Y5

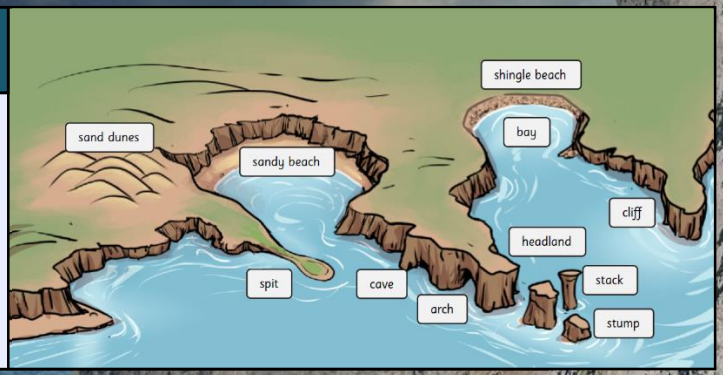
What are coasts and how does erosion affect them?

Knowledge Organiser

What are coasts?

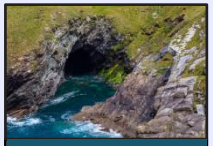
A **coast** is the place where the **land meets the sea or an ocean**.

It's like the **edge** of the land where you can see the water.



Physical features of coasts

Coasts can have many different physical features.



This is a **cave**.

A cave is a hollowed-out space in a cliff or rock formation along the shoreline

This is a **sand dune**.

A coastal sand dune is a hill of sand near the beach, formed by the wind, where plants often grow and animals can find shelter.

This is a **rock pool**.

A rock pool is a small, shallow pool of seawater found on rocky shores, created when the tide goes out and often filled with fascinating sea creatures and plants.

This is a **bay**.

A coastal bay is a wide, curved area along the shore where the land curves inward. It may have sand, pebbles or shingle on it. A cove is a small bay.

This is a **headland**.

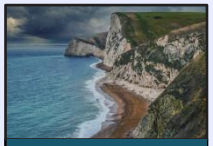
A headland is a rugged, rocky peninsula that extends out into the ocean, forming a distinct feature along the shoreline.

These are **stacks** and **stumps**.

Stacks are tall, pillar-like rocks in the sea near the coast, created by waves eroding cliffs, while stumps are shorter, flat rocks that are the remains of eroded stacks.

This is a **spit**.

A spit is like a sandy peninsula extending from the mainland into the ocean. It is usually a narrow sandy strip of land.

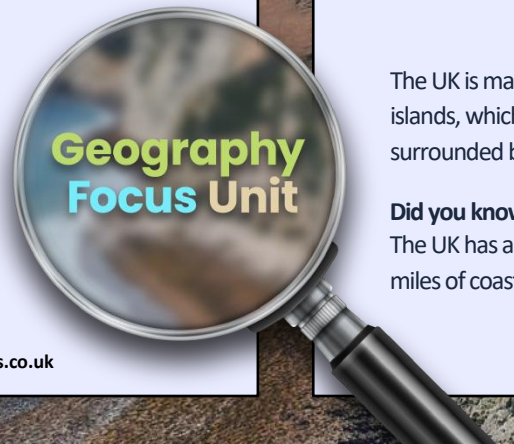


These are **cliffs**.

Cliffs are tall, steep rock faces usually found by the sea.

This is an **arch**.

An arch is like a giant doorway made by the sea.



Why does the coast have so many different physical features?

Rocks and soils
The land along the coast has different rocks like limestone, sandstone, and granite. Different types of rock cause different features to form.

Sea level changes
The sea level goes up and down a lot over a long time, and this makes the land near the sea change.

Waves and tides
Different parts of the sea, create different-sized waves along the UK coast. The shape of the land and how windy it is also make the tides and waves change in each place.

Weather
Rain and wind can wear down the land, making it change shape over many years.

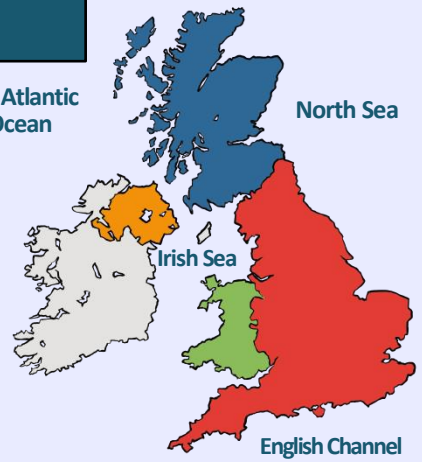
Glaciers and tectonic movement
Long, long ago, big ice sheets called glaciers moved over the UK land, making valleys and hills near the coast.

Humans
People building structures like houses and roads, or other activity like mining or quarrying can change how the coast looks.

UK seas and oceans

The UK is made up of islands, which means it is surrounded by the sea.

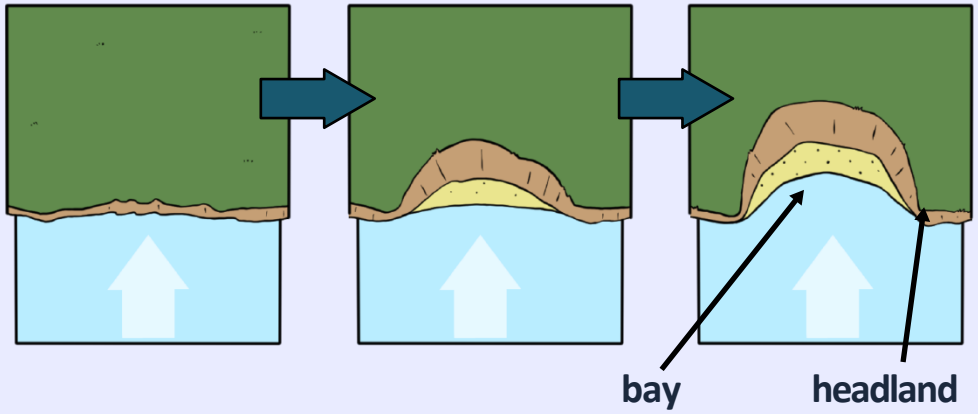
Did you know?
The UK has around 19,600 miles of coastline.



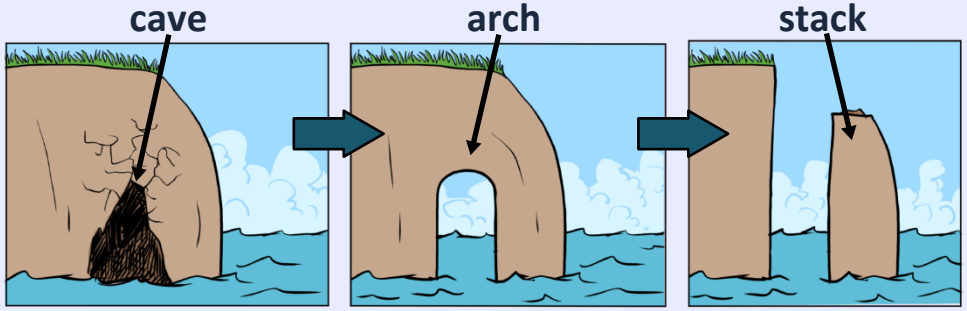
Erosion

The sea is always moving, so the coast is always changing.
Parts of the coastline get **worn down** and **moved** by natural forces such as water and wind. This is a physical process called **erosion**.

Features formed by erosion



An area of the cliff face which is made from weaker rock is retreating because of erosion.
The sea travels further inland to form a **bay**. This leaves the areas of stronger rock jutting out into the sea forming **headlands**.

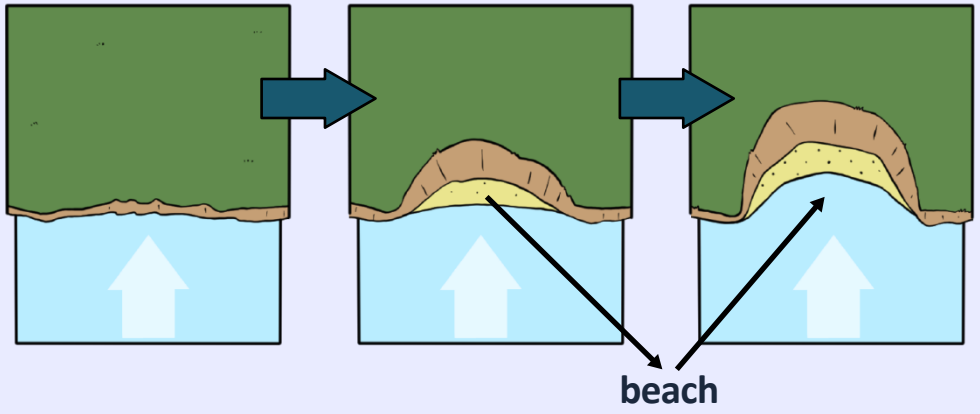


Erosion causes the cracks on the cliff face of the headland to become bigger.
Eventually, the cave will carve all the way through the headland and form an arch. The top of the arch collapses and leaves a stack.

Deposition

Landforms can be created by **sediment** left behind by the **waves**. This is a physical process called **deposition**.

Features formed by deposition



The sea carries **sediment**. Weaker waves deposit this sediment on the shore and over time the beach gets bigger. This is an example of a landform created by deposition.

Sand dunes are created when the wind blows sand into piles, often helped by plants like marram grass, whose roots hold the sand together.

A **spit** is formed when waves move sediment along the shore and it piles up creating a long, thin strip of land that sticks out into the water.

Coastal defences

The **erosion** of the coastline causes **local habitats** to be **destroyed**. This means the native wildlife lose their homes and food sources.

The changing coastline can often mean homes, businesses, roads and other buildings are at risk.
We cannot stop coastal erosion. However, we can try to slow it down, this is called coastal management or coastal protection.

sea walls

groynes

revetment

rock armour

dune nourishment

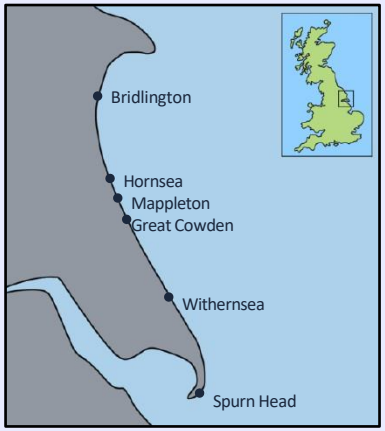
beach nourishment

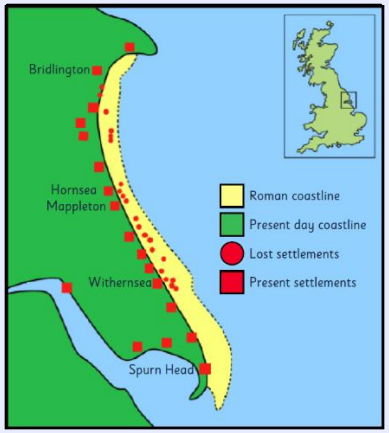
Not all UK coastlines have coastal **defences**. This is because not all areas are equally at risk from coastal erosion. Constructing and maintaining coastal defences is extremely expensive. Therefore, funding is often prioritised for areas more at risk.

It is also important to remember that **erosion** is a **natural process**, that only needs management if there is a risk of damage to **life** or **property**.

Case study: **Holderness**

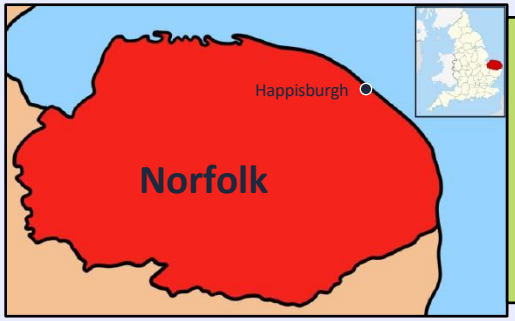
Holderness is a coastline in the east of England. It has the fastest eroding coastline in the whole of Europe. This is because of the type of rock the coast is made up of. Approximately **3 miles of land have been lost** since Roman times, including 23 towns/villages.





Case study: **Happisburgh**

Happisburgh is a village in Norfolk that is very close to the coastline although it wasn't always as close as it is now. Happisburgh has a long history of dealing with coastal erosion. Years ago, there were more houses and roads, but many have already been lost to the sea.



The **Save Happisburgh** campaign has been set up by locals to help combat erosion and educate people about the situation.