

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 draw circuit diagrams for light beacons on the coast to inform or invasions from the Spanish Armada.

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.



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?

