

# Electrochemical Writing Equipment list

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## Equipment per person/pair/group

- Salt (NaCl)
- Water
- 9V battery or battery pack (3V or 6V)
- Wires and crocodile clips
- Filter paper
- Petri dish or other shallow dish or plate
- Pencil sharpened at both ends or carbon electrode (can be obtained from a pencil see *below*)
- Indicator e.g. universal indicator, phenolphthalein, methyl orange
- Spatula
- Pipettes
- Small beaker

## Instructions

*To make carbon electrode:*

- methylated spirit
- HB pencil (with no eraser at the end)
- Foil
- Matches
- Heat-proof mat
- Old shallow steel can or metal dish e.g. an old tuna can.
- Tweezers/tongs

**SAFETY/FIRE RISK:** This method may produce some smoke if the Al foil starts to burn, which may trigger a smoke alarm. Do not use too much methylated spirits, and make sure all flammable items and solvents are at a safe distance. You may wish to do this outside.

1. Wrap the pencil in foil.
2. Pour 5-10ml methylated spirit into the tin can or dish and place on the heat-proof mat
3. Balance the wrapped pencil on the edges of the can (see picture).
4. Light the methylated spirit with a match
5. Leave burning until the fuel runs out the flame dies out.
6. Leave to cool.
7. Open up the foil and remove graphite core from the carbonised wood.
8. Break the graphite into appropriate lengths to use as the carbon electrode



## Sourcing the equipment

- methylated spirit is available from hardware stores
- indicators available from Philip Harris

## Disposal

Filter paper can be thrown in the bin and everything can be washed with water at the sink.