**Coloured Flames**

**Curriculum Links:**

OM1.1 Investigate observable characteristics and uses of natural and constructed objects and materials in their environment. [CP, SI]

RM4.1 Investigate physical properties of rocks and minerals, including those found in the local environment. [CP, SI]

MC5.1 Investigate the characteristics and physical properties of materials in solid, liquid, and gaseous states of matter. [CP, SI]

MS7.3 Investigate the properties and applications of solutions, including solubility and concentration. [SI, DM]

AE9.1 Distinguish between physical and chemical properties of common substances, including those found in household, commercial, industrial, and agricultural applications. [SI]

**Science Background:**

When a metal or metal salt is burned, the input of thermal energy raises the electrons in the metal atom to a higher energy state. These electrons cannot remain in this excited state for too long and will emit energy in the form of light to return to the more stable, grounded state. It is this light we see when a metal atom is burned in a flame. Each metal has a characteristic flame colour which has been found to be useful in identifying minerals.

**Materials:** wood splints, Bunsen burner or BBQ lighter, solutions of strontium chloride (red), cupper (II) chloride (blue), copper (II) sulphate (green), calcium chloride (orange), potassium chloride (purple), and sodium carbonate (yellow).

**Directions:**

1. Dissolve some of each salt in a test tube.
2. Set one splint in each test tube and allow to soak overnight.
3. Hold the splint over a flame to produce coloured flames.

**Inquiry Questions:**

**Source:** <http://www.sciencecompany.com/Creating-Flame-Colors.aspx>