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Did you know that...

CLIMATE CHANGE IS A SERIOUS THREAT TO OUR PLANET?

COASTAL

Scientists agree that the climate is changing. The climate is the average weather over a period of time.

So, climate change means a significant change in the measures of climate, such as temperature, rainfall, or wind.

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Did you know that...

CLIMATE CHANGE AFFECTS OUR COASTLINES?

COASTAL

The effects of climate change are evident with increased temperatures.

These increased temperatures can lead to more unpredictable weather conditions that could lead to increased rainfall, storms and warmer oceans.

Storms have become more frequent and intense which have battered our coastlines.

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Did you know that...

THE SEA LEVELS ARE RISING TOO?

COASTAL

As well as more storms on our coastline, climate change is causing sea levels to rise.

Glaciers/ice sheets are melting and adding freshwater to the ocean which becomes salt water.

Coastal communities and ecosystems will be disrupted as the coastline will be under sea level, salinised and eroded away.

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Did you know that...

COASTAL EROSION IS INCREASING?

COASTAL

Coastal erosion is a natural process where waves wear down the coastline and deposits sediment elsewhere.

This is a slow process but has been accelerated due to the effects of climate change. Coastal erosion will see the increased disappearance of habitats for coastal flora and fauna.

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Did you know that...

THE COASTAL ECOSYSTEM IS BEING DISRUPTED?

COASTAL

Our beaches are home to many different flora and fauna.

There are many habitats from our shoreline/waters edge right up to the top of the sand dunes including the intertidal zone.

These have been disrupted by many factors including coastal erosion, climate change and human behaviour.

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But after al...

WHAT IS THE INTERTIDAL ZONE?

The intertidal zone is the area underwater at high tide and above water level at low tide. This area is home to several types of fauna. They have adapted to the unique conditions of being under and over water.

Rock pools are common here. A rocky, steep-angled intertidal zone can fend off coastal erosion during storms.

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But after al...

WHAT FAUNA IS IN THE INTERTIDAL ZONE?

COASTAL

The intertidal zone is the habitat of many types of fauna:

Starfish (asteroidea) are not actually fish as they do not have a backbone. The habitat of the starfish is the intertidal zone along with rock pools and ocean floor.

The habitat of the periwinkle (littorina littorea) is the upper shore or upper intertidal zone. Here they can be found in rock pools, tide pools and muddy estuaries. They feed on algae.

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But after al...

DO MOVE FROM DIFFERENT TIDAL ZONES?

COASTAL

Crabs (brachyura) inhabit the intertidal zone for 3 years and then they habitat in the subtidal.

The subtidal zone is the region below the intertidal zone and is continuously covered by water.

This zone is more stable than the intertidal zone as there is a no great changes in temperature, sunlight or water pressure.

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But after al...

WHAT FLORA IS IN THE INTERTIDAL ZONE?

COASTAL

The intertidal zone is the habitat of different types of marine flora, one of them is seaweed (macroalgae)

Seaweed are very different from land plants in that they do not have a root system for absorbing nutrients.

Seaweed provide important habitat for many species in the intertidal and subtidal zones.

Seaweed typically become more abundant and complex as you move lower down the intertidal zone.

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IS IT TRUE?

COASTAL MANAGEMENT CAN HELP?

COASTAL

Coastal management is defence against flooding and erosion, and techniques that stop erosion to claim lands.

Coastal defences play an important role in coastal management. The coastline is protected from flooding and erosion through hard defences e.g. gabions and groynes, and soft defences e.g. beach nourishment.

However, they can lead to increased erosion in other areas and affect ecosystems. They can disrupt the natural flow of the different habitats from the dunes to the subtidal zone.

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IS IT TRUE?

MARRAM GRASS HAS A SIGNIFICANT ROLE ON THE COASTLINE?

COASTAL

Marram grass (ammophila) has a significant role and is the dominant flora on sand dunes.

Marram grass can grow on and bind sand together. It has become a useful plant to help coastal defence along beaches.

The growth of this plant is important to combat coastal erosion. However, the plant can be destroyed by people walking through the sand dunes.

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IS IT TRUE?

SEAWEED CAN ABSORB CARBON DIOXIDE?

COASTAL

Seaweed (macroalgae) can play an important role on combating climate change.

Kelp (Laminariales), for example, is a type of seaweed that inhabits sea waters in the subtidal zone and is part of the algae family. Kelp through photosynthesis can absorb carbon emissions from the atmosphere.

Coastal marine systems can absorb carbon at a rate of 50 times more than forests on land.

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IS IT TRUE?

SEAWEED CAN BE USED AS A BIOFUEL?

COASTAL

A biofuel is produced from organic matter or waste. They are one of the largest sources of renewable energy.

Scientists have recognised seaweed as a sustainable source of biofuels.

Seaweed cultivation does not require arable land, fertilisers or irrigation.

More research and development is required to fully utilise this natural resource.

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TAKE ACTION!

BE AWARE OF THE COASTAL ECOSYSTEM!

COASTAL

We can take an active role in being aware and protecting our coastlines and our ecosystems.

When you go for a walk on the beach make yourself and others aware of the different flora and fauna that inhabit this ecosystem.

However, be careful not to disrupt their habitats and be respectful of the fauna and flora present.

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TAKE ACTION!

BE AN ACTIVE CITIZEN!

COASTAL

When you go for a walk on the beach make sure to take away any rubbish with you.

Plastics, in particular, can disrupt the ecosystem as fauna and flora get tangled up or digest them as microplastics.

Say no to disposable plastic!

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TAKE ACTION!

CUT YOUR CARBON FOOTPRINT!

COASTAL

Simple steps help to reduce our carbon footprints. Steps such as using less water and cycling/walking to school.

Greenhouse gas emissions are increasing and are a cause of climate change which affect our coastlines.

Therefore, it is crucial that we all make an effort to reduce our carbon footprint.

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But after al...

HOW IS CLIMATE CHANGE THREATENING THEM?

COASTAL

Warming oceans and rising sea levels are having a detrimental effect on the habitats.

The crabs (brachyura) are having to adapt their thermal tolerance to survive.

The warming of the ocean has a negative effect on starfish (asteroidea) making them more susceptible to disease.

The increase of acidity of the ocean due to climate change could have a disastrous effect on the periwinkle (littorina littorea). They are already adapting to this by creating their shells more acid resistant.

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But after al...

HOW IS POLLUTION THREATENING THEM?

COASTAL

Humans have an effect on crab (brachyura) habitats by disturbing natural habitat by littering. This littering is causing the deaths of crabs due to them getting stuck in items of rubbish.

The population of starfish (asteroidea) will decline due to pollution as they are unable to filter any contaminants that are dumped into our oceans. These contaminants will poison the starfish.

Microplastic toxins chemicals suppress the periwinkles (littorina littorea) ability to detect predators.

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TAKE ACTION!

CREATE A SUSTAINABLE WORLD!

COASTAL

You can take action by working to combat to climate change.

You can take an active role by creating and designing solutions in many sectors such as in marine science, agriculture, healthcare, industry and engineering, which need to be more sustainable and environmentally friendly in the future.

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