How is plastic made?

Have you ever wondered how we get the plastic products we use everyday? The process of producing plastic takes a great deal of time, energy and resources and starts deep below the ground.

Did you know that over 99% of plastic is made from chemicals sourced from fossil fuels (like oil and natural gas)? That means that making plastic is contributing to climate change as well as causing pollution around the world.

It would be easy to think that the solution to plastic pollution would be to get rid of plastics altogether - but actually, we need to remember that plastic plays an important part in our lives.

Some plastics are used for essential purposes - like hospital equipment and scientific endeavours like space exploration ! But there are many plastics (mostly single use plastics) that we can avoid altogether, like plastic bags and unnecessary food packaging.

1 Raw Materials

Plastic production begins underground, deep below the ocean floor. Crude oil is pumped up through the ground and sea through long pipes. It is then sent to an oil refinery.

2 Cracking and Polymerisation

Crude oil is a smelly black liquid, so you have to use energy and water to process it. Then a chemical reaction called 'polymerisation' combines hundreds of thousands of small molecules called monomers to form a polymer chain. Millions of polymer chains are formed at once creating a mass known as a resin.

3 Resins

Resins come in different shapes and sizes, like flakes, powders and small pellets called 'nurdles'

4 Preforms

Using heat and pressure, the pellets are melted down and injected into a mould to create a small plastic tube called a preform. It gets reheated and blown up (a bit like a balloon) and starts to take the shape of plastics you recognise.