the magic behind

Coloured Flame Candles

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Birthday Cakes and Candles

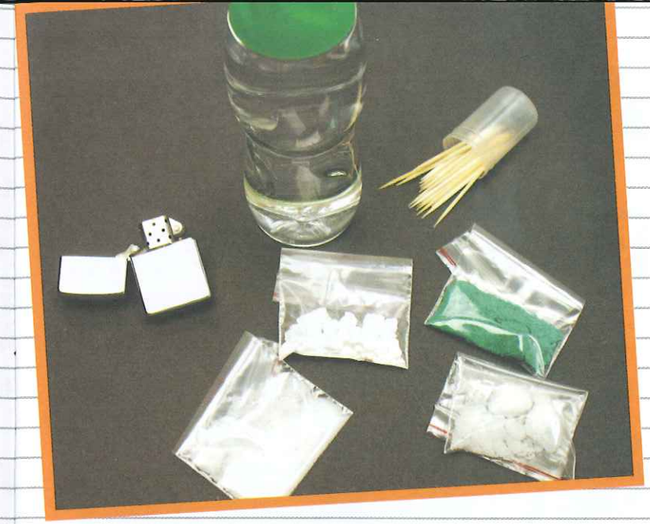
No birthday celebrations are complete without the birthday cake. Traditionally, people have decorated birthday cakes with taper candles. But now, you can buy delightful birthday cake candles that burn with amazing colour flames.

The Magic behind Colour Flame Candles

As its name suggests, colour flame candles are candles that generate colour flames when they burn. Such candles are made from chemicals that contain metallic ions and the whole idea works on the scientific principle that when heated, the electrons (電子) of metallic ions and other compound molecules change from a high energy level state to a lower one. During the transition, energy is released in the form of colour light. So if you sprinkle (灑 ; 撒) a pinch table salt (sodium chloride) into a fire, the fire will generate a golden yellow light.

Not all compounds can produce colour flames. Certain metal ions will give the flames very distinctive colours, which can help us identify the presence of specific metals in them. The table below is a list of some of the most common colour-producing compounds.

Chemical		Colour
• lithium salts	→	brick red
• sodium salts	→	golden yellow
• copper salts	→	apple green
• potassium salts	→	lilac



Doing a Flame Test

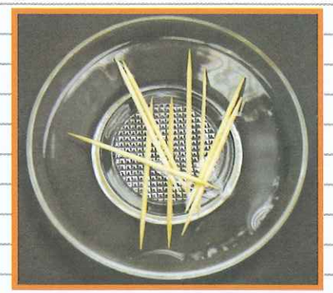
Make sure that you do this experiment under the supervision of your teacher or parents.

A flame test is a procedure used in chemistry to detect the presence of certain metals in chemical compounds.

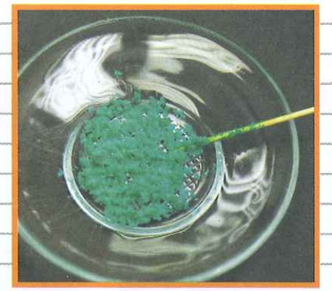
To do the experiment, you will need

1. some wooden toothpicks
2. some samples of different salts for testing (available in aquarium shops)
3. a gas lighter
4. some distilled water

Procedures



1. Soak the wooden toothpicks in distilled water to wash out any impurities.



2. Dip a toothpick in the sample to be tested.

3. Place one end of the toothpick into the flame of the gas lighter.

4. Observe the change in the colour of the flame.