

Year 7 Coastal Zone Knowledge Organiser

Key Words

Backwash: The return of water to the sea after waves break on a beach.

Swash: Forward movement of a wave up a beach.

Constructive Waves: Found on low-angled beaches and mainly responsible for coastal deposition. They are gently breaking, with a much stronger swash than backwash.

Destructive Waves: Found on steep beaches, are steeply breaking and mainly responsible for coastal erosion. Their backwash is much stronger than their swash.

Erosion: The wearing away of the land by rivers, ice sheets, waves and wind.

Fetch: The maximum distance of water over which winds can blow. In the case of south-west England the maximum fetch is from the south-west.

Abrasion (corrasion): Wearing away of cliffs by sediment flung by breaking waves.

Attrition: Erosion caused when rocks and boulders transported by waves bump into each other and break up into smaller pieces.

Hydraulic Action: The process by which breaking waves compress pockets of air in cracks in a cliff. The pressure may cause the crack to widen, breaking off rock.

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

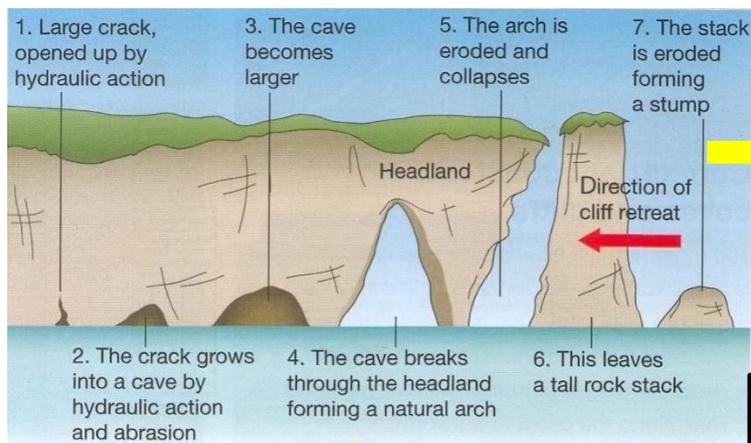
Weathering: The break-down of rock by physical or chemical processes.

Biological Weathering: The breakdown of rock through the action of plants and animals.

Physical Weathering: The disintegration of rock into smaller pieces without any chemical change in the rock; this is most likely in areas of bare rock where there is no vegetation to protect the rock from extremes of weather.

Longshore Drift: Waves approaching the coast at an angle result in the gradual zig-zag movement of beach materials along the coast.

Erosion of a Headland



Depositional Coastal features



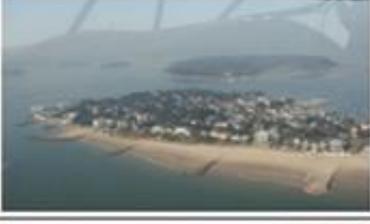
Erosional Features:

- ✚ Arch, cave, stack, stump, bay, wave-cut platform

Depositional features:

- ✚ Spit, bar, tombolo, beach, sand dune

Coastal Management

Photograph	Facts	Lifespan (approx. years)	Cost
	Sea walls There are many different types of sea walls: sloping, curved, stepped and vertical. They are made of concrete or stone. They stop the sea reaching the cliff base and reflect wave energy.	100	£3500 – £5000 per metre
	Groynes (wooden) These reduce longshore drift by trapping sediment on one side. This builds up the beach, which acts as a natural barrier to erosion by absorbing the wave energy.	30–40	£1000 per metre
	Groynes (rock) These reduce longshore drift by trapping sediment on one side. They are made of granite or other hard igneous or metamorphic rocks and so last up to three times longer than wood.	100	£1000 per cubic metre (m ³)
	Rip-rap is made from huge boulders of granite or other hard igneous or metamorphic rocks. They are placed at the base of cliffs to absorb the energy of the waves but let the water drain through them.	120	£1000 per cubic metre (m ³)
	Gabions These are cages of stones. They can be used to stabilise cliff bases and to absorb the energy of the waves. They are a short term measure as they are easily damaged by storm waves and the cages rust.	5–10	£50 per cubic metre (m ³)
	Revetments These are sloping features which absorb the energy of the waves but which let water and sediment through. Older revetments were made of wood. Some modern ones have shaped concrete or stone blocks laid on finer material and are known as Rock armour .	Wooden 10 Rock armour 30	£800 per metre £1200 per metre
	Tetrapods These are usually made of concrete. Their unique shape makes them stable and they absorb the wave energy but allow the water to drain through them.	100	£1000 per cubic metre (m ³)

Useful websites: <https://www.3dgeography.co.uk/coastal-geography>
<https://www.bbc.com/bitesize/guides/zxj6fg8/revision/1>
<https://www.bbc.com/bitesize/guides/zmwxsbk/revision/1>
<https://www.educationquizzes.com/ks3/geography/coastal-scenery-01/>