COPPER PLATING

LEVEL OF DIFFICULTY

OUTLINE OF ACTIVITY

This activity shows how electricity can be used to split the components of a chemical, in this case, copper sulphate. Graphite pencils are used for electrodes. The process is called electrolysis and is commonly used in industry to extract pure metals and to electroplate objects to produce a metallic coating. When an electric current is sent through copper sulphate solution, copper is deposited on the tip of the pencil.

WARNING: Club members should be supervised when handling copper sulphate solution which is harmful if swallowed.

EQUIPMENT

Quantities are based on a **make** and **take** approach to produce 20 copper plating experiments.

- pencils x 40
- batteries x 40
- battery holders x 20
- bulbs x 20
- bulb holders x 20
- crocodile leads x 60
- copper sulphate solution*
- safety goggles

* add two teaspoons of copper sulphate crystals to approximately 100ml of water.

SCIENCE CONTEXT

Electricity, constructing circuits and incorporating a battery.

Changing materials, describing changes that occur when electricity is passed through a solution of copper sulphate.

SCIENTIFIC EXPLANATION

When electricity is passed through copper sulphate solution, the solution is split into its components. Copper, which appears as a pink coating, is deposited on the negative electrode. This is because the copper has a positive charge.