**Title**: The electrochemical series

**Aim**: To construct a simple electrochemical series

**Background**

In chemistry we make a lot of use of the electrochemical series. In this experiment you will see how this table was prepared.



**Method**

Your group is supplied with a copper/copper ion half cell.



**Procedure**

1. You will attach it to another half-cell and record the voltage and the polarity. Example shown: copper and zinc half-cells attached.
2. Replace the zinc half-cell with a lead half-cell and record the voltage and polarity between lead and copper.
3. Repeat for other half-cells provided.

**Results**

Make a table of the cell combination, voltage obtained and the electrode polarity.

**Questions**

1. When copper and zinc half-cells are connected, how can you use the polarity to tell which metal is the least reactive?
2. Rank the metals in order of reactivity, from least to most.
3. a. Use the data obtained to construct an electrochemical series for the half-cells you tested.

b. What did you choose as a standard?

1. Take one galvanic cell, perhaps the copper-lead one and draw it and annotate it with
* the direction of electron flow
* the anode and cathode
* label the oxidant and reductant
* the two half-equations
* the overall equation
1. When the electrochemical series in your data book was prepared,
2. What standard was used?
3. What steps were taken to ensure each experimenter gets the same voltages?
4. If a zinc half-cell was connected to a lead half-cell, what would the voltage be and which metal would be the positive electrode – you should be able to use your version of the table to answer this.