

Exploring UK locations (Zoom In, Zoom Out)

Coasts and sustainable use of natural resources

De-Graft: The UK is surrounded by water and there are many different ways for it to be enjoyed. Like surfing!

The coast is where the land meets the sea or ocean. Often coastal areas are popular places for tourists to visit, holiday, and have fun - like here in North Wales. Later locals Jayden and Eira are joining me to find out how coastal areas like this are also used to help produce renewable energy. But first, let's zoom out.

I'm here in a region, or principal area as it's known in Wales, called Denbighshire. Wherever you live in the UK you're never actually that far away from the coast. If you were to measure around all of the UK's coastline it would be thousands of kilometres long.

Coastal areas can look really different. They can range from Northern Ireland's rugged Causeway Coast with amazing ancient rock formations... To a seaside resort like Brighton, in the south of England. Some key coastal features you'll find are beaches, sand dunes, cliffs, and caves.

Coasts are dynamic habitats, which means they are constantly changing due to natural forces. There is continuous erosion - that's where the water wears away at the land, and deposition, where the water drops off bits of rock and sand it's been carrying.

There are lots of ways to try and protect our coasts including hard sea defences, such as sea walls, or soft defences, such as planting vegetation.

As well as being places where people come to take in the scenery, coastal areas are also where people live and work. There are many different jobs in coastal areas, from those based on the beach, like a lifeguard; to jobs based on the water, like a fisherman; to jobs based on dry land, like a café owner.

Another type of work in coastal areas is renewable energy projects such as offshore wind farms. I'm with locals Jayden and Eira at Gwynt Y Mor wind farm in North Wales.

Child: And then do I put one of these on?

De-Graft: Yeah, you do. We're making windmills to understand more about how wind turbines work.

Child: I've finished.

De-Graft: And outside we're getting a closer look at an old wind turbine blade. What do you make of it?

Child: I've never seen one up close and it's bigger than what I thought.

De-Graft: So wind turbines are quite similar to the windmill toys that we've got in front of us. What they are able to do is detect the direction of the wind coming in and rotate so the blades are in the best position to spin. So, see if you can turn your windmill toy so it's in the best position to catch the wind. You guys have got it! Mines managed to turn as well!

So why do you two think that the sea is especially windy?

Child: I think that it's because there's more mountains and buildings and stuff blocking the wind and, on the sea, there are none.

De-Graft: Yep, you're absolutely right - there aren't really any obstacles in the sea. Now why do you think wind turbines might be a good idea?

Child: Because of climate change we need wind farms to help produce energy.

De-Graft: Yeah, spot on! Wind turbines are a good source of renewable energy, which is better for the planet. But what exactly is renewable energy? Let's hear from an expert...

Expert: Think of fossil fuels, like coal or gas, when you burn it, it's gone. It also emits smoke, and it emits CO₂, which we know is warming the atmosphere as part of global warming. Whereas the wind, isn't there every day, but it's there most days and it will be there tomorrow, and it will be there the day after tomorrow, so it's renewable. It comes back and you can use it again.

De-Graft: OK, time to compare. Wind turbine blades are around 50 metres on average. That's nearly as tall as Italy's tower of Pisa or the same length as 11 cars.

So, what does the coast nearest to you look like? What kind of features does it have? Zoom in and have a look for yourself.

Right guys, who can make their windmills turn the fastest?