

# Science - Year 4 - Physics

## Electricity



### Key Vocabulary



electricity

generate

renewable

non-renewable

appliances

battery

circuit

electrons

conductor

insulator

### Science GOLDEN WORDS:

prediction

measurements

conclusion

explain

classify

### Key Facts



- Lightning and static electricity are examples of electricity occurring naturally but for us to use electricity to power appliances, we need to make it.
- Many everyday appliances rely on electricity for them to work. Some appliances need to be plugged into a socket (mains electricity) and others have a battery to make them work.
- Electricity can only flow around a complete circuit that has no gaps. There must be wires connected to both the positive and negative end of the power supply/battery.

### Conductors and Insulators

A conductor of electricity is a material that is made up of free electrons which can be made to move in one direction, creating an electric current. Metals are good conductors.

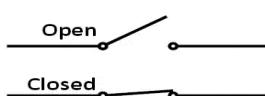


Electrical insulators have no free electrons and so no electric current can be made. Wood, plastic and glass are good insulators.

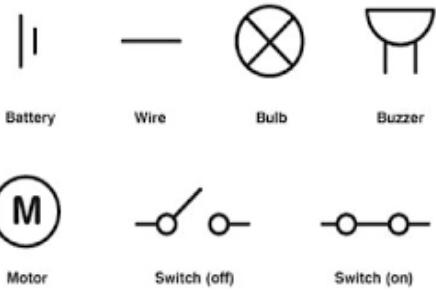


### Switches

Switches can be used to open or close the circuit. When off, a switch 'breaks' the circuit to stop the flow of electrons. When the switch is on, the circuit is complete and the electrons are able to flow around the circuit.



### Circuit Symbols



### Our 'Electricity' knowledge journey:

*\*This is the first time children will meet this topic.*

### Working Scientifically:

- asking relevant questions and using different types of scientific enquiries to answer them
- setting up simple practical enquiries, comparative and fair tests
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- using straightforward scientific evidence to answer questions or to support their findings.