

In this unit: Pupils will construct simple series circuits and then investigate what happens when you change the number of components in the circuit. They will apply their learning to create a wartime communication system based on Morse code (light signals.)

Children should already know:

- that common electrical appliances run on electricity.
- the names of basic parts of a circuit.
- that a circuit needs to be complete in order for it to work.
- that a switch opens and closes a circuit
- that some materials are conductors and some are insulators and name some of these.
- that metal is a good conductor and rubber is a good insulator.

At the end of this unit, children will know:

- the symbols used to represent parts of a circuit on a conventional circuit diagram and use them appropriately.
- that the brightness of a lamp or the volume of a buzzer can be changed and how.
- how to construct simple series circuits.
- how to stay safe when working with electricity.

Pupils could investigate:

- what happens when you add multiple bulbs/cells to a circuit.

International Morse Code



Key Vocabulary

| | |
|--------------|-------------------------------------------------------------------------------------------------------------------------------|
| ammeter | an instrument for measuring electrical current |
| amp / ampere | a unit of electrical current |
| battery | a container consisting of one or more cells where chemical energy is converted into electricity and used as a source of power |
| current | a flow of electricity which results from ordered directional movement of electrically charged particles |
| filament | a conductive wire or thread with a high melting point that forms part of an electric bulb |
| generator | a machine that converts energy into electricity |
| resistor | an electrical component that limits or regulates the flow of electrical current |
| symbols | a shape or sign used to represent something |
| variation | a change or slight difference in amount |
| voltage | an electrical force that makes electricity move through wire, measured in volts |

Key Questions:

- what does this symbol represent?
- why is this circuit not working?
- why did it get brighter/duller?
- why is the lamp no longer working after we added extra cells?
- how can we change the brightness of the bulb?

