

Electrical components

Outstanding Science Year 6 - Electricity - OS6E007

National Curriculum Statutory Requirements

6E3 - use recognised symbols when representing a simple circuit in a diagram

Learning Objective



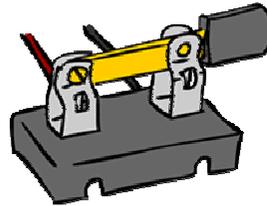
I can describe the function of electrical components and match them to their symbols.

Me:   

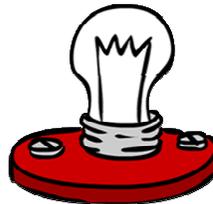
Teacher:   

Electrical components are the different parts which make up electrical circuits. Electrical components are made up of different parts and have different functions. Some common electrical components include **switches**, **bulbs**, **buzzers**, **motors**, **cells** and **wires**.

Switches allow a circuit to be opened or closed. They work by bridging a gap in the circuit. When the switch is open, electricity cannot flow around the circuit and the components cannot function. When the switch is closed, the circuit is completed and electricity can flow around it. We use switches to turn devices on and off.



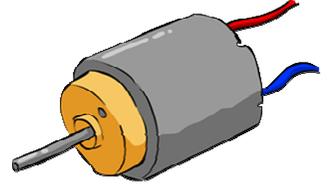
Bulbs contain very thin pieces of wire, called filaments. When electricity passes through the filament, energy is released in the form of light (and heat). The filament is covered by a transparent glass bulb, which allows the light to pass through it.



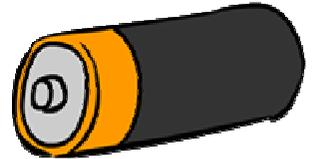
Buzzers create a sound when electricity passes through them. The sound can be different depending on the type of buzzer.



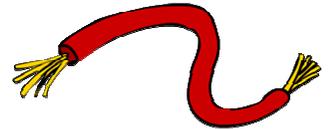
Motors convert electrical power into mechanical power (movement). They work by using electromagnets (magnets which are powered by electricity) to move a magnetic rotor around an axis.



Cells convert electrical energy into mechanical energy. They contain two chemical substances that react with each other, a flow of tiny particles called electrons. Electrons flow out of the negative terminal of the battery and around the electrical circuit, allowing the other components to function.



Wires consist of two parts - a metal core and an outer coating. The inner core is made of metal wire, which conducts electricity, while the coating is made from an insulating material such as plastic.



Activity

Cut out the circuit symbols, diagrams and descriptions on the following page and paste them in their correct positions in the table. For an added challenge, write your own descriptions.

This electrical component converts electrical energy into kinetic energy (movement). It contains electromagnets that cause the rotor (moving part) to spin when an electrical current is supplied.

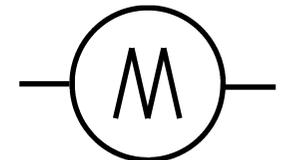
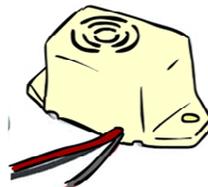
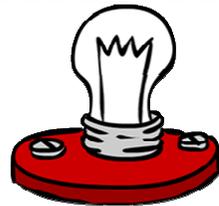
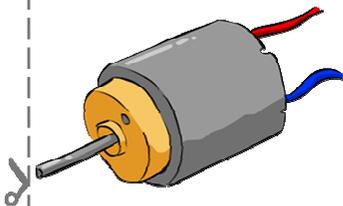
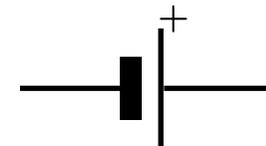
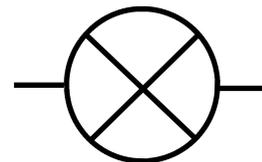
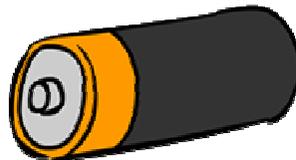
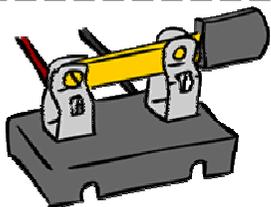
This electrical component converts electrical energy into light, though much is lost as heat energy. It contains an extremely thin wire called a filament. The thin wire presents a great deal of resistance, converting the electrical energy to heat and light.

This electrical component converts electrical energy into sound. Some types of this component can create music, depending on the voltage and current which passes through it.

This electrical component consists of a break in the circuit which can be easily opened or closed. When the break is closed, electrical current flows around the circuit and allows other components to function. When opened, the circuit is broken and the components stop functioning.

This electrical component is used to connect other components together into a complete circuit. It consists of a metal core, which conducts electricity, and a plastic coating which acts as an electrical insulator and prevents the electricity from passing into places where it is unwanted.

This electrical component converts chemical energy into electrical energy. It contains two different chemicals which react with each other, producing some heat, new chemicals and a flow of electrons. The flow of electrons can be put to use to power an electrical circuit.



Switch

Bulb

Buzzer

Motor

Cell

Wire
