

What are plastics?



Is plastic fantastic?

Plastics are everywhere. You can find them in your clothes, the furniture at home and school, in bikes, cars, trains and planes, in computers, laptops, tablets and phones, in toys, in food packaging, in medicine: basically every area of your life.

Often, we are so familiar with seeing plastic that we forget to notice it, value it and care for it properly, particularly when we have finished with it. But plastics are amazing and have totally transformed the way we live.

So, what are plastics?

Plastics is the name given to a group of materials that can be softened when heated or put under pressure (squashed), and then moulded into shape.

There are many different types of plastics and most of them are made from organic substances (things that once lived) e.g. oil and corn. There are natural plastics, semi-synthetic plastics and synthetic plastics.

Natural plastics

Natural plastics are derived from plant or animal material and can be shaped or moulded without having to add anything else to them.

An example is horn, from animals such as cows and sheep.

People have used these natural materials for thousands of years.



A horn beaker. This is 200 years old.

Semi-synthetic plastics

Semi-synthetic plastics are natural materials that have had chemicals added to them.

An example is casein where the chemical formaldehyde is added to milk curds (when sour milk goes lumpy). By adding these chemicals, the properties of plastics can be changed and improved.

People have been making semi-synthetic plastics for about two hundred years.



Counters for a game made of casein.
These are almost 100 years old.

Synthetic plastics

Synthetic plastics are made by reacting chemicals in a laboratory and so are completely man-made.

An example is Bakelite, a chemical reaction of phenol and formaldehyde.

These plastics have been developed over the past one hundred years and new ones are being created all the time.



Bakelite radio. This is 75 years old.

Why we love plastics

There are many different types of plastics that can all do different things. For example, the plastic used to make a Lego brick is very different to that used to make a fleece jumper.



Plastics can have many different qualities. They can be light or heavy in weight, they can be very soft and bendy or hard and rigid. They can be made into any shape with any texture in any colour or be transparent with no colour at all.



Why we don't love plastics

We can buy things like disposable plates and cutlery quite cheaply. That means we don't value the material – we use it once and then get rid of it.

We don't always use plastics properly. When we make something with a short use (like food packaging) we don't need to use a material that will last for years.

Some plastics do not easily break down in the environment. If we don't throw them away properly they can become a problem.



What should we do?

Nobody wants to see waste (of any material) in our seas, on our beaches or in our streets. Plastics are often highlighted as the problem because they are so visible: they can be seen floating in water, blowing in the wind and caught in trees as litter.

By recycling them, we continue to make use of these valuable materials.

It takes 75% less energy to make a bottle from recycled plastic compared to making it from new material.

People in the UK are only sending 58% of their plastic to be recycled.

We all need to take more responsibility for our waste.

