawn Mars and my wife is called Yvonne. I live in Cliff House Farm, south of Mapleton Village on the Holderness coastline. I am worried that one night my house is going to fall into the sea! Very large chunks of the soft rock fall into the sea nearly every night.



We have hired professionals (Richard) to monitor the amount of coastal erosion each month. There has been evidence that suggests that we live on the fastest eroding coastline in the whole of Europe! I have been losing sleep, for how fast the rock has been eroding which is getting closer and closer to my house.

I have been heartbroken as I have not been able to get any insurance for my farm. That's because insurance companies refuse to cover for coastal erosion.



Me and my wife brought cliff house farm in 1990. The landscape around the house at this time was very different. There was plenty of good land in front of the farm, so there was much less of a threat from coastal erosion.

One day we woke up and found that our prized bullock had fallen down on a chunk of a cliff overnight! It was looking up at us, as if to say, 'help me'!



In 1991, in a village just 1 mile North of our farm called Mapleton built a rock groyne.



Since then, all the areas to the south of the groyne have shown a rapid increase in the amount of coastal erosion. Me and my wife tried to take legal action against the local authority. However, the local authority denied that the groyne had increased erosion, and we were given no compensation. We are going to be bankrupt and we are unable to carry on pig farming.

Why does this matter?

- We are studying this as an example of coastal erosion in the UK.
- We are studying this to be able to make good geographical decisions.
- It is important to be able to understand 'two sides of the story.'

Sounds familiar?

You might well have come across some of these ideas before in your school life. We study coasts in year 8, and we look at the impacts of coastal erosion on people's lives.

World Map

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To what extent do people manage and protect our coastlines effectively?



1. What are the characteristics of different types of waves?



2. What are weathering and mass movement?



3. What are erosion, deposition and transportation?



4. How are landforms of erosion created?



5. How are landforms of deposition created?



6. How do we protect the coastline?
Hard and soft engineering.



7. The Holderness Coast – What is happening?



8. To what extent has the management of the Holderness coastline been effective?

Curricular Concepts

Have you ever noticed how some of the things you study in one subject appear in another subject too?

Students are able to understand their work more and remember more if there are clear links between subjects. Throughout your learning at Colton Hills, we will be asking you to think about some of the most important ideas in the world to enable your learning to be deeper than ever before. Look for these 'curricular concepts' in your learning.



**SOCIAL
JUSTICE**



**CULTURAL
DIVERSITY**



**CIVIC
RESPONSIBILITY**



**TECHNOLOGICAL
PROGRESS**



**PRECIOUS
PLANET**



**HEALTHY
LIVING**



**ETHICAL
ENTERPRISE**



**CREATIVE
ARTISTRY**

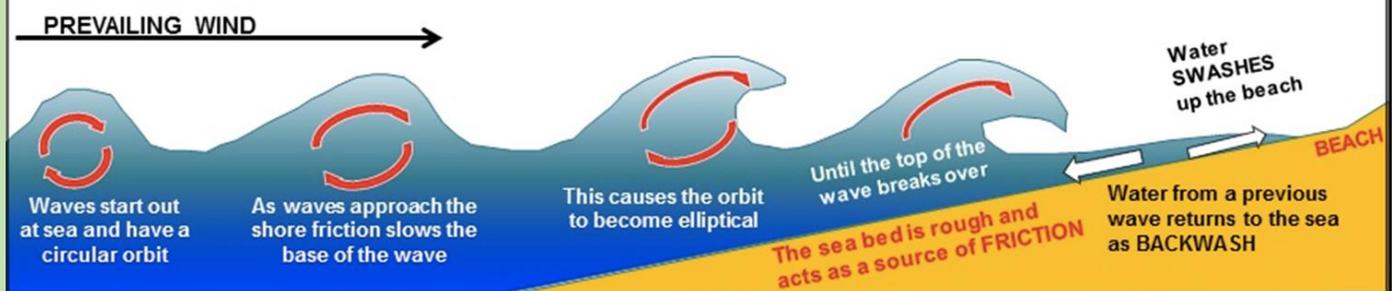
Essential knowledge: Waves

Waves

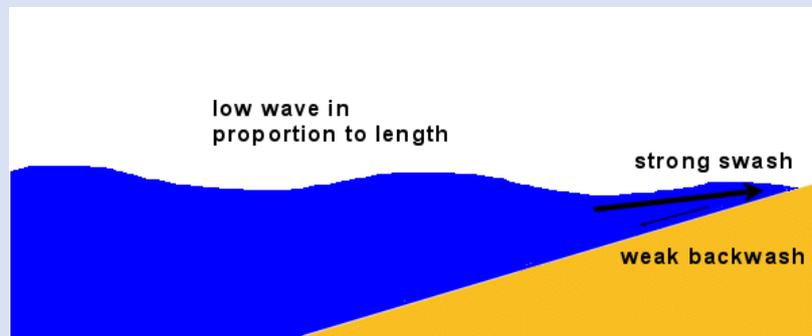
Waves are formed by wind blowing over the sea. The size of wave is determined by the strength of the wind, the duration of the wind and the distance the wind blows over (fetch).

Waves in deep and shallow water

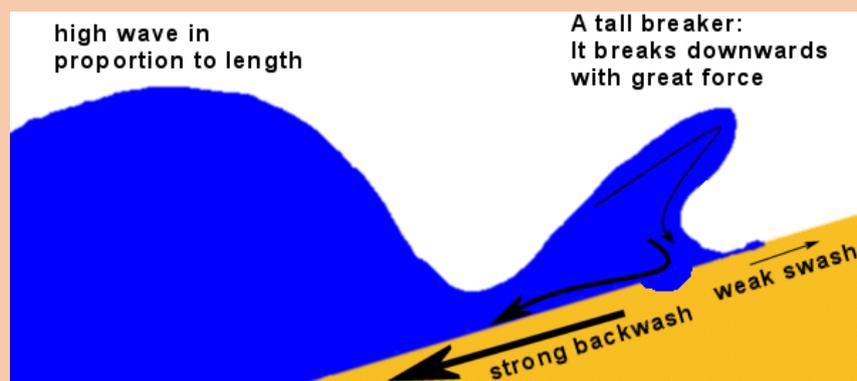
Why waves break



Constructive waves are low with long wavelengths. The swash is stronger than the backwash and therefore build beaches. Constructive waves are common in summer, where the weather is not so windy. They are not tall, or powerful.



Destructive waves are higher with shorter wavelengths. The backwash is stronger than the swash eroding the coast and beaches. They are common in stormy, windy conditions and therefore occur more in winter.



Essential knowledge: Processes



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Weathering

Weathering is the decomposition or disintegration of rock in its original place.

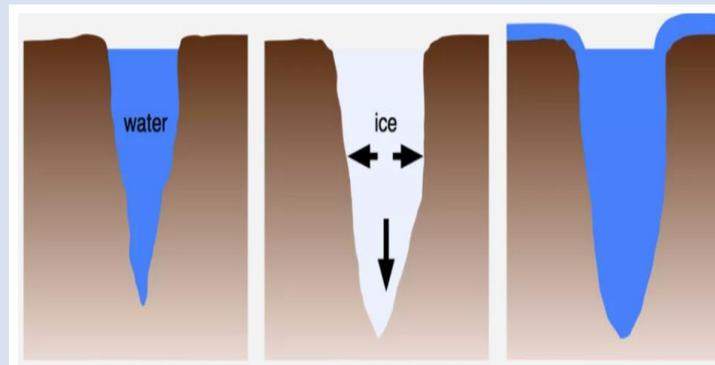
Chemical

Carbon dioxide dissolved in rainwater forms a weak acid. This reacts with limestone and chalk to form a solution to dissolve the rock.



Mechanical/ Physical

Also known as freeze-thaw weathering, water in between rocks freezes at night when temperatures drop, expanding to form ice. During the day, this ice melts. The causes pressure on the rocks, causing them to break.



Biological

Animals borrough into rock and plant roots expand between rocks, causing them to break.



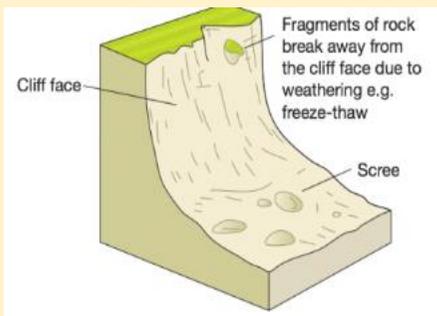
Essential knowledge: Processes

Mass Movement

Mass movement is the movement of material downslope under the influence of gravity. It is the falling, sliding or flowing of rock, sediment or soil most often along a slip plane (line of weakness).

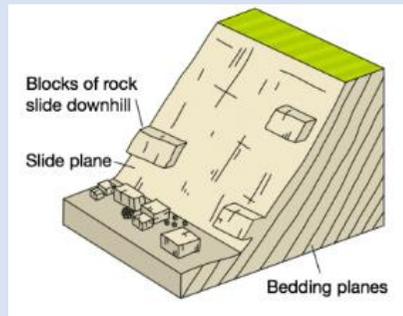
Rockfall

Individual fragments of rock fall off cliff usually due to freeze thaw.



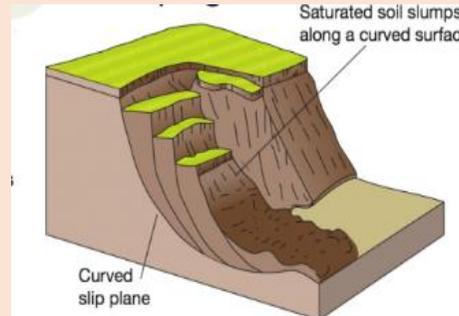
Landslide

Rocks fall in a linear fashion along fault lines.



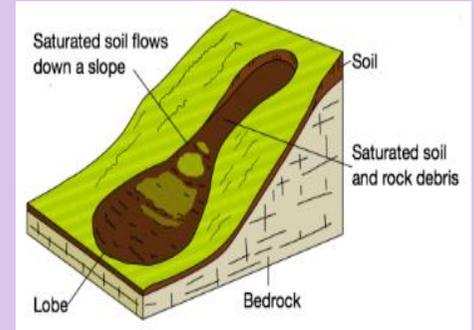
Slumping / Rotational slip

Occurs on a curved surface lubricated by water.



Mudflow

Saturated soil from rainfall becomes heavier and flows down a slope.



Did you know...?

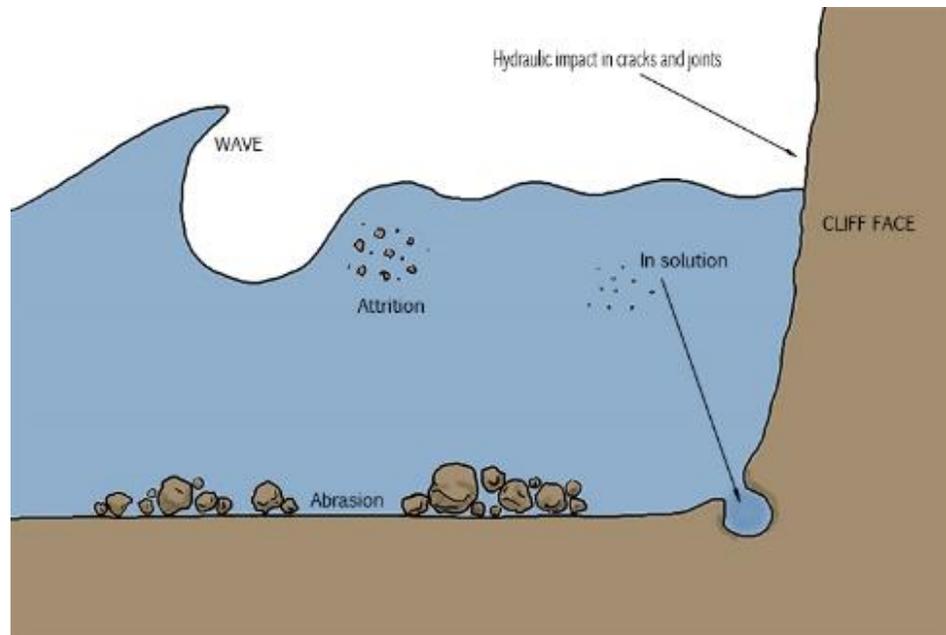
Most mass movement in the UK takes place along the East and South coast due to softer geology.

Essential knowledge: Processes

Erosion

The wearing away and removal of material. The sculpting of landforms.

Hydraulic action	Abrasion	Attrition	Solution / Corrosion
Waves force air into cracks in the cliff, which causes pressure and causes the rocks to break off.	Rocks are hurled against the cliff face, causing rocks to break off.	Rocks crash in to each other, becoming smaller and rounder.	Rocks are dissolved by acids in the water.



Deposition

When sediment carried in the water it is put down, due to a lack of wave energy. This can also form landforms.

Thinking point

Erosion requires higher velocity and energy in comparison to deposition which requires less velocity.

What is velocity?

Essential knowledge: Processes

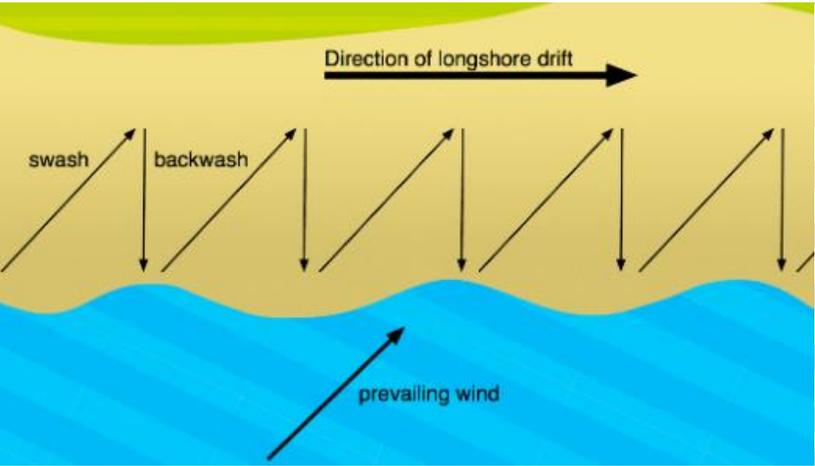
Transportation

How material is carried along the seabed and in the water.

Traction	Saltation	Suspension	Solution
When heavy material is rolled along the sea bed.	When material bounces along the sea bed.	Finer material is carried by the sea (floats).	Rocks are dissolved into the sea water.

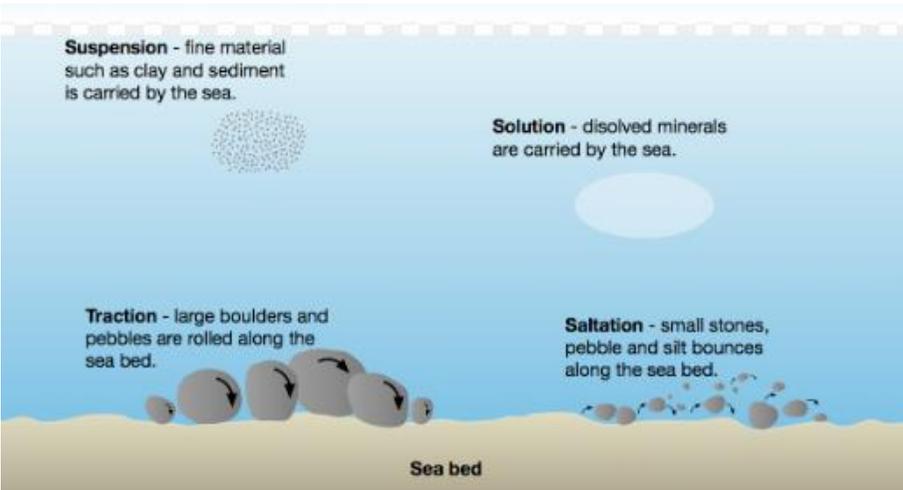
Longshore drift

Water carries material up the beach as swash. Backwash moves it straight back down. This process repeats, moving material along the coast in a zigzag pattern.



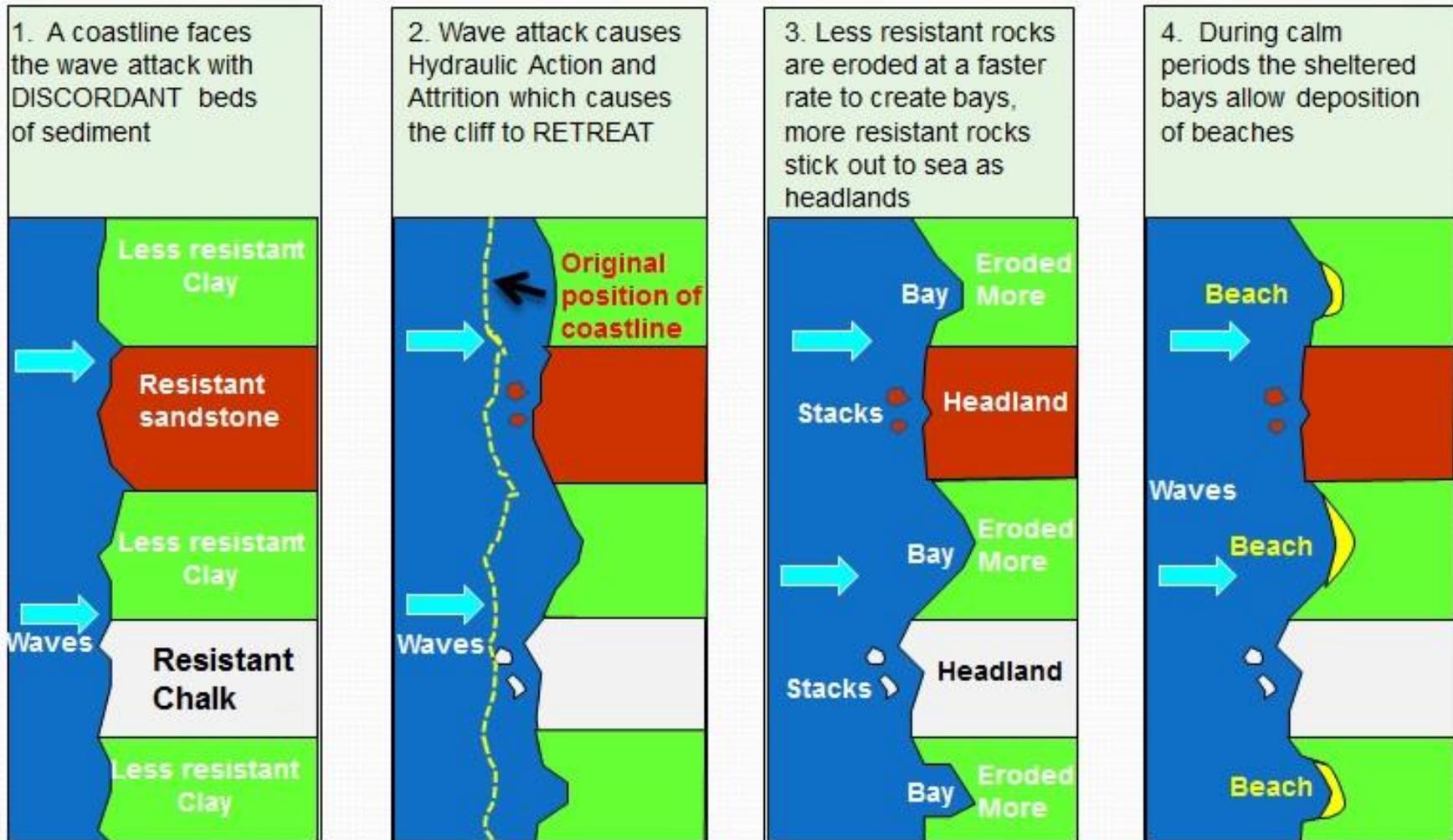
Thinking point

Why does swash move at an angle, in comparison to backwash which moves in a straight line?

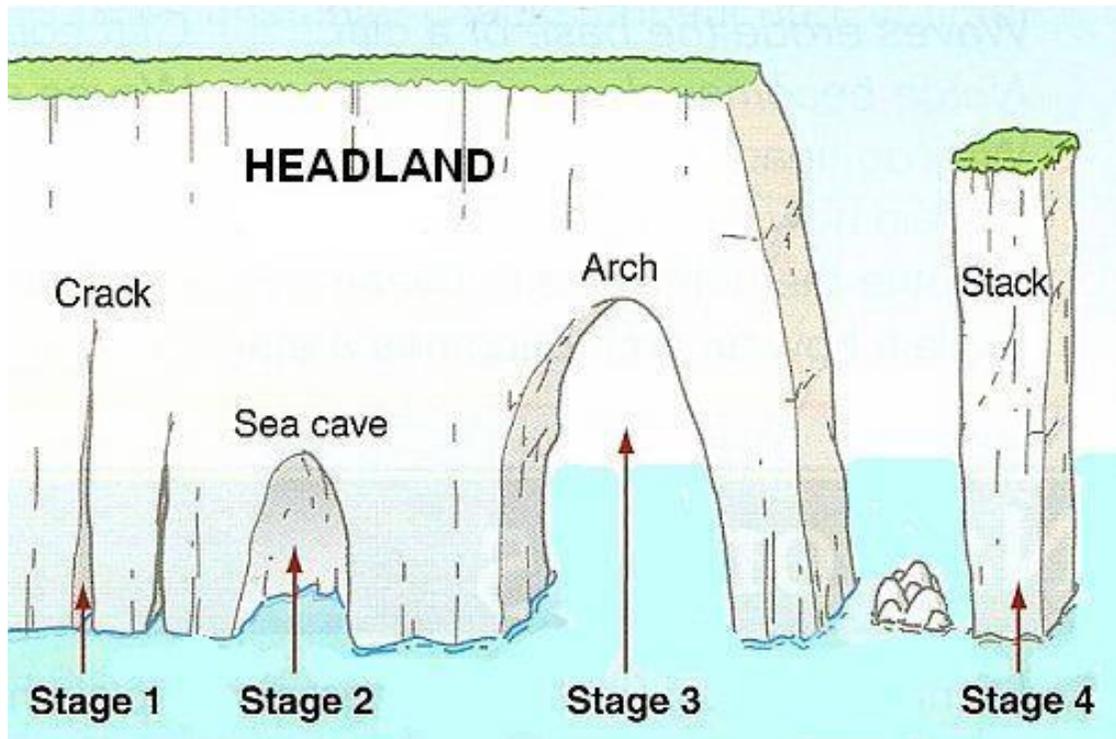


Essential knowledge: Landforms of erosion

Headlands and Bays



Arch's, stacks and stumps



The landforms shown in the images are caves, arches, stacks and stumps created from a headland.

Firstly, the sea attacks the foot of the cliff and begins to erode areas of weakness such as joints and cracks, through processes of erosion such as hydraulic action, abrasion and solution.

Gradually these cracks get larger, developing into small caves. Further erosion widens the cave forming an arch, passing right through the headland.

A combination of wave attack at the base of the arch, and weathering of the roof of the arch (by frost, wind and rain), weakens the structure until eventually the roof of the arch collapses inwards leaving a stack, a column of rock which stands separate from the rest of the headland.

The stack continues to erode, eventually collapsing to form a stump which may be covered by water at high tide.

Did you know...?

A famous coastline of arches, stacks and stumps exists off the Dorset coastline. The stack is called Old Harry and the smaller stump which stands next to him is Old Harry's Wife. The name Old Harry is believed to refer to the devil who legend says once had a sleep on the rocks.

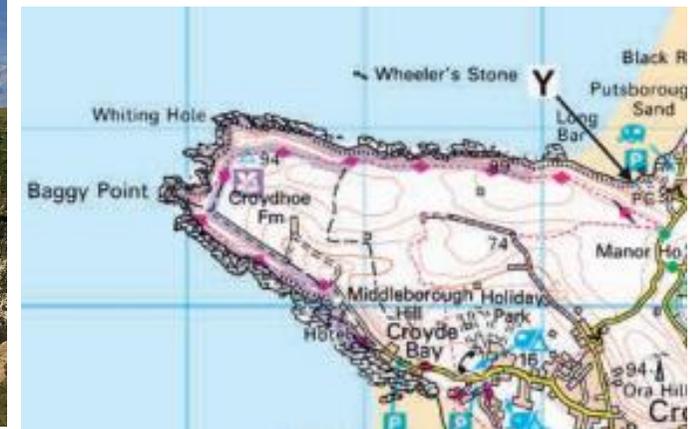
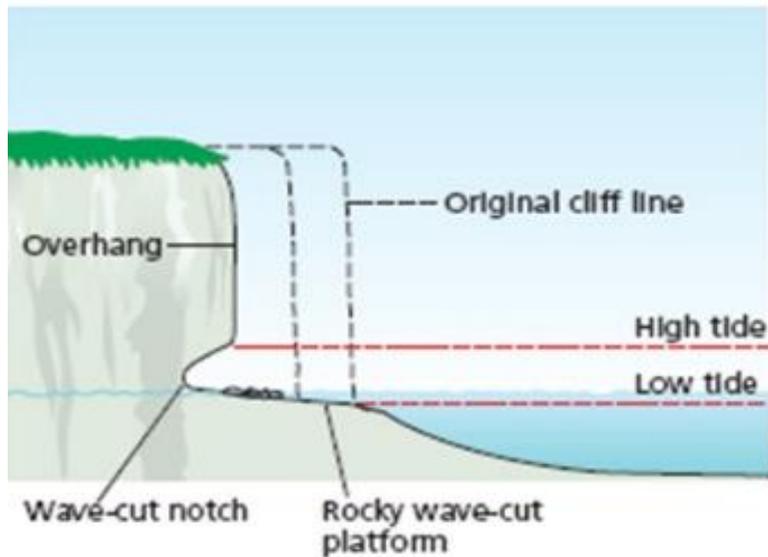
Wave cut platforms and notch's

The sea rises between high tide and low tide, which erodes the base of the headland. The waves attack the base of the cliff through the processes of abrasion and hydraulic action.

Over time the erosion at the base of the cliff will be create a wave-cut notch, as the cliff is undercut. This creates an area of overhanging rock above the wave-cut notch.

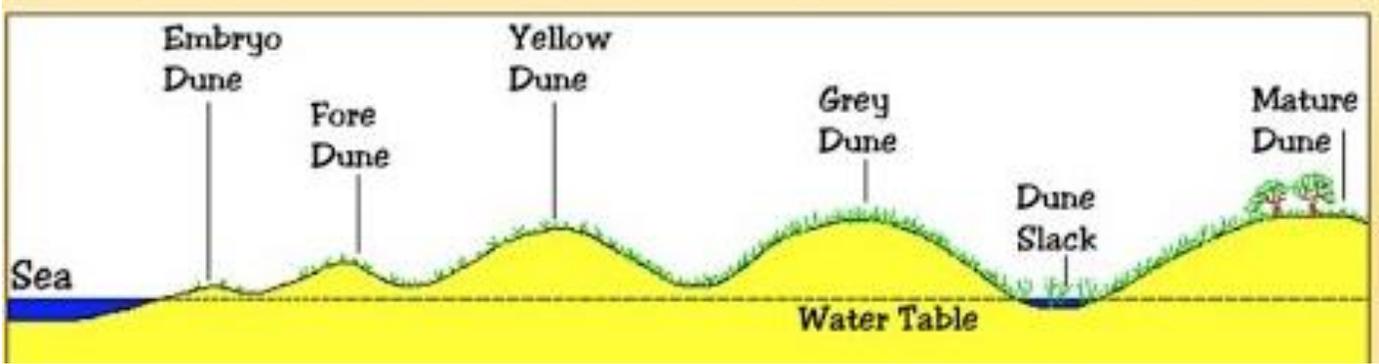
Eventually the heavy overhanging rock will collapse as it has no support underneath it. This causes the cliffs to retreat.

A rocky surface is left behind at the foot of the cliff, this is called a wave cut-platform. Wave-cut platform is created as the sea erodes laterally, not vertically. Rubble from the cliff collapse is carried away. The wave-cut platform is only exposed at low tide and eroded by abrasion.



Essential knowledge: Landforms of deposition

Sand dunes



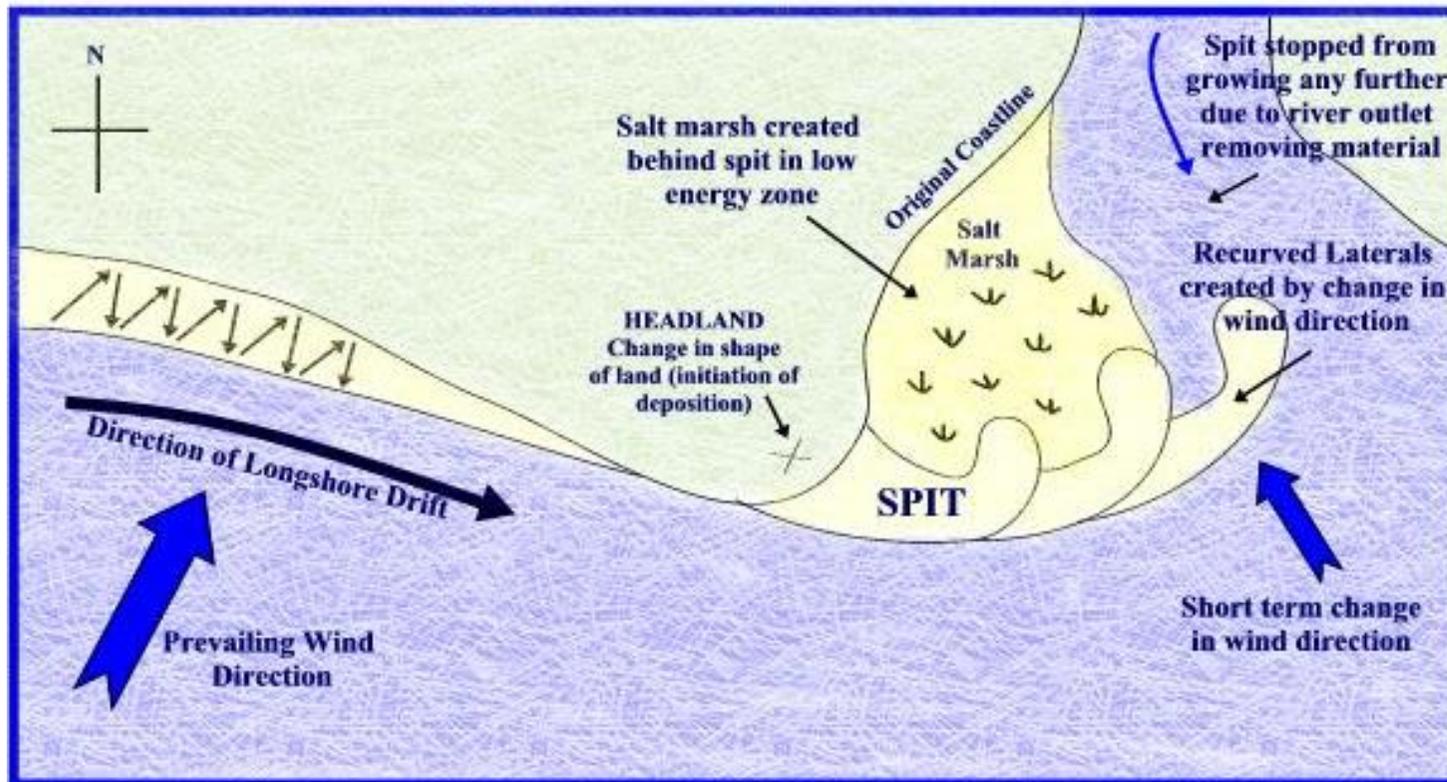
Did you know...?

The biggest sand dune in the world is located in the Namib Desert, which is on the South West coast of Africa. It stands at 1256 feet tall, which is 383 metres!

Embryo dune	Fore Dune Yellow Dune	Grey Dunes Mature Dunes	Dune Slacks
<p>Embryo dunes form around objects that have been deposited (dropped) such as rocks or wood by the sea. They are unstable, as they don't have any plants binding the sand together. They are only 1-2 meters in height.</p>	<p>Some embryo dunes over time will have tough plants (like marram grass) grow on them binding the sand together. This creates fore dunes and yellow dunes.</p>	<p>Grey dunes and mature dunes are more stable. The plants like the marram grass will add more nutrients to the sand. This adds to the plant matter. A wider variety of plants can then grow such as pine trees.</p>	<p>Wind can form depression (dips) between the dunes, called dune slacks. Dune slacks are often far away from the beach. Ponds can form here.</p>

Spits

Spits form when longshore drift takes place. Swash carries material up the beach in the direction of prevailing wind and backwash carries material straight back down the beach due to gravity. This moves sediment along the beach. When the shape of the original coastline changes, for example at the top of a headland, longshore drift continues along the existing shape of the coastline. Material is then deposited at the top of the headland. More deposition will then occur over time and this will then form a spit. A spit forms a curved end when there is a short-term change in wind direction. A salt marsh will form behind a spit, due to the sheltered conditions as the wave energy is reduced at the front of the spit.



Did you know...?

The longest spit extends a very long 110 kilometres, which is around 68 miles. It connects two parts of the Ukraine coastline, running across the Sea of Azov.



Bars and Tombolos

Bars

- When a spit extends across a bay to link two headlands together, a bar is formed.
- Water between the headland and the bar becomes trapped.
- This will form a lagoon behind the bar.



Tombolo's

- Tombolo's are ridges of sand linking a mainland to an island.
- Tombolo's are formed when two longshore drift currents from opposite directions meet or when a spit grows out to meet an island.



Essential knowledge: Management strategies

Hard engineering

Using man made strategies that are usually expensive but long lasting.

Description	Picture	Advantages	Disadvantages
Sea walls			
<p>Description:</p> <p>This is a concrete or rock barrier built against the sea, placed at the foot of the cliffs or at the edge of a beach. Sea walls can have a flat or a recurved face which directs wave energy back out to sea again. They are usually built in areas that need an effective “hold the line” approach as they reduce erosion rates dramatically.</p>		<ul style="list-style-type: none"> ✓ They are highly effective ✓ They provide a sense of security for the community. ✓ Extremely long lasting if maintained well (over 50 years) ✓ Often have a walkway for people to walk along. 	<ul style="list-style-type: none"> X They are made from concrete which is not environmentally friendly and produces a great deal of CO₂. X They often look ugly and unnatural. X They can have high maintenance costs. X Recurved seawalls can be eroded at the base due to turbulence created when a redirected waves hits an incoming wave.

Rock Armour

Description	Picture	Advantages	Disadvantages
<p>These are piles of rock that are placed at the foot of the cliff or edge of the beach. They normally consist of very resistant rock such as granite. The rocks force the waves to break and dissipate the wave energy before it reaches the cliff behind. They are usually transported by barge or helicopter to the coasts from local quarries.</p>	 <p><small>THE WESTERN AND LONGEST PIER OF BRISBANE HARBOUR, WEST BAY WITH A VERY LARGE QUANTITY OF GRANITE ROCK ARMOUR. The artificial granite beach here is 600000 tonnes, an average scale against the blocks. The beach granite quantity of rock armour on this pier is presumably designed to give protection against south Westerlies. 2004 May 2013, Ian West © 2013.</small></p>	<ul style="list-style-type: none"> ✓ They are relatively cheap and easy to maintain. ✓ They are effective at reducing wave energy and therefore erosion rates. ✓ They can look natural if the rock selected looks like the native local stone. ✓ Often used for fishing. 	<ul style="list-style-type: none"> X If resistant stone cannot be sourced locally the costs spiral to be very expensive. X If the stones are too small they will be shifted by the waves and the defence will be redundant. X They can often look ugly if not matched to the local geology.



PRECIOUS PLANET **CIVIC RESPONSIBILITY** **TECHNOLOGICAL PROGRESS**

Gabions

Description	Picture	Advantages	Disadvantages
<p>Description: These are wire cages that are filled with pebbles from a local beach. They can be used to either support the cliff whilst providing a buffer against wave erosion, or just used to prevent erosion. The pebbles in the cages absorb and dissipate wave energy. If well maintained they can last for up to 20-30 years.</p>		<ul style="list-style-type: none"> • Gabions are cheap and relatively effective. • They can improve the drainage on cliffs. • Can eventually become vegetated and blend into the landscape. • Pebbles can be sourced locally reducing costs. 	<ul style="list-style-type: none"> • Gabions are often considered to be quite ugly and visually unappealing. • Poor quality gabions can be damaged within a few years. • Damaged gabions are a hazard to visitors to the beach. • They can also be damaged during heavy storms.



Groynes

Description	Picture	Advantages	Disadvantages
<p>These are timber or rock structures built out to sea from the coast. They are designed to trap sediment which is being transported by longshore drift. This allows sand to be prevented from moving away from a beach and allows the beach to remain as a buffer for wave erosion. They are made from a special African hardwood to prevent them from eroding too quickly.</p>		<ul style="list-style-type: none"> ✓ They create a wider beach which is important for tourists. ✓ Provide useful structures for fishing. ✓ They are not too expensive. ✓ The timber can be sourced from sustainable sources 	<ul style="list-style-type: none"> X By preventing longshore drift from carrying sediment further down the coast they can starve certain areas of their sediment supply leading to increased rates of erosion. X Groynes look unnatural and intrusive as well as disrupting peoples walk along the beach



Soft Engineering

Using natural strategies that are more environmentally friendly, cost less but need regular maintenance.

Beach Nourishment

Description	Picture	Advantages	Disadvantages
Sand and shingle from elsewhere (e.g. from the seabed) or from lower down the beach is added to the upper part of beach to widen and thicken it. This is either through transporting the sand on lorries and trucks or pumping the sand from the seabed using a dredger.		<ul style="list-style-type: none">✓ Creates wider beaches which slow the waves.✓ A nourished beach is natural and blends in with the environment.✓ Wider beach attracts tourists.	<ul style="list-style-type: none">X Taking material from the seabed can kill organisms and destroy habitats.X It's expensive as it has to be repeated.X Although cheaper than hard engineering options, this has high overheads as it costs around £300, 000 to hire a dredger.



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PROGRESS**

Sand Dune Regeneration

Description	Picture	Advantages	Disadvantages
<p>Creating or restoring sand dunes by either nourishment, or by planting vegetation to stabilise the sand. Marram grass is a species that is adapted to growing in sand, and its roots help hold the dunes together and prevent the sand being blown away. It is sensitive to being trampled so areas must be cordoned off to the public.</p>		<ul style="list-style-type: none"> ✓ Sand dunes provide a barrier between the land and the sea. ✓ Wave energy is absorbed with prevents flooding and erosion. ✓ Stabilisation is cheap. 	<ul style="list-style-type: none"> X The protection is limited to a small area. X Dune regeneration has to be checked twice a year and have fertilisers applied. X While becoming established, regenerated sand dunes are fenced. This may deter tourists.

Sand dune fencing

Description	Picture	Advantages	Disadvantages
<p>Fences are built on the sandy beach along the seaward face of existing dunes. These encourage new dunes to grow as they trap sand allowing marram grass to colonise the dune and slowly build it up. They also protect existing dunes against further wave erosion.</p>		<ul style="list-style-type: none"> ✓ These have a minimal impact on natural systems. ✓ They can be constructed out of all-natural materials. ✓ They can control public access to protect other ecosystems. 	<ul style="list-style-type: none"> X These can be quite unsightly, especially when the dune fences are broken. X They can be damaged by storms and are not resistant to high energy waves. X They require regular maintenance if they are to be effective.

Managed retreat

Description	Picture	Advantages	Disadvantages
<p>Managed retreat is the controlled flooding of low-lying coastal areas. If an area is at high risk of erosion, managed retreat could be an option. It usually occurs where the land is of low value, for example farmland.</p>		<ul style="list-style-type: none"> ✓ This is a cheap option compared to paying for sea defences. ✓ Creates a salt marsh which can provide habitats for wildlife and a natural defence against erosion and flooding. ✓ Salt marshes are diverse ecosystems supporting many species. 	<ul style="list-style-type: none"> ✓ Land is lost as it is reclaimed by the sea. ✓ Landowners need to be compensated - this can cost between £5,000 - £10,000 per hectare.



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PROGRESS**

Essential knowledge: The Holderness Coast



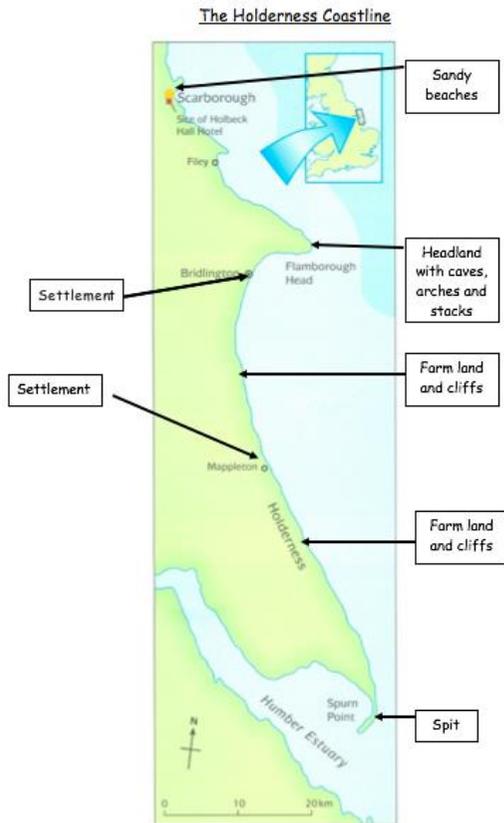
The Holderness Coastline is in the North of England and runs between the Humber Estuary in the south and a headland at Flamborough head. It has the unenviable reputation as the number one place in Europe for coastal erosion, and in a stormy year waves from the North Sea can remove between 7m and 10m of coastline. It is one of the fastest eroding coastlines in Europe as a result of its geology.

Hornsea



Land Use	Management strategy	Benefits	Problems
<p>A popular area with tourists and has many attractions such as caravan parks and leisure facilities such as amusement arcades and golf courses. It is an economically important location and is considered to be high-value land, with 6000-8000 homes.</p>	<p>Defences: Sea wall, wooden groynes and rock armour at Hornsea that protect the village from erosion and flooding.</p>	<ul style="list-style-type: none"> ✓ Groynes allow for a wide and fairly steep beach at Hornsea. ✓ Hornsea attracts up to 1 million tourists per year, which means it is an important tourist hotspot along the coast. ✓ Defences will mean ongoing economic earnings from tourism each year for the area. ✓ Protection of the largest freshwater mere (large body of water that is wider than it is deep) that is also home to protected species of animals and plants. 	<p>Disadvantages: Impacts further down the coasts due to the interruption of LSD.</p>

Mappleton



Where do we need coastal defences? Why?

<u>Land use</u>	<u>Management strategy</u>	<u>Benefits</u>	<u>Problems</u>
<p>Could become the next village to disappear from erosion – 350 people lives here. Cliffs reached the edge of the village in the late 1990's.</p> <p>No business in this area as it is mainly tourists, which makes it medium to high valued land.</p>	<p>Defences: Two rock groynes were built in 1991. They cost £2 million and were built to protect the village and a coastal road, the B1242 (important road as it links all coastal villages) from erosion and flooding.</p>	<ul style="list-style-type: none"> ✓ 300 homes saved and erosion reduced from 1.5m to 0.3m per year. ✓ Groynes and rock armour have prevented further landslides. ✓ A wide beach has been built up to the north of the groyne by LSD (successful). 	<ul style="list-style-type: none"> X The problem has now migrated/moved down to Cowden Farm. X Beaches have narrowed due to loss of sand supply due to the groynes in Mappleton and caused more erosion. X The Groyne cost £2 million X The sea defences were expensive to protect only low-medium value land.

Cowden Farm



<u>Land use</u>	<u>Management strategy</u>	<u>Benefits</u>	<u>Problems</u>
Cowden farm is located to the south of Mappleton village. Have a look at Shawn Mars' story at the start of the booklet for the story of him losing his pig farm to coastal erosion.	Defences: Nothing!! (Do nothing approach) Land is not worth sea defences as it is mainly farmland with a low population. Erosion has already reached the houses in some areas, such as Cowden Farm.	None!	Disadvantages: X Due to groynes being built in Mappleton this has caused the erosion rate to increase from 4m to 10m per year at Cowden Farm and Great Cowden. X This has led to farms being destroyed by the erosion and the loss of 100 chalets at the Golden Sands Holiday Park.



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Thinking point

Hornsea attracts thousands of tourists a year so the council considered it to be economically important. Therefore, the hard engineering strategies were considered to be worth the money.

The council originally objected to implementing management strategies at Mappleton. Why do you think this is? How do you think the residents of Mappleton felt about this?

Why did erosion at Cowden Farm increase and why were they not given any protection?

Did you know...?

This, like all of our case studies, is a true story. Have a look online for the story of Sue Earle of Great Cowden. One of her cows got stuck as a piece of land broke off and dropped down due to erosion.

GCSE Question Breakdown - Paper 1 - Coasts

Identify...	Describe...	Explain how / why...	Explain the formation of...	To what extent?	Do you agree?
1 mark	2 or 4 marks	2, 4 or 6 marks	6 marks	6 marks	6 marks
<p>This question requires you to identify a symbol, characteristic, process or landform. All you have to do is state the answer.</p>	<p>Make sure you say what you see!</p>	<p>Here, you have to show your knowledge as well as understanding. Say what you see and then explain why you can see it or why something is happening.</p> <p>Using the word “because” is crucial.</p> <p>Remember to check how many marks it is worth. That determines how many points you need to include.</p>	<p>This question is asking you to go through the step by step formation of a landform, such as a wave cut notch or a spit.</p> <p>Remember your key words, processes, descriptions and explanations.</p>	<p>These questions are asking if you agree, usually with a statement they provide. For example: “To what extent are coastal management strategies a success?” “Coastal management strategies are always effective at protecting against physical processes. Do you agree?”</p> <p>This is the same question, they are both asking if you agree that management strategies are effective at stopping erosion.</p> <p>You have to agree and disagree for these questions, so the example of groynes in Mableton is a perfect case study to demonstrate your knowledge.</p>	

Skills Questions

0 3 . 1 Using Figure 10, give the four-figure grid reference for a headland with cliffs.

Shade **one** circle only.

- A 4542
- B 4643
- C 4240
- D 4441

[1 mark]

0 3 . 2 Using Figure 10, which of the following coastal features is **not** shown in grid square 4339?

Shade **one** circle only.

- A An area of sand dunes
- B A rocky wave cut platform
- C A wide sandy beach
- D A coastal spit

[1 mark]



There are a range of different map skills they can ask you so we will keep practicing them until we perfect them!

For a lot of them, you need to use 4 and 6 figure grid references. Remember: Along the corridor, up the stairs. For 6 figure grid references, divide the grid squares on the map in to 10.

Revision Cycle

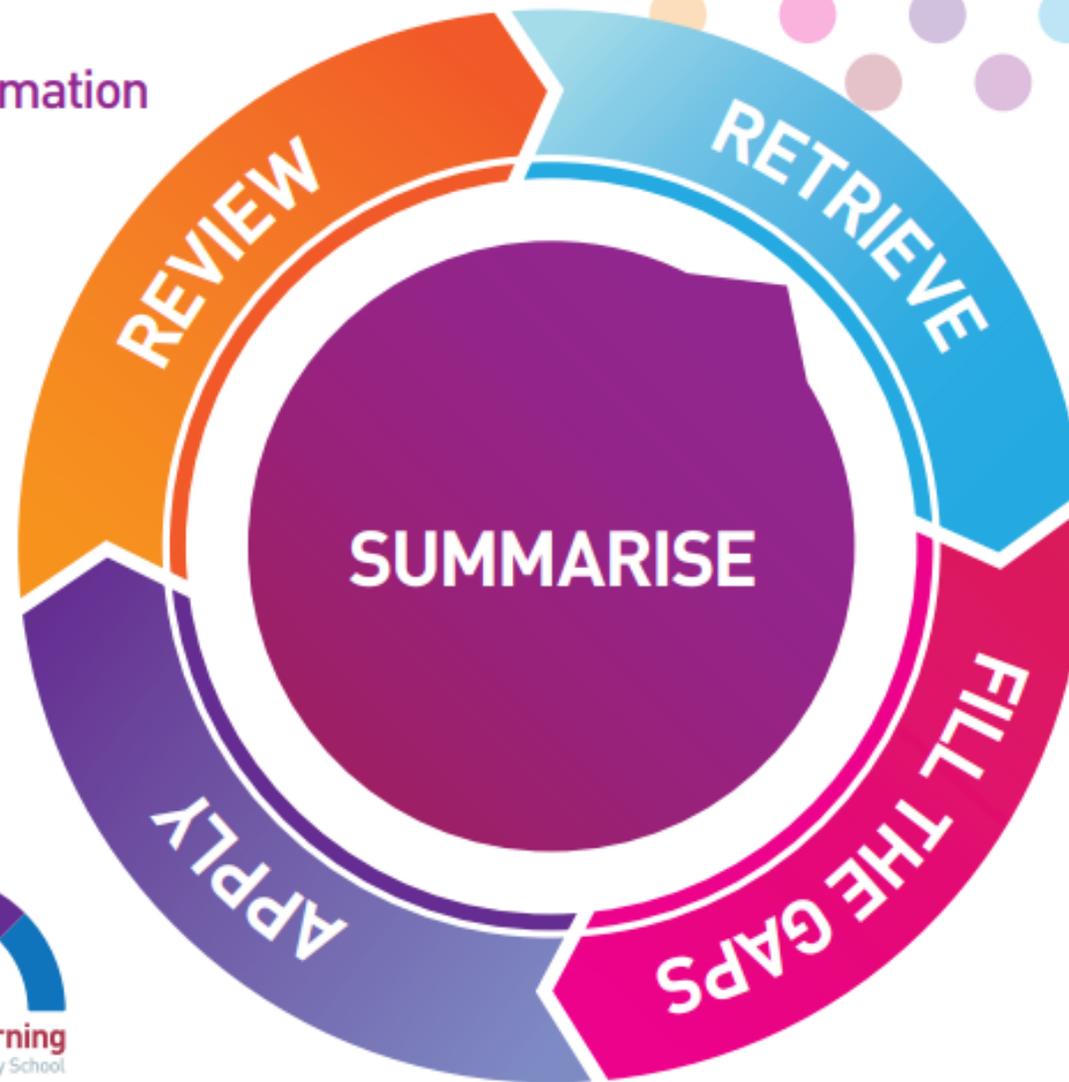
1. **SUMMARISE:** shorten information

2. **RETRIEVE:** find out what you know

3. **FILL THE GAPS:** look at what you don't remember

4. **APPLY:** practice using the information

5. **REVIEW:** reflect on how you have done and repeat



Student Responses

Explain the formation of a spit (6 marks)

The following example has some good bits but is far from being great. How can it be improved?

- 1 Longshore drift moves material along the coast. Some of it is
- 2 deposited off the coast, creating a spit. Spits have a curved end and a
- 3 salt marsh behind them.

Explain the formation of a wave cut notch (6 marks)

The following example has some good bits but is far from being great. How can it be improved?

- 1 The soft rock of the cliff is eroded, which creates a wave cut notch. The
- 2 hard rock above is left unsupported, so it collapses in to the sea. This
- 3 creates a wave cut platform. This is eroded by abrasion, so does not
- 4 have a smooth surface. It is exposed at low tide.

Retrieval Quiz

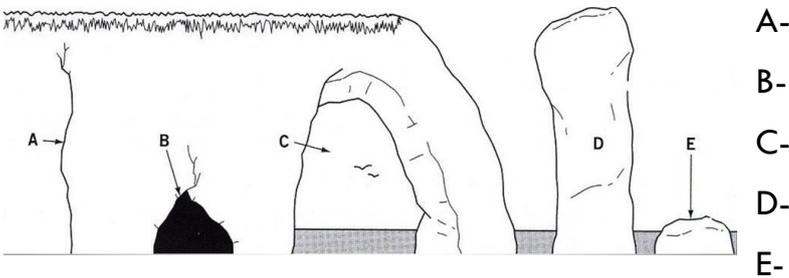
When you can answer all the questions on this page without looking at any notes, you are ready for the exam!

Waves, weathering and mass movement

1. What is the part of the wave that moves up the beach called?
2. What is the wave that moves down the beach called?
3. What are the two types of wave called?
4. Give two characteristics of each wave.
5. What are the 3 types of weathering called?
6. Which weathering involves acid rain?
7. Which weathering involves plants?
8. Name the 4 types of mass movement.
9. A landslide is when mud slides down the slope after rainfall – True or false?
10. Rockfall is caused by freeze-thaw weathering, true or false?

Erosional and depositional landforms

1. What are the two types of waves called?
2. What are the four types of mass movement called?
3. What is the process that moves sediment along a beach?
4. What is the process called where rocks are dropped?
5. What three process causes arch's, stacks and stumps to be made?
6. Are arch's, stacks and stumps made in a headland? True or false
7. Using the diagram below, what are the letters A,B,C,D and E representing?



8. What are the five sand dunes called?
9. What causes a spit to become curved?
10. A tombolo connects one headland to another. True or false?

Pop Quiz Summary

1. Give 2 features each of constructive and destructive waves.
2. What are the four types of transport called?
3. What is the process called that moves sediment along a beach?
4. What is the process called where rocks are dropped?
5. What three weathering processes form erosion features such as stacks and arches?
6. Name 2 soft engineering methods and 2 hard engineering methods
7. Name 5 depositional landforms that are found along a coastline:

1-

2-

3-

4-

5-

8. A wave cut platform is formed when the base of the cliff is undercut? True or False
9. What are the 5 types of sand dunes called?
10. The Holderness coastline is retreating approximately 2m per year due to erosion. True or false?

Retrieval Quiz Answers

Waves, weathering and mass movement

1. What is the part of the wave that moves up the beach called?

Swash

2. What is the wave that moves down the beach called?

Backwash

3. What are the two types of wave called?

Constructive and destructive

4. Give two characteristics of each wave.

Constructive:

- *Strong swash*
- *Weak backwash*
- *Builds beaches.*
- *Common in summer when the winds are not as strong.*
- *Low and shallow*
- *Break infrequently.*
- *Spaced far apart.*

Destructive

- *Weak swash*
- *Strong backwash*
- *Destroy beaches.*
- *Common in winter, when winds are stronger.*
- *Tall and powerful*
- *Break frequently.*
- *Spaced far apart*

5. What are the 3 types of weathering called?

Biological, chemical and mechanical

6. Which weathering involves acid rain?

Chemical weathering

7. Which weathering involves plants?

Biological weathering

8. Name the 4 types of mass movement.

Landslide, rotational slips/ slumping, mudflows and rockfall.

9. A landslide is when mud slides down the slope after rainfall – True or false?

False

10. Rockfall is caused by freeze-thaw weathering, true or false?

True

Erosional and depositional landforms

1. What are the two types of waves called?

Constructive and destructive

2. What are the four types of Mass Movement called?

Landslide, rotational slips/ slumping, mudflows and rockfall.

3. What is the process that moves sediment along a beach?

Longshore drift

4. What is the process called where rocks are dropped?

Deposition

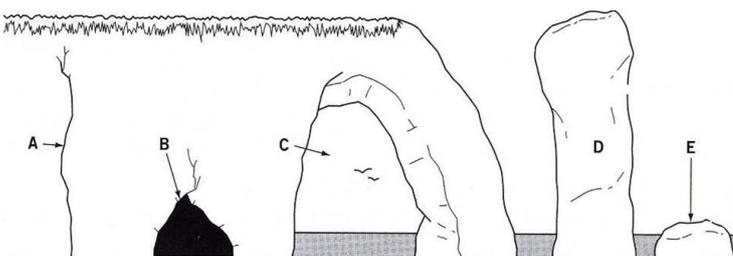
5. What three process causes arch's, stacks and stumps to be made?

Hydraulic action, abrasion and solution.

6. Are arch's, stacks and stumps made in a headland? True or false

True

7. Using the diagram below, what are the letters A,B,C,D and E representing?



A- Faultline/ Cracks

B- Cave

C- Arch

D- Stack

E- Stump

8. What are the five sand dunes called?

Embryo dune, fore dune, yellow dune, grey dune and mature dune.

9. What causes a spit to become curved?

A temporary change in wind direction/ a secondary wind direction.

10. A tombolo connects one headland to another. True or false

False

Pop Quiz Summary

1. Give 2 features each of constructive and destructive waves?

Constructive:

- Strong swash
- Weak backwash
- Build beaches.
- Common in summer when the winds are not as strong
- Low and shallow
- Break infrequently
- Spaced far apart.

Destructive

- Weak swash
- Strong backwash
- Destroy beaches.
- Common in winter, when winds are stronger
- Tall and powerful
- Break frequently
- Spaced far apart

2. What are the four types of transport called?

Traction, saltation, suspension and solution.

3. What is the process that moves sediment along a beach?

Longshore drift

4. What is the process called where rocks are dropped?

Deposition

5. What three weathering processes form erosion features such as stacks and arches?

Hydraulic action, abrasion and solution.

6. Name 2 soft engineering methods and 2 hard engineering methods

Hard engineering methods- Sea wall, rock armour groynes and gabions.

Soft engineering- Beach nourishment, sand dune regeneration, dune fencing and managed retreat.

7. Name 5 depositional landforms that are found along a coastline:

- 1- *Spits*
- 2- *Sand dunes*
- 3- *Beaches*
- 4- *Salt marshes*
- 5- *Bars*
- 6- *Tombolo's*

8. A wave cut platform is formed when the base of the cliff is undercut? True or False
False

9. What are the 5 types of sand dunes called?
Embryo dune, fore dune, yellow dune, grey dune and mature dune.

10. The Holderness coastline is retreating approximately 2m per year due to erosion. True or false
False

Articles for Wider Reading and Flipped Learning

1. BBC Bitesize – Make sure you select AQA, Living with the Physical Environment and go to the Coastal Landscapes in the UK section.
2. Seneca learning – Select the Geography AQA GCSE course, select Physical Landscapes in the UK (3) and Coastal Landscapes in the UK (3.2). Select any of the options within that section to revise and test yourselves. You do not need to do 3.2.9 and 3.2.10 as they are different case studies to ours.
3. GCSE Pod – My courses, Geography, AQA, Paper 1: Living with the physical environment, Physical landscapes in the UK, Coastal landscapes in the UK. There are 18 videos you can watch.
4. Cool Geography – Select GCSE at the top, Physical Landscapes in the UK, Option 1 Coastal environments. You can then select any of those 6 sections.
5. CPG Revision Guide.
6. Geo Factsheet: Case Study of the Holderness Coast
https://www.thegeographeronline.net/uploads/2/6/6/2/26629356/coastal_management_holderness_2.pdf
7. GeoActive Online: Holderness Coastal Management
https://www.thegeographeronline.net/uploads/2/6/6/2/26629356/coastal_management_holderness.pdf