Extracting A Metal From Its Ore

The *periodic table* is a powerful tool for understanding the relationship of elements to each other.

In order to develop the periodic table, *pure elements* were required for researching.

Most elements *do not* exist in a pure state in the earth.

Most elements are part of a *compound* (one or more elements bonded together in a fixed ratio). One example of a compound is copper carbonate (CuCO₃). The element ratio for CuCO₃ is: 1xCopper: 1xCarbon: 3xOxygen

Scientists have to extract the pure element from the compound e.g. ore of various rock types or coal or.......

Today, you will simulate how the compound copper carbonate (CuCO₃) can be taken through a series of chemical reactions in order to extract the element - pure copper.

**Steps:**

1. Add 1 tspn CuCO₃ to a large test tube.
2. Gently heat test tube over Bunsen burner until black copper oxide (CuO) forms. Allow to cool.
3. Add 30mls of sulphuric acid (H₂SO₄) to the test tube. Wait until reaction is complete.
4. Transfer blue liquid only from test tube contents to a beaker.
5. Secure a copper electrode and a coin electrode to the side of the beaker (alligator clips) and attach to a transformer.
6. Using 8V DC initially, observe the copper depositing on the coin.