

# Electrochemical Writing Instructions

## Introduction

A solar cell contains two electrodes. Different reactions happen at each electrode so that electrons can move around the circuit to give us electricity. In this experiment we can see the effect of these reactions and the importance of building the cell correctly.

## Equipment per person/pair/group

Small beaker	Filter paper
Salt (NaCl)	Shallow dish (e.g. watch glass, petri dish)
Spatula	Battery pack or 9V battery
Water	Wires and crocodile clips
Indicator (e.g. universal, phenolphthalein, methyl orange)	Carbon electrode: pencil sharpened at both ends
2 x pipettes	

## Method

1. Make up a small amount of salt solution by dissolving 1 spatula of salt in **2-3 ml** water
2. Add a couple of drops of indicator
3. Place filter paper in the dish
4. Use a pipette to drop the salt solution onto the filter paper until it can't absorb any more.  
**Don't over soak the filter paper!**
5. Attach the positive terminal of the battery or battery pack to the filter paper using a wire and crocodile clip.
6. Attach the negative terminal to the one end of your carbon electrode (pencil). Make sure the metal clip is in contact with the graphite core of the pencil.
7. Use the carbon electrode to *gently* write on the filter paper.
8. You should see a colour change on contact of the electrode with the paper.
9. What happens if you attach the battery up the other way round?

## Cleaning up

Wash everything at the sink. Any remaining salt solution can be washed down the sink with water. Throw the filter paper in the bin.

