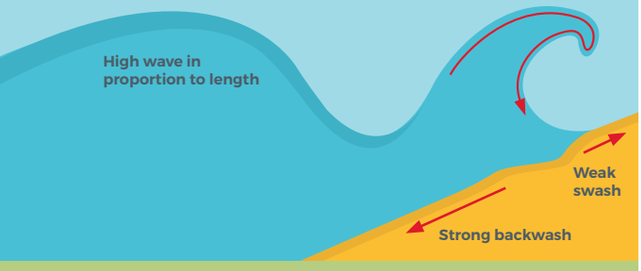
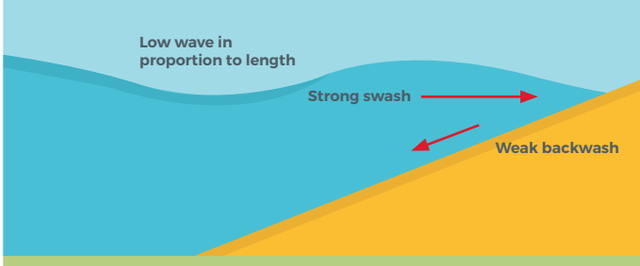
COASTAL PROCESSES

WAVES



DESTRUCTIVE

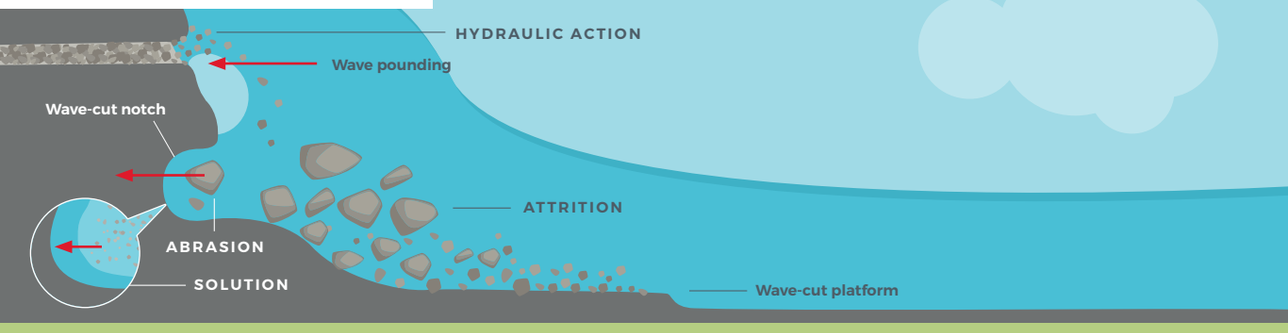
- Large wave height with short wave length
- Tall breakers have a high downward force and a strong backwash
- Strong downward energy erodes beach material & cliffs
- Strong backwash results in narrow beach profiles
- Created in storm conditions when wind is powerful
- Occur when wave energy is high & wave has travelled far



CONSTRUCTIVE

- Flat & low in height with long wave length.
- Strong swash deposits material on the beach, giving a gentle profile
- Created by storms far out to sea making a large swell which eventually reaches the coast
- Wave energy disperses over wide area resulting in a weak backwash
- Lower wave frequency (break less often)

COASTAL EROSION



Erosion is the wearing away of the land by the sea. Destructive waves erode the coast in a number of different processes:

HYDRAULIC ACTION - When waves hit a cliff, air is compressed into cracks. When the wave breaks, the air rushes out of the gap causing erosion.

ABRASION - Bits of rock & sand in waves grind down cliff surfaces like sandpaper.

ATTRITION - Waves smash rocks and pebbles on the shore into each other, & they break and become smaller & smoother.

SOLUTION - Acids contained in sea water will dissolve some types of rock such as chalk or limestone.

COASTAL TRANSPORTATION

Transportation is the movement of material in the sea and along the coast by waves and tidal currents

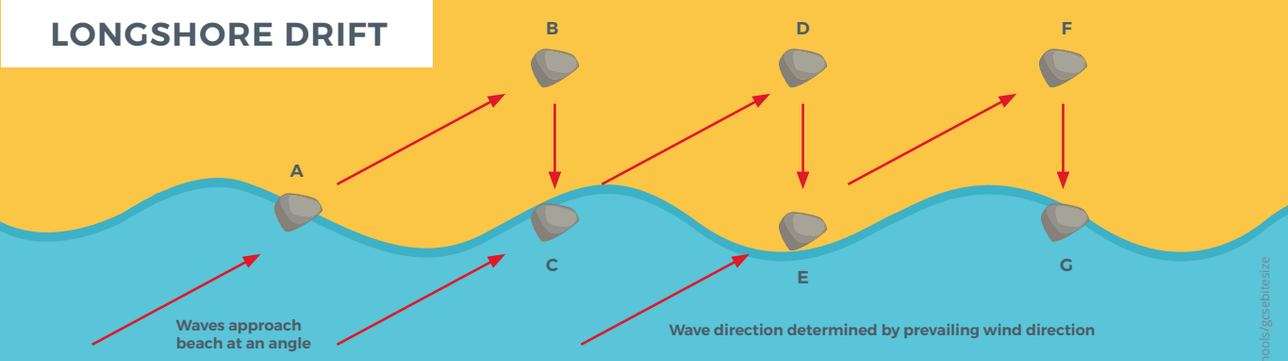
TRACTION - large material eg pebbles & larger sediment are rolled along the sea bed

SALTATION - beach material eg small pieces of shingle or large sand grain is bounced along the sea bed

SUSPENSION - beach material eg silts & clays (which can make the water cloudy) is suspended and carried by the waves

SOLUTION - minerals are dissolved and carried by the water, the load is not visible & can come from cliffs

LONGSHORE DRIFT



A-B: The prevailing wind causes waves to approach the coast at an angle. The swash carries the sand particle or pebble up the beach at the same angle.

B-C: Backwash and gravity carry the particle back down the beach.

The process is repeated and the particle is carried along the coastline in a zig-zag motion and would eventually be deposited when the waves lose energy - this is called longshore drift.

Sources: www.bbc.co.uk/schools/gcsebitesize