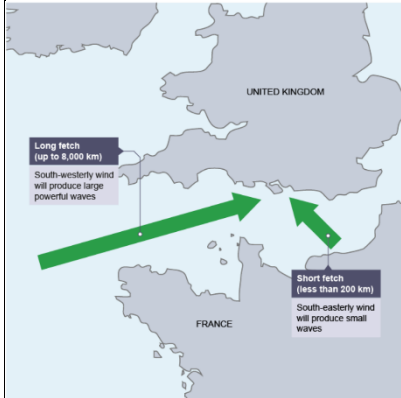


Week 1: Waves

When the wind blows over the sea, it creates waves. The size and energy of the wave depends on certain factors:

- the **fetch** - how far the wave has travelled
- the strength of the wind
- how long the wind has been blowing for



In the UK this means:

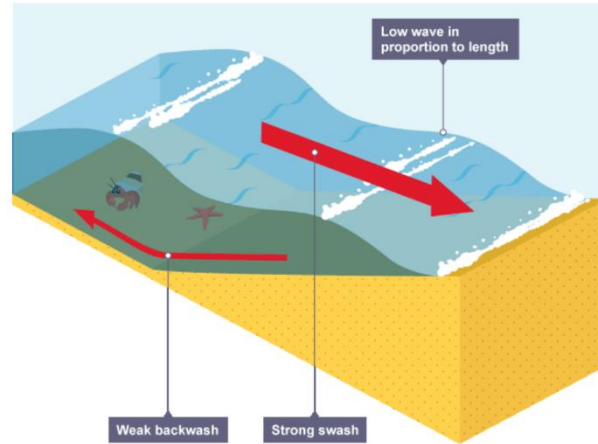
Waves from the south west are much bigger and stronger than those from the south east.

Week 2: Wave types

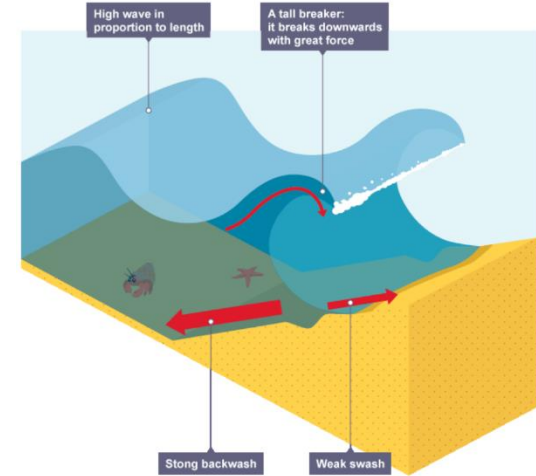
There are two different types of wave - **constructive** and **destructive**.

When a wave reaches the shore, the water that rushes up the beach is known as the **swash**. The water that flows back towards the sea is known as the **backwash**. The energy of the swash and backwash determine the type of wave.

Constructive waves



Destructive waves



Week 3: Weathering

Exposed rocks along the coastline can be broken down by the processes of weathering. There are three types:

1. Physical weathering (Freeze-thaw weathering)

Water enters cracks in the rock. When temperatures drop, the water freezes and expands causing the crack to widen. The ice melts and water makes its way deeper into the cracks. The process repeats itself until the rock splits entirely.

2. Biological weathering

Plants and animals can have an effect on rocks. Roots burrow down, weakening the structure of the rock until it breaks away.

3. Chemical weathering

Rainwater and seawater can be a weak acid. If a coastline is made up of rocks such as limestone or chalk, over time they can become dissolved by the acid in the water.

Week 4: Erosion

Erosion is the wearing away of rock along the coastline. Destructive waves are responsible for erosion on the coastline. There are four types of erosion:

Hydraulic action - this is the power of the waves as they smash against the cliff. Air becomes trapped in the cracks in the rock and causes the rock to break apart.

Abrasion - this is when pebbles grind along a rock platform, much like sandpaper. Over time the rock becomes smooth.

Attrition - this is when rocks that the sea is carrying knock against each other. They break apart to become smaller and more rounded.

Solution - this is when sea water dissolves certain types of rocks. In the UK, chalk and limestone cliffs are prone to this type of erosion.

Week 5: Transportation

Beach material can be moved in four different ways. These are:

Solution - when minerals in rocks like chalk and limestone are dissolved in sea water and then carried in solution. The load is not visible.

Suspension - small particles such as silts and clays are suspended in the flow of the water.

Saltation – where small pieces of shingle or large sand grains are bounced along the sea bed.

Traction – where pebbles and larger material are rolled along the sea bed.

