Year 8 Geography: Coasts

Week 1

The basics of waves:

1. Waves are formed as a result of **wind** blowing over the ocean. The longer the **fetch** (the distance the wind blows over the water), the bigger the wave will be.
2. They can also be formed as a result of **earthquakes** or **volcanic eruptions**. These waves are usually very large and are called **tsunamis**.
3. As waves approach land, the rising seabed disrupts their shape and they break on the land. Waves at the coast are either **destructive** or **constructive**.

Type 1 - Constructive waves:

1. These waves are **gentle**, and they are **far apart**.
2. They have a **strong swash** and a **gentle backwash**.
3. As a result, these waves transport and deposit a large amount of material onto the beach, 'constructing' a new beach.

Type 2 - Destructive waves:

These waves are steep, and they are close together. They have a weak swash and a strong backwash. As a result, these waves erode and remove sand and pebbles from the beach, 'destroying' it.

Week 2

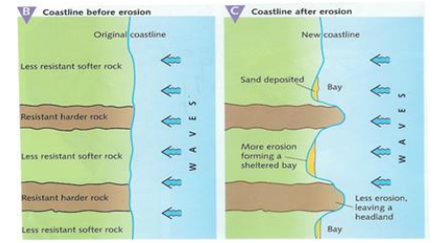
Coastal erosion and weathering:

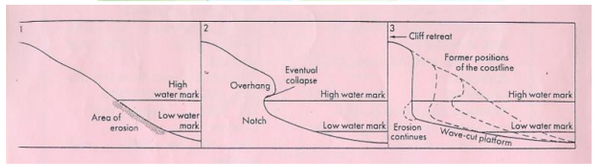
1. Coasts are constantly changing due to erosion, transportation and deposition.
2. How coasts change depends on the geology of the area. **Harder rock**, like limestone and sandstone, **erodes slowly**. **Softer rock**, like clay, **erodes more quickly.**

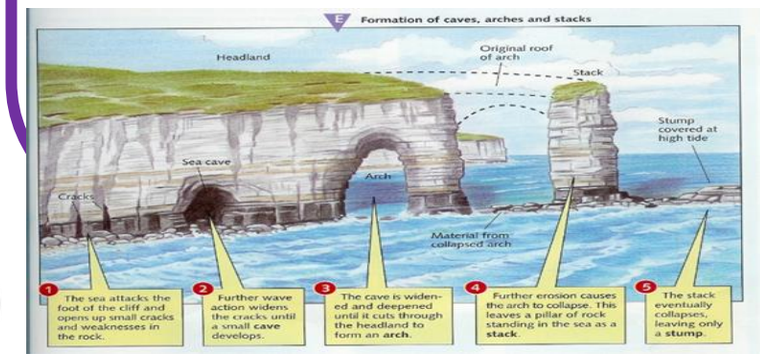
Name	Description
Abrasion	Eroded material is hurled or scrapes against the cliff, breaking off rock.
Hydraulic pressure	Waves compress pockets of air in cracks in a cliff, causing the crack to widen, breaking off rock.
Solution	Cliffs e.g. chalk dissolve in seawater
Attrition	Eroded material in the sea, hit into each other breaking down into smaller pieces.
Freeze-thaw weathering	Water collects in faults during the day. At night, this water freezes and expands. This makes faults bigger over time because the process repeats itself.

Week 3

Coastal erosion landforms. Understand the formation of headlands and bays, wave cut platforms, caves, arches, stacks and stumps.

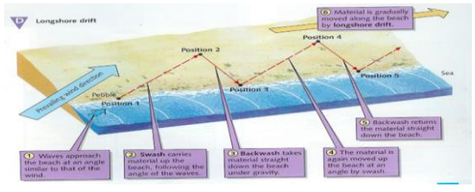




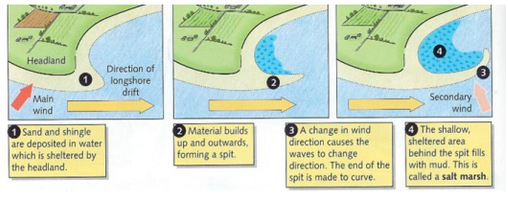


Week 4

Landforms of deposition, longshore drift.



Landforms of deposition – Spits



Landforms of deposition – Bars and Tombolos

If there is **no river** running into the sea where the spit has formed, it could become a **bar** connecting two headlands. Behind the bar is a **lagoon** which in time may become a **salt marsh.**

If the material reaches an offshore island it is a **tombolo**.

Week 5

Changes in sea level:

1. Sea levels change every day due to tides.
2. However, on a longer time scale, sea levels are rising due to **climate change**. The increase in the Earth's average temperature is causing the polar ice caps to melt, causing sea levels to rise.
3. This rise in sea level can increase **erosion** and can cause areas to permanently flood.
4. This affects **coastal areas** but can also affect low lying countries, such as **the Maldives** and cities such as **New York, Shanghai and London**, which will be forced to spend billions on flood defences.

Groynes 	1. Wooden or stone fences that are built at right angles to the beach. 2. They trap longshore drift, creating a bigger beach. 3. The wider beaches slow the waves. 4. They starve beaches further down the coast of sediment, causing narrower beaches and therefore increased erosion.
Sea Wall 	1. A wall made out of concrete. 2. Reflects waves back out to sea. 3. Prevent erosion and have a long life span. 4. They are ugly to look at, and are very costly.
Revetments 	1. A wall of wire cages filled with rocks. 2. They absorb wave energy and stabilise the cliffs. 3. They are cheap. 4. They are ugly, and the wire cages corrode easily meaning they have a short life span.

Soft Engineering:

1. **Beach replenishment** means adding more sand to the beach, making the beach wider.

2. **Managed retreat** allows the coast to erode naturally, people and businesses are moved. The council may give compensation to those that lose out.

Key words:

Waves: The movement of water molecules within the ocean

Fetch: The distance the wind blows over open water

Erosion: Where the coastline is worn away by the sea.

Landform: Features of the earths surface

Costal management: Defence against flooding and erosion .

Year 8 Geography: Coasts

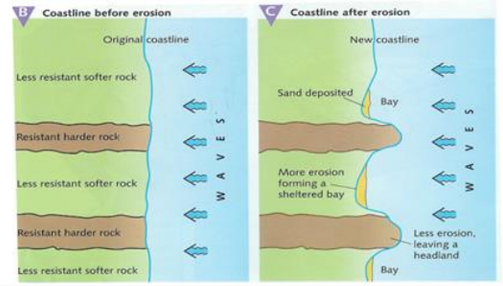
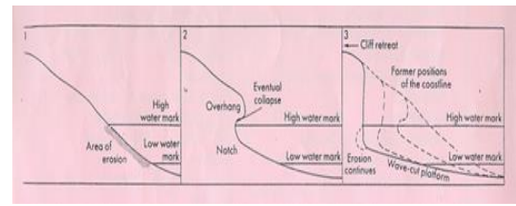
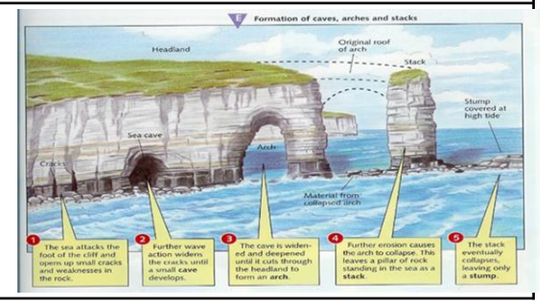
Week 1

Questions	Answers
What are the two types of waves?	Constructive and destructive
What is the fetch?	Distance travelled over open water
How can waves be formed?	By the wind, earthquakes and volcanoes
What are the characteristics of constructive waves?	These waves are gentle, and they are far apart. They have a strong swash and a gentle backwash. As a result, these waves transport and deposit a large amount of material onto the beach, 'constructing' a new beach.
What are the characteristics of destructive waves?	These waves are steep, and they are close together. They have a weak swash and a strong backwash. As a result, these waves erode and remove sand and pebbles from the beach, 'destroying' it.

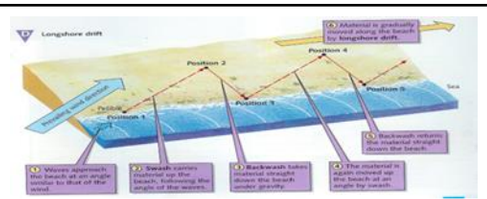
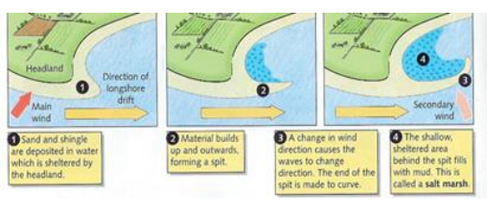
Week 2

Questions	Answers
Define Abrasion	Eroded material is hurled or scrapes against the cliff, breaking off rock.
Define Hydraulic Pressure	Waves compress pockets of air in cracks in a cliff, causing the crack to widen, breaking off rock.
Define Solution	Cliffs e.g. chalk dissolve in sea water.
Define Attrition	Eroded material in the sea, hit into each other breaking down into smaller pieces.
Define Freeze-thaw Weathering	Water collects in faults during the day. At night, this water freezes and expands. This makes faults bigger over time because the process repeats itself.

Week 3

Questions	Answers
Sketch the formation of headlands and bays with labels	
Sketch and label the formation of a wave cut platform	
Sketch and label the formation of caves, arches, stacks and stumps.	

Week 4

Questions	Answers
Sketch and label the process of longshore drift	
Sketch and label the formation of a spit	
How does a bar form?	When a spit connects two headlands
How does a tombolo form?	When a spit extends to an offshore island

Week 5

Questions	Answers
When does sea level change?	Every day due to the tides.
What changes seas level in the long term?	Climate change.
Describe a groyne	A wooden or stone fence built at right angles to a beach
What does a groyne do?	A groyne will trap longshore drift, creating a bigger beach
What are the negatives of a groyne?	They starve the beaches further down the coast of sediment, increasing erosion

Key words:

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