Knowledge Organiser | Subject: Science | Topic: Electricity | Year 4

Key Knowledge & Vocabulary

Electricity can be generated in different ways. In power stations, turbines generate large amounts of electricity. In batteries, chemical reactions generate smaller amounts of electricity.

Circuits can be made using batteries, wires and electrical components, including bulbs, buzzers and motors. They change electrical energy in light energy (bulbs), sound energy (buzzers) or kinetic energy (motor).

Some materials conduct electricity through them – metals are generally good conductors of electricity. Insulators do not let electricity through them – these materials include plastic, wood, glass and rubber.

Working Scientifically

Fair testing

Observing over time

Researching

Classifying, identifying and comparing

Exploring

Seeking patterns

Which did you use in science lessons and why?

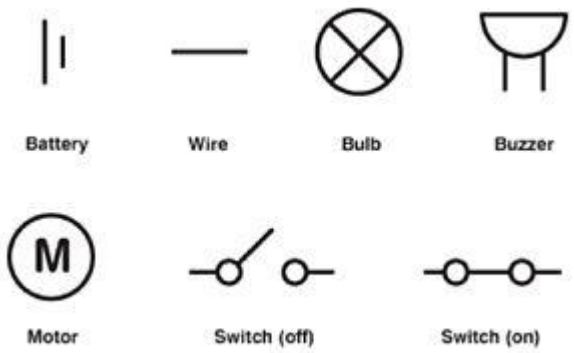
Key Concepts

Materials	Electricity	Power source	Circuit	Electrical component	Switch	Conductors and Insulators	Robots
Objects are made of materials, sometimes only one, sometimes more than one. **Materials** can have different **properties.**	Everything is made up of tiny particles, which may have positive or negative charges. Electricity is the presence or flow of these particles.	A **circuit** always needs a **power source,** such as a **battery,** with wires connected to both the positive (+) and negative (-) ends.	**Electricity** can flow through the **components** in a complete electrical We use electric **currents** to control and operate **devices,** including phones, computers and light bulbs.	A **circuit** can also contain other **electrical components** e.g. **bulbs, buzzers** or **motors.** These allow electricity to pass through.	A **switch** in a **circuit** to create a gap in a circuit. This can be used to switch it on and off.	**Conductors** let **electricity** pass through them easily. **Insulators** do not allow **electricity** to pass through them.	Robots are **machines.** There are lots of types of robots. They **move** in different ways and do all kinds of jobs.

Linking Thinking Across Our Learning Journey

Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Cause and effect	Cause and effect	Everyday materials	Everyday materials	Magnets	Electricity	Space	Forces

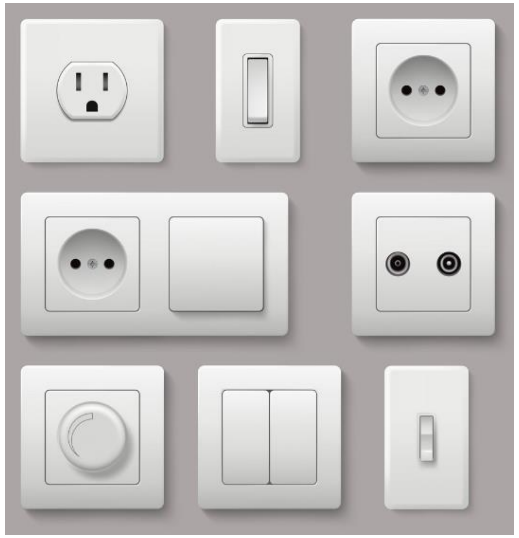
Electrical symbols



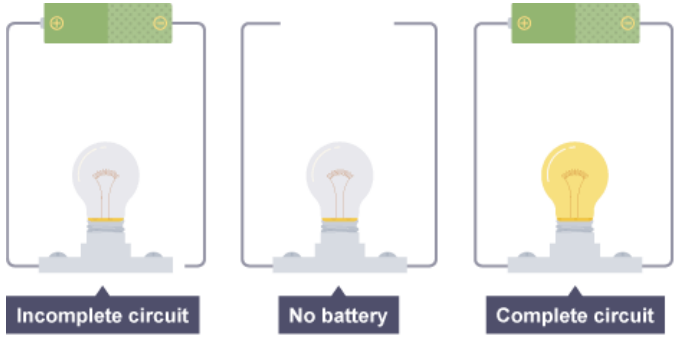
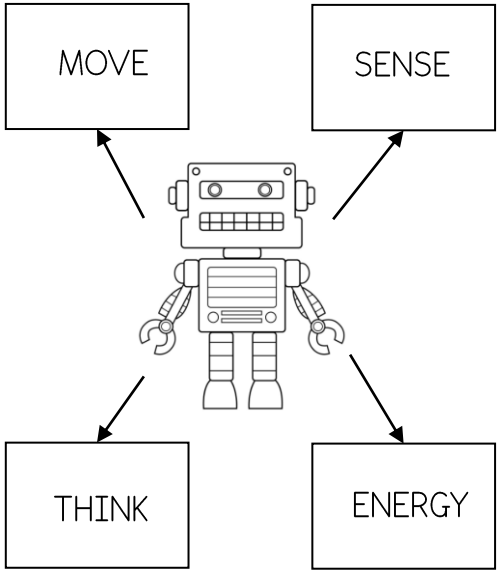
Batteries

Insulators and Conductors

Electrical sources and switches



Circuits



Features of a robot