

Lesson Sequence



1. Describe the parts of an electrical circuit



2. Explore voltage and its effect on an electrical circuit



3. Apply knowledge to identify and correct problems in a circuit



4. Investigate what affects the output of a circuit

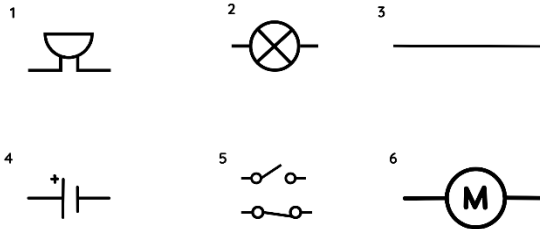


5. Build a set of traffic lights



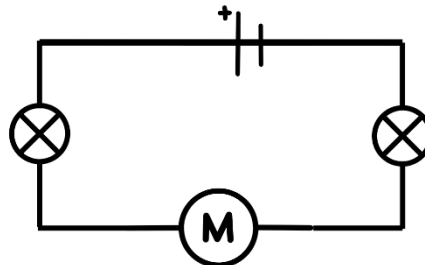
6. Apply knowledge of circuits to a real-life problem

Circuit Symbols



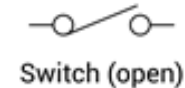
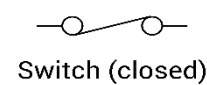
1. buzzer 2. bulb 3. wire
4. cell 5. switch 6. motor

Wires are always drawn with a straight line and using a ruler in scientific diagrams.
Wires are drawn at right angles like this:



Key Facts

- In a simple series circuit, the current flows from negative to positive. There are no gaps – a complete circuit allows the components to work.
- Gaps in the wires or faulty components cause the circuit to be incomplete and the current cannot flow in a complete loop.
 - Switches can be open or closed and this determines whether the electricity can flow in a complete loop.



Voltage

- Adding more cells (or batteries) to a circuit will make bulbs brighter, buzzers louder and motors faster!
- A cell is a single unit of energy; a battery is two or more cells stacked together.
- Voltage is the force that pushes the electricity around the circuit; current is the rate at which the electricity travels around the circuit.
- The more components in a circuit, the more they share the energy from the cell.
- Adding more components to a circuit can mean their outputs decrease.



Rocket Words

component	the individual parts that make up a whole circuit e.g. bulb, buzzer, cell
circuit diagram	scientific drawing of an electrical circuit
voltage	force which pushes the electric current round the circuit; measured in volts and given the symbol V
current	the rate of electricity flowing through a circuit
filament	a thin wire in a light bulb that heats up and produces light when electric current passes through it
output	the amount of something produced (e.g. brightness of a bulb)
insulative	describes something that prevents or resists the flow of electricity or heat
conductive	the ability of a material to allow the flow of electric current