

Circuits and Symbols



A circuit is a complete path along which a current may flow.

A circuit consists of materials which are conductors (usually metals).
The electrons flow when there is a difference in voltage across the wire

An electric circuit has three parts:

1. An energy source - like a battery or mains power.
2. An energy receiver - like a lightbulb.
3. An energy pathway - like a wire. A wire helps to direct the electrons around the device.

More often than not, electric circuits also contain a switch, which can be used to turn them off and on.

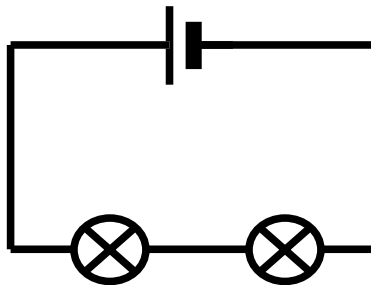


This steady hand game is based on a circuit. The buzzer sounds when the metal wand touches another piece of metal in the circuit. Until the wand touches the electrons can not flow.

Circuit Symbols

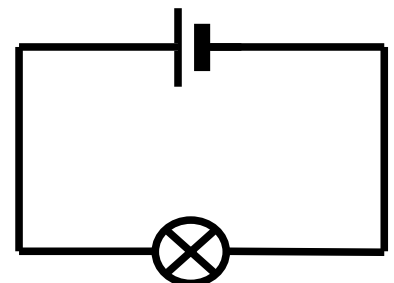
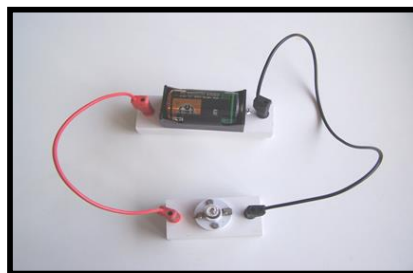
Cell	
Switch	
Voltmeter	
Ammeter	
Resistor	
Variable resistor	
Lamps	
LED	

We use symbols to save time and space.
It is easier to draw a symbol than to draw a lightbulb!



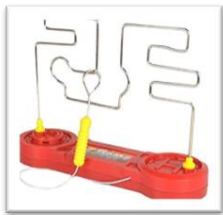
This circuit is made from a cell, some wires and two bulbs.

When we draw circuit diagrams they are rectangles or squares.



You can draw a circuit diagram from a photograph of a circuit. We know that this circuit is made from a cell, two wires and a bulb.

Circuits and Symbols



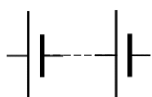
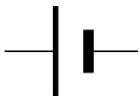
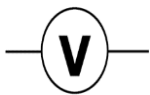
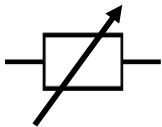
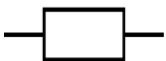
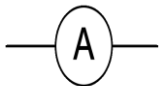
How does this steady hand game work?

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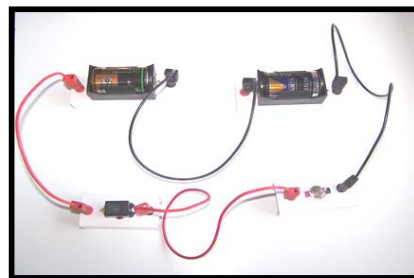
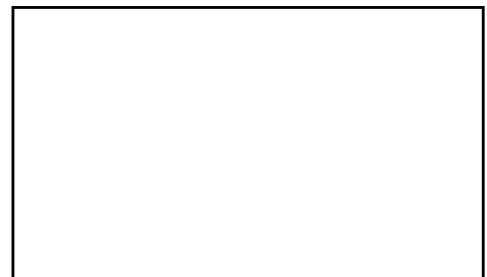
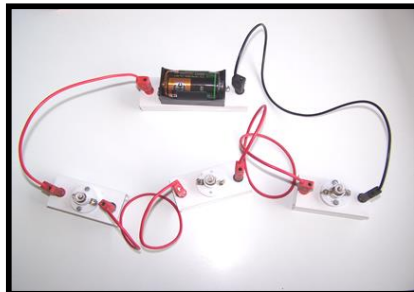
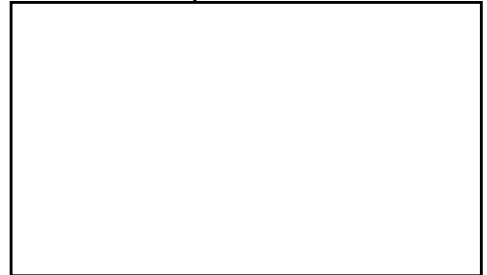
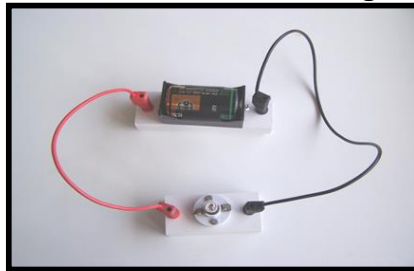
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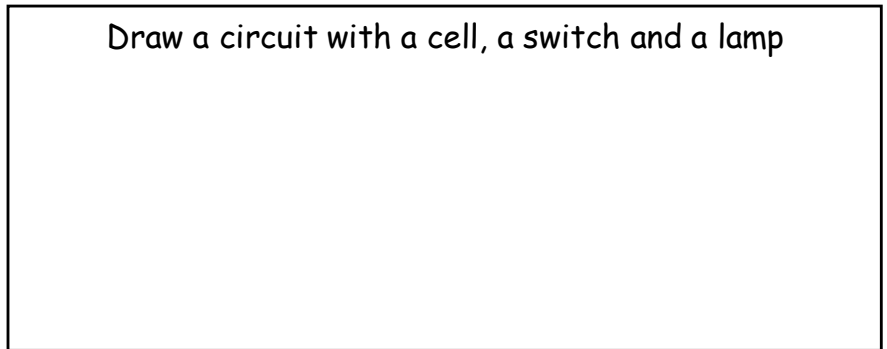
What do these circuit symbols mean?



Draw the circuit diagrams for these pictures



Draw a circuit with a cell, a switch and a lamp



Draw a circuit with a two cells, a switch and a lamp and a variable resistor.

