

Electricity from chemicals

Topic

Electricity and chemistry.

Timing

45 min.

Description

Students record the electromotive force produced when various pairs of metals are placed in sodium chloride solution.

Apparatus and equipment (per group)

- 100 cm³ Beaker
- Galvanometer or voltmeter (0–3 V)
- Two wires
- Two crocodile clips.

Chemicals (per group)

- Sodium chloride solution
- Access to strips or rods of various metals:
 - Zinc (In powder form, **Flammable and Dangerous to aquatic life**)
 - Copper
 - Iron
 - Lead (**Reproductive toxin**)
 - Magnesium. (**Flammable, water reactive**)

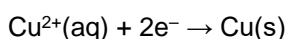
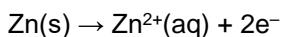
Teaching tips

Data logging sensors and software can be used in this experiment to provide a large screen display of the voltage changes. Connect a voltage sensor across the electrodes and get the software to show the reading using a meter or graph.

Background theory

Metals high in the reactivity series have a tendency to release electrons to form ions.

Metals low in the series do not readily form ions, and their ions easily form metal atoms. With zinc and copper:



Safety

Wash hands after handling lead.



Answers

1. Magnesium, zinc, iron, lead, copper.

Credits

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Health & safety checked January 2018

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