KS4 Chemistry

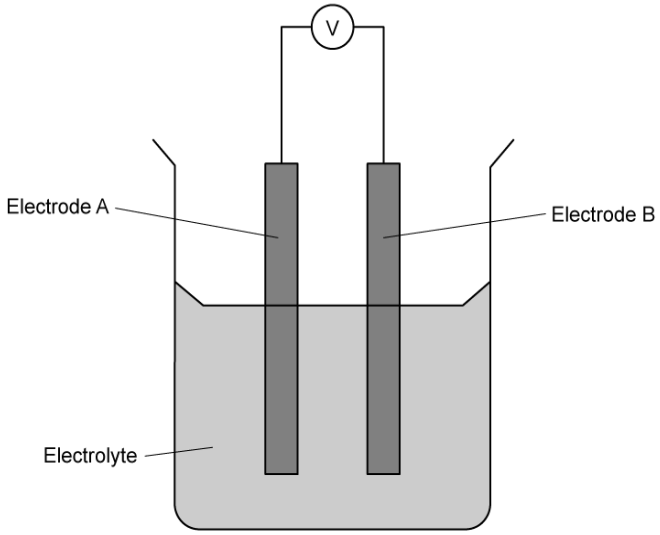
Activity Sheet 1 (Revised September 2026)

The reactivity Series of Metals

Some metals are more reactive than others. We can investigate this by using different pairs of metal electrodes to produce a voltage in a cell. The greater the difference in reactivity between the metals, the higher the voltage produced. We will use a copper as electrode A in each test; the electrolyte completes the circuit.







Materials:

Various metal electrodes (e.g. copper, zinc, magnesium, iron)

Fizzy drink electrolyte solution

A voltmeter/multimeter

Wires & crocodile clips to connect the metals to the voltmeter

Procedure: Wear eye protection and gloves

1. Set up the cell circuit:
   For each metal pair (e.g. iron and copper), place both metals into the electrolyte solution. Connect the two metals using wires and a voltmeter to form a complete circuit.
2. Measure the cell voltage:
   Read the voltage produced by each cell and record in the results table.
3. Repeat for different metal pairs:
   Test the different combinations of metals and record the voltage readings.
4. Work out the order of reactivity of the metals tested:
   Use the average voltage readings from all the groups to place the metals tested in order of reactivity. Are the results what you expected?

You may then use the results to make up a battery of several cells to produce the highest voltage possible.

Record the voltage readings

Pair of metals	Cell voltage (V)					
	Group 1	Group 2	Group 3	Group 4	Group 5	Average
Copper and iron						
Copper and zinc						
Copper and lead						
Copper and magnesium						
Copper and aluminium						