



What is Plastic?

Study*ladder*

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The name plastic comes from the Greek word *plastikos* which means '*capable of being shaped or moulded*'.

It is a man-made product. It does not occur naturally in the world. Most plastics are made from petrochemicals. (Petrochemicals come from non-renewable sources such as natural gas, oil or coal.)

The molecules in plastic form long chains called *polymers*. Its molecular structure gives plastic its strength and flexibility.

Today, many different types of plastics can be made for a variety of purposes. Plastic can be thin and flexible or thick and rigid. Products made from plastic are light weight and strong.



What were the first plastics used for?

The first commercial plastic, Bakelite, was invented in 1907. It was a revolutionary new product that could be heat pressed into different shapes and used for a variety of purposes.

It was first used as a coating for electrical wiring and became popular in the production of a variety of household products. It was used in kitchen ware, telephones and radios. It was even used in jewellery.



The Big Plastic Problem

By the 1950s new types of plastic were available and by the 1970s plastic was used to manufacture a wide range of products. But these plastics couldn't be melted and reformed into new products. They were just thrown away when they were no longer useful.



Waste disposal takes up a lot of space in landfill. The problem with plastic is that it takes so long to break down. It can take hundreds of years and it is thought that some types of plastic, like polystyrene foam, may never break down! The increasing popularity of disposable food packaging only made the problem worse.



Eventually, new types of plastic were introduced that could be recycled. Manufacturers also began using additives that could help the plastic break down more quickly.



How is plastic made?

Plastic is made by chemically bonding oil and gas molecules. This forms a resin which hardens into plastic.

The plastic resin is cut into tiny pieces called pellets. These form the base product for plastic manufacturing.

When the pellets are heated they melt and become like thick toothpaste. The plastic can then be formed in moulds. Once the plastic cools it keeps the shape of the mould.

Air can also be forced through the plastic resin to create thin flexible plastic, that is used for lunch wrap.



How is plastic recycled?

Plastic products are marked with various recycling codes if they are able to be remade into new plastic.



Plastic items are collected and sent to recycling facilities where they are sorted and pressed together into large blocks.

The blocks are then shredded. The tiny pieces of old plastic are washed and melted to form a resin once again. The resin is cut into new pellets ready to be sold to manufacturers.



The pellets are then melted once more and formed to make new plastic products.

