



DID YOU KNOW?

Plastics can take a long time to break down. A plastic bag will last 20 years; a plastic straw 200 years; and plastic toothbrushes survive for 500 years.



Make bioplastic festive decorations

Using household ingredients and some clever chemistry, conjure up some simple, eco-friendly plastic decorations.

What you need

- 75ml water
- 3 packets of gelatin (or a vegan alternative)
- Food colouring
- Pan
- Wooden spoon
- Jug
- Silicone moulds (festive if you can)
- Ribbon
- Glue

How does it work?

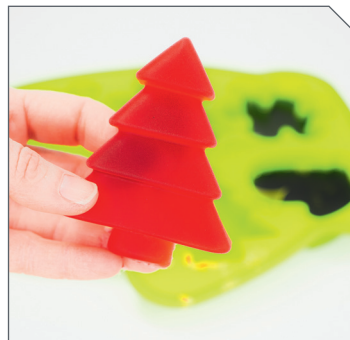
Bioplastic is a type of environmentally friendly plastic that is made from plants or animal products. Most mass-produced plastics are made from fossil fuels, such as oil. Plastics are substances made up of long chains of molecules, called polymers, linked together. Gelatin also contains long molecules, which unravel when heated. As it cools, these chains then link together, trapping water molecules to make a complex 3D structure. In this experiment, you add lots of gelatin to a small amount of water to create a hard material that holds its shape. If you were to add more water, a more jelly-like mixture would result. Treated carefully, your homemade bioplastic decorations may last for years. However, unlike plastics made from fossil fuels, they don't take hundreds of years to break down.



1 Add the water, gelatin and a few drops of food colouring to a pan. Heat slowly and stir very gently – you don't want any bubbles to form.



2 Once combined, pour the mixture into a jug and then into the moulds. Scrape off any foam from the top, to keep your decorations neat.



3 Leave to set in the moulds for five days, then remove. Allow the bioplastic shapes to harden for two more days out of the moulds.



4 Glue a loop of ribbon to the back of each of your decorations. Hang them on your tree, or anywhere else to bring a twinkle of festive joy.