

COASTS REVISION

What is a coast?

The coast is where the land meets the sea. These areas are under constant attack by the waves and are being changed all the time by erosion, transportation and deposition.

Key words

Prevailing wind - _____

Fetch - _____

Swash - _____

Backwash - _____

Waves - _____

Tides - _____

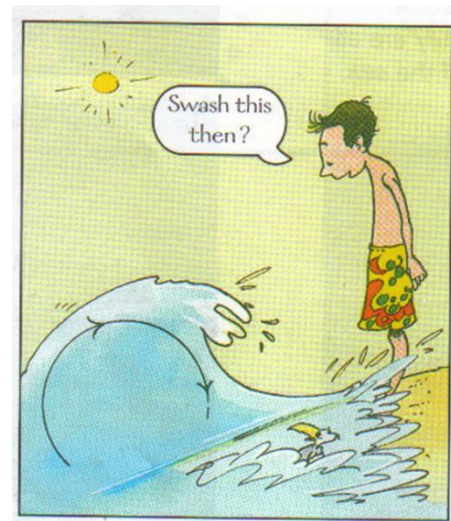
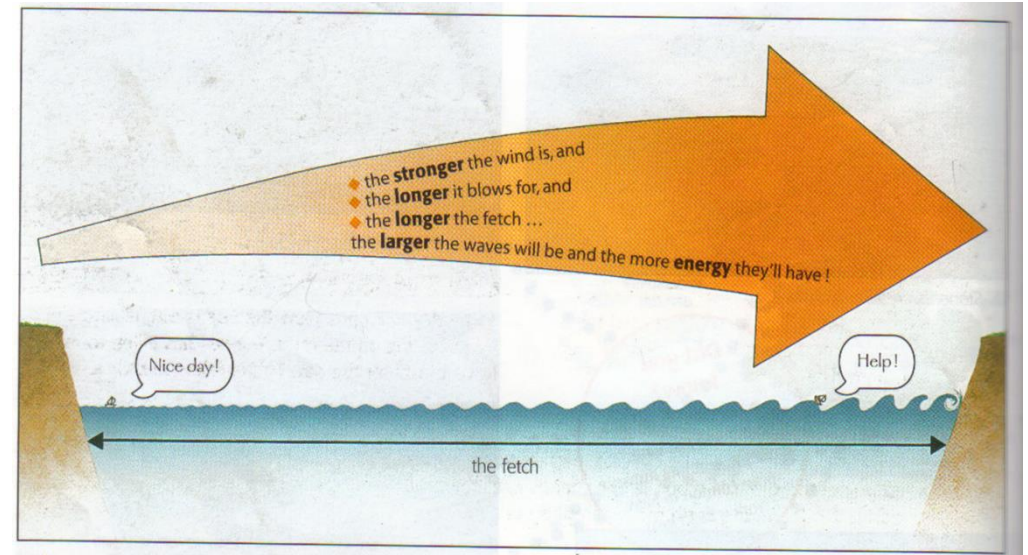
Hydraulic action - _____

Attrition - _____

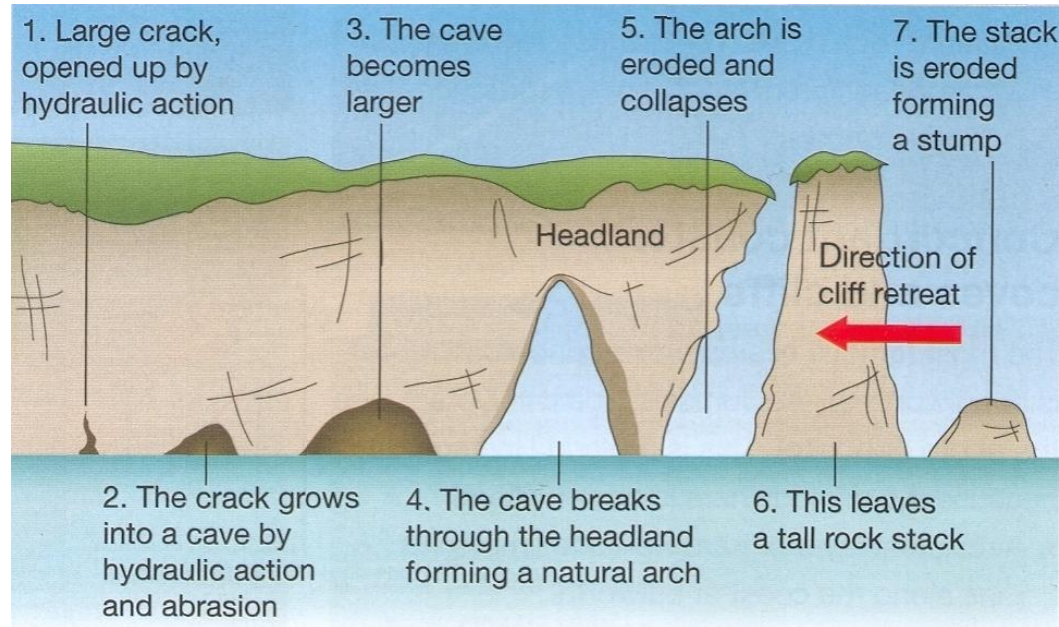
Abrasion - _____

Solution - _____

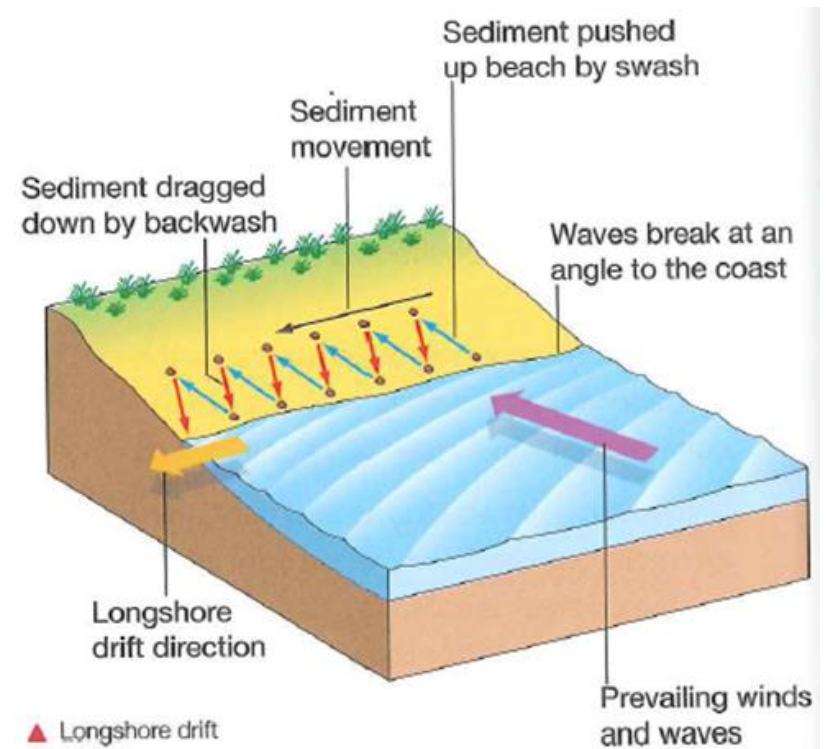
Waves work non-stop, night and day, year after year, shaping the coastline. They wear away or erode the coast and then carry away or transport the eroded material. Some of the eroded material is carried back out to sea and some is carried along the coastline. Then they drop or deposit it in sheltered areas, forming beaches, some of which are made of sand and some are made of small pebbles (shingle).



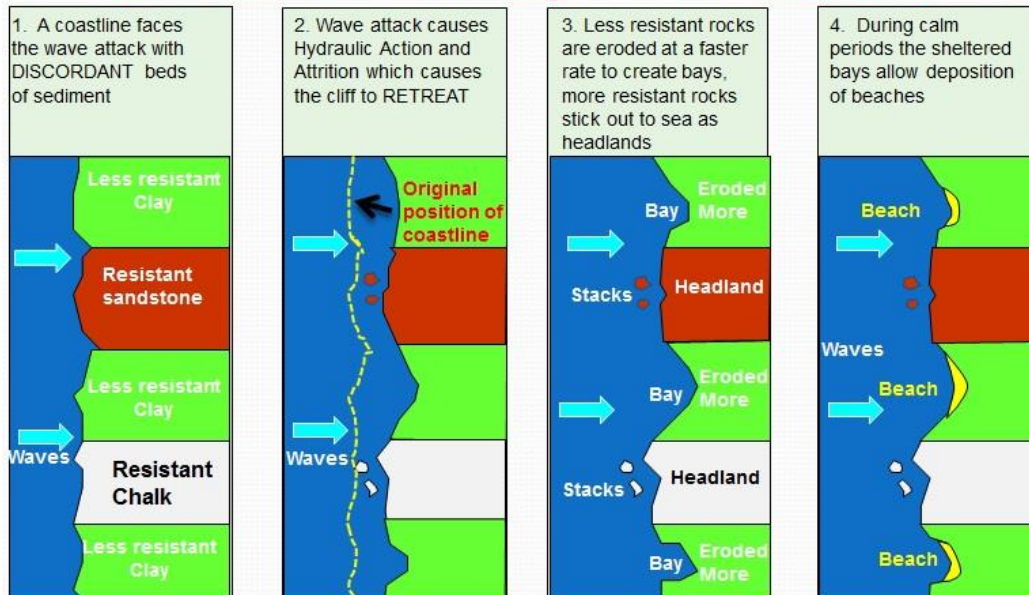
Landforms created by erosion



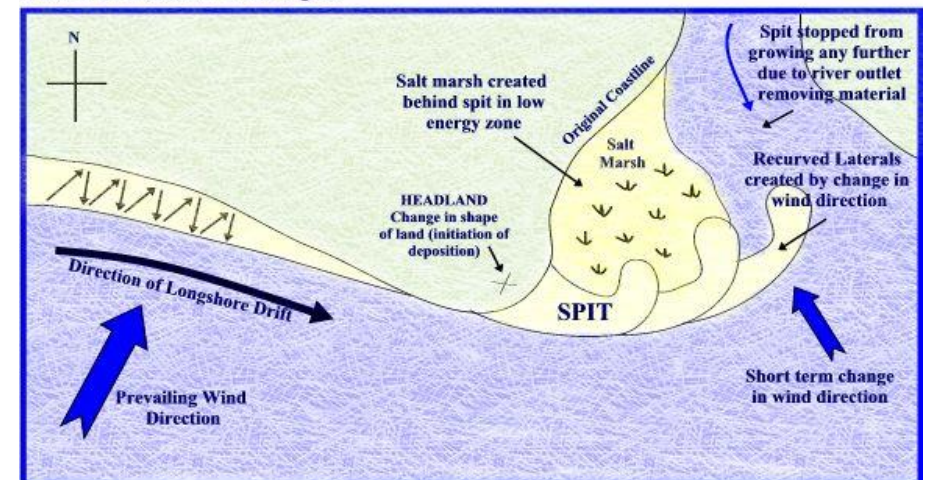
Transportation (Longshore drift)



The formation of Bays and Headlands



The Formation of a Spit



Attempts to protect the coastline involve **engineering**. Read this list of coastal protection schemes and complete a copy of the table below. It has been started for you.

Groynes: A long, low wall built out into the sea at right angles to the beach. Many of them have to be built on one beach several hundred metres apart. The aim is to prevent the loss of precious beach sands through **longshore drift**. Concrete **groynes** can cost £200,000 each. They help widen beaches and protect cliffs. **Wooden groynes** are much cheaper, but they rot and may be damaged by storms.

Rock armour: A collection of large interlocking boulders sometimes fixed into position to protect the coast by disrupting the waves. It costs £3,000 per metre to build.

Revetment: Gently sloping concrete wall that allows waves to run up it, therefore reducing their energy. It costs £2,000 per metre to build.

Sea wall: Made with stone or concrete. May be curved at the top to divert the force of the waves back out to sea, but can be undermined by waves. Usual design life is 50–75 years. It costs £5,000 per metre to build.

Beach rebuilding: Sand removed by longshore drift is replaced artificially every year. This gives a more natural appearance, but is expensive – £300,000 per km per year.

Stone gabions: Strong steel gages filled with rocks and some sand allowing grasses to grow. The cost to build is £200 per metre but they are ugly constructions.

Offshore breakwater: A concrete wall or interlocking boulders built a little way out from the shore protects the coastline by disrupting wave energy and creating an area of calm water inshore. It is ugly, can disrupt the marine ecosystem and costs over £3 million per km.

Wooden revetments: Slatted frame that decreases wave energy. The cost to build is £500 per metre, but does not include repairs.



Coastal protection methods

Coastal defence scheme	Approximate cost	Possible effects
Sea wall made with stone or concrete.	£5,000 per metre.	

Coastal defence scheme	Possible costs	Possible effects