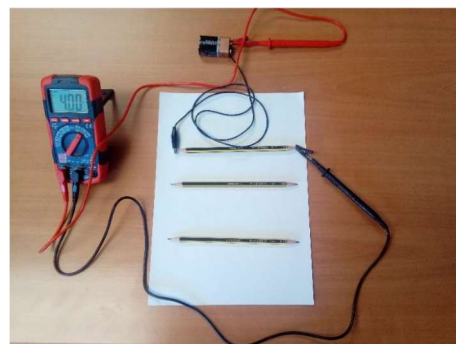

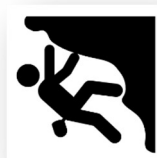





Summary

Electrochemistry lab experiences with critical raw materials



	Target age	
	Age 15 and over	
	Level of difficulty	
	<input checked="" type="checkbox"/> Easy <input type="checkbox"/> Medium <input type="checkbox"/> High	
	Key words:	
	Conductivity, Galvanic Cell, Graphite, Hydrogen, Water electrolysis.	
	Abstract of the activity	
	<p>Electrochemistry allows to describe processes such as the construction and operation of batteries, the spontaneity of oxide-reduction reactions, electrodeposition or electroplating and corrosion of metals.</p>	
	<p>With this toolkit students will check the high conductivity capacity of graphite, being capable of producing water electrolysis and, in addition, examine the relationship between lead graphite composition and its electrical resistance applying Ohm's law. They will also learn different ways of generating energy and stimulate their creative thinking by emulating a battery.</p>	
	Learning Goals	
	<ul style="list-style-type: none"> • Understand water electrolysis and galvanic cell principles. • Know different ways of generating energy. • Apply Ohm's Law. • Predict the electrical properties of some materials such as graphite. 	

Summary

Specific Abilities



- Produce hydrogen, a green energy vector, from water.
- Making a battery and an electrical circuit.
- Use multimeter to measure current, resistance and voltage.

Cross-curricula Links



- Chemistry: electrochemistry, redox reaction, structure of matter.
- Technology: electrical network.

Prerequisites



- Basic electrochemistry knowledge
- Basic electricity concepts

Time requirement



- 1 h 40 min

Instruments: Multi-meter, silicone gun, battery (4.5 V), 1 LED, electrical components.

Learning and Teaching Support Materials - What you can find in the toolkit



1. Lab Procedure/s
2. Students' Cards
3. Exercises

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