

Key Vocabulary...

Coast	The area where the land meets the sea
Erosion	Erosion is the process that breaks things down.
Transportation	The process of carrying or moving sediment downstream.
Deposition	Dropping or settling of sediment
Cliff Collapse	Flooding occurs when the river bursts its banks overflowing onto the area surrounding the channel.
Coastal Defenses	Management strategies used to protect people and land from flooding

Characteristics of Waves

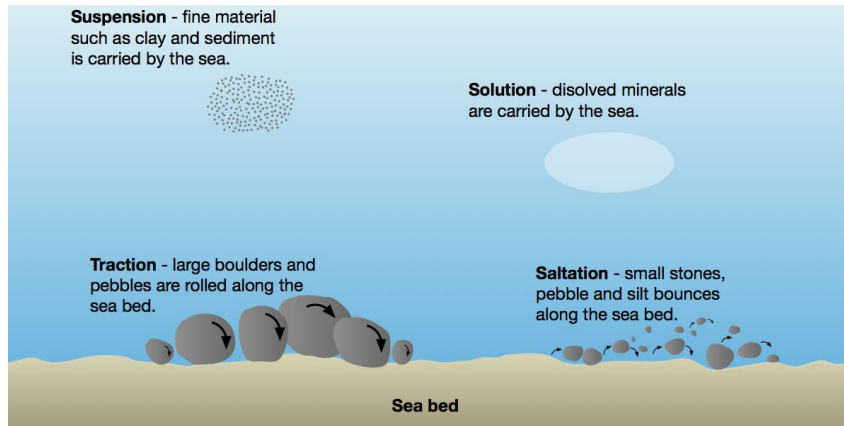


The Size of a wave is controlled by the **fetch**, **strength of the wind** and the **time the wind has been blowing for**.

4 Processes of Erosion

Hydraulic action	This is when the force of water erodes softer rock.
Abrasion	This is when large pieces of bedload material wear away the river banks and bed.
Attrition	This is when the bed load itself is eroded when sediment particles knock against the bed or each other and break, becoming more rounded and smaller.
Solution	This is when finer sediment is dissolved and eroded by the minerals in the water.

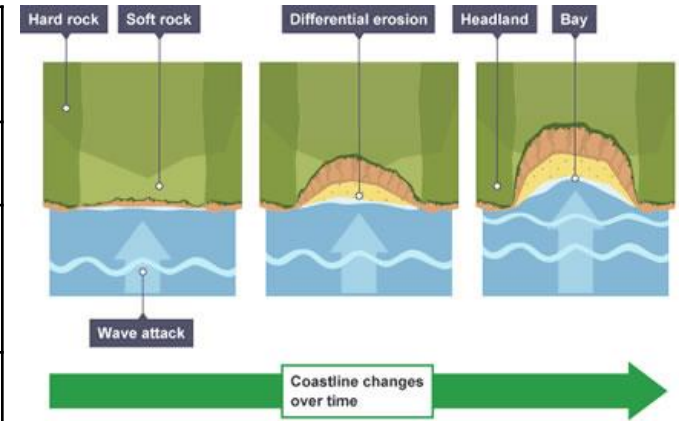
4 Processes of Transportation



Beach

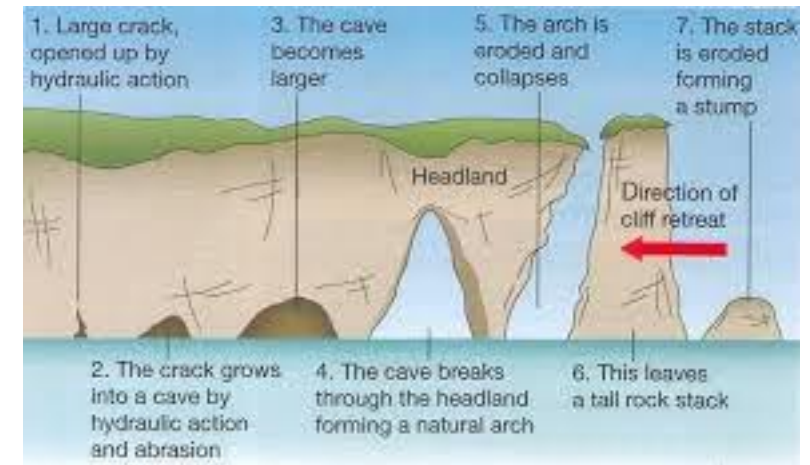
Beaches form in sheltered areas such as bays where the wind and waves lose energy and deposit sediment

Headlands and Bays



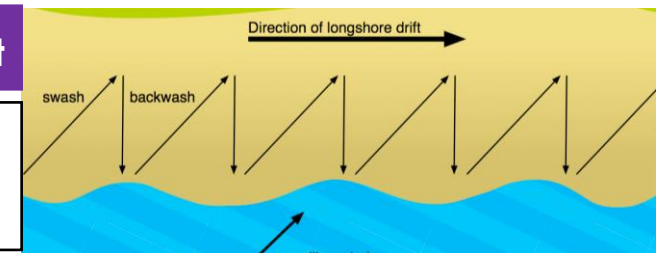
Waves attack the coastline. Softer rock is eroded by the sea quicker forming a bay, calm area cases deposition. More resistant rock is left jutting out into the sea. This is a headland and is now vulnerable to erosion.

Formation of arches, caves, stacks and stumps

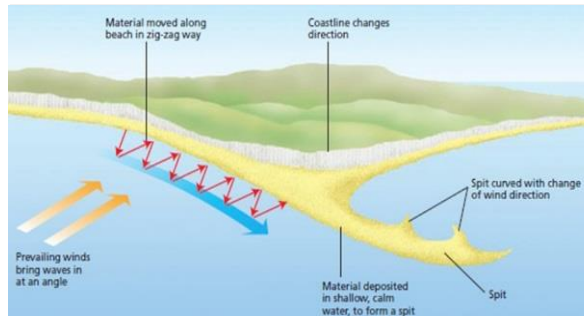


Long Shore Drift

The process which transports sediment along the coastline.



Spits









- 1) Swash moves up the beach at the angle of the prevailing wind.
- 2) Backwash moves down the beach at 90° to coastline, due to gravity.
- 3) Zigzag movement (Longshore Drift) transports material along beach.
- 4) Deposition causes beach to extend, until reaching a river estuary.
- 5) Change in prevailing wind direction forms a hook.
- 6) Sheltered area behind spit encourages deposition, salt marsh forms.

New Brighton Fieldtrip



Investigation: How are the coastal management in New Brighton protecting the tourism industry?

We will complete a survey of the tourist attractions and identify the coastal management strategies.

Name	Sea Wall	Rock Armour	Gabions	Groyne	Beach Replenishment	Dune stabilisation
How does it work?	A concrete wall placed in front of the cliffs which can be curved or straight. Deflects wave energy back into the next wave.	A barrier of large rocks protecting the coast Absorbs wave energy in gaps between boulders	Strong wire baskets filled with hard stones Gaps between the stones absorb the wave energy	Low wooden walls built at right angles across the beach Trap sand moving along the beach by LSD and build up a beach to absorb waves energy	The beach is covered with material that has been dredged from the sea	Planting marram grasses and protecting sand dunes so they form a natural barrier
Advantages	Strong and lasts a long time Efficient	Relatively cheap Efficient	Relatively cheap Can trap sand, so they look more natural	Cheaper than sea walls Keeps a beach for tourists	Keeps a nice beach for tourists	Cheap and sustainable
Disadvantages	Expensive Not attractive Harder to get to the beach	Expensive if rock is imported Not attractive Hard to get to the beach	Not as effective as a sea wall Shorter life span (rust) Unattractive	Beaches further along the coast may lose their supply of sand as LSD is restricted	It is expensive as it has to keep being replaced	It is difficult to stop people walking and destroying the sand dunes
Picture						

Hard engineering	Using man-made structures to protect the coastline. For example: sea wall, rock armour, gabions, groyne
Soft engineering	Allowing the natural processes of the coastline to protect itself from erosion. For example: Beach Nourishment, Dune stabilization,



Cliff Collapse

Cliff collapse damages people's homes and forces people to move. It makes the cliffs and beaches unsafe which reduces the amount of tourists. It destroys habitats on the coastline.

RAGP Tasks:

1. What is the coastline?
2. Describe the 4 erosional processes
3. Compare the characteristics of constructive and destructive waves
4. Explain the formation of arches, stacks and stumps.
5. What are the impacts of cliff collapse?
6. In your opinion, which is the best sea defence and why?
7. How is climate change affecting coastal erosion and cliff collapse?

Extended Write: 'Hard engineering strategies are the best way reduce coastal erosion' Evaluate this statement.