Geography	Coasts	Year 8	Term 4

Trinity Academy Cathedral

Week 1: Waves

Swash - When the wave rushes up the beach.

Back wash - When the wave flows back towards to sea.

There are two types of wave -constructive and destructive.

The characteristics of a destructive wave are:
-weak swash and strong backwash
-the strong backwash removes sediment from the beach
-the waves are steep and close together

The characteristics of a constructive wave are:
-strong swash and weak backwash
-the strong swash brings sediments to build up the beach
- the backwash is not strong enough to remove the sediment
-the waves are low and further apart

Week 2: Coastal Processes

Sediment– small pieces of eroded rock, often taking the form of sand.

Coast—an area of land which meets the sea.

Coastal Processes— These are driven by the waves and winds to influence and shape the coastline.

Erosion– the breakdown of rock over time into smaller pieces of rock.

Transportation– the movement of sediment from one place to another over time.

Longshore drift – Is a form of transportation where the waves move sediment in a zig-zag pattern down the beach.

Week 3: 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 sheer power of the waves as they smash against the cliff.
- 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 4: Transportation and deposition

When beach material is moved we call it transportation.

There are four types of transportation.

- 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 seabed.
- Traction – where pebbles and larger material are rolled along the seabed.

Deposition—When the sea loses energy, it drops the material it has been carrying.

Week 5: Coastal Management Strategies

Hard engineering—This involves building artificial structures which try to control coastal erosion

Soft engineering—The use of natural, sustainable solutions to help control coastal erosion.

Advantages of hard engineering—Strategies are highly effective and can be used to protect valuable land along a coastline.

Disadvantages of hard engineering—They can be very costly and may damage fragile coastal ecosystems.

Advantages of soft engineering—They are more affordable , sustainable and once completed will fit into the natural surroundings.

Disadvantages of soft engineering—Strategies such as beach nourishment and dune regeneration may need to be maintained constantly.

Week 6: Costal Processes Three

Headlands are formed when the sea attacks a section of coast with bands of hard and soft rock.

The bands of soft rock, such as sand and clay, erode more quickly than those of more resistant rock, such as chalk.

This leaves a section of land jutting out into the sea called a headland.

The areas where the soft rock has eroded away, next to the headland, are called bays.

Geology is the study of the types of rocks that make up the Earth's crust.