Irreversible changes

Honeycomb toffee

Domestic science activity pack

You will need

4 desert spoons granulated sugar,

2 desert spoons syrup,

1/4 teaspoon bicarbonate of soda,

and saucepan.

Measure the sugar and syrup into a pan and stir over a medium heat. What happens to the sugar?

When the sugar has completely dissolved, bring the mixture to the boil and let it bubble until the mixture turns dark brown. Why has the colour changed?

Add ¼ teaspoon of bicarbonate of soda. What happens to the mixture? Allow to froth while stirring out any lumps.

Pour onto a baking tray and allow to cool. What happens to the mixture as it cools down?

Background notes You can explore the changing properties of materials caused by heating and cooling. Heating the syrup and the sugar together causes the sugar to dissolve into the syrup mixture. As the mixture comes to the boil it starts to oxidize causing the colour change. When the bicarbonate of soda is added the mixture starts to froth. This is because gas is being created and released forming bubbles within the toffee mixture. As the toffee sets the bubbles leave pockets of air inside the toffee, creating the honeycomb texture. When you pour the mixture into the tray it begins to cool. As it cools it begins to harden and form the solid (and brittle) toffee.