

# ***ELECTRO-LIGHTS*** (1 Hour)

*In this activity, students build simple circuits to investigate the conductivity of solutions. They build and test a simple circuit using a bulb, battery, and wire. Next, they interrupt the circuit by running the wires through containers of liquids to explore which solutions will conduct enough electricity to light the bulb.*

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## **Topic: Conductivity**

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### **Real World Science Topics**

- An exploration of the electrical conductivity of materials and solutions
  - An exploration of simple electrical circuits using bulbs and batteries
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### **Objective**

Students will gain an understanding of electrical circuits and the conductivity of solutions

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### **Materials Needed For Each Pair of Students**

6 or 9 V battery

three pieces of copper wire (30 cm long)

6V lightbulb

bulb receptacle (see equipment setup below)

seven small plastic containers (or cups)

one tablespoon table salt (NaCl)

one tablespoon Epsom salt ( $\text{MgSO}_4$ )

one tablespoon root killer ( $\text{CuSO}_4$ )

one tablespoon sidewalk de-icer ( $\text{CaCl}_2$ )

one tablespoon rubbing alcohol

one tablespoon sugar

one cup of tap water

several cups of distilled water

tablespoon

four alligator clips (optional)

paper towels





















