

Key idea: Electricity

Possible applications and activities related to new NC

Yr 6

Batteries are a store of energy. This energy pushes electricity round the circuit. When the battery's energy is gone it stops pushing. Voltage measures the 'push'

The greater the current flowing through a device the harder it works

Current is how much electricity is flowing round a circuit

When current flows through wires heat is released. The greater the current the more heat is released

- Children should apply their understanding of current and resistance when exploring heating effects, short circuits, fuses and how to control devices including bulbs
- Children should be challenged to apply their knowledge of circuits to make solve more complex electrical problems (only series circuits). For example designing and making burglar alarms, model houses and traffic lights.
- Children should start to use circuit diagrams in communicating their ideas and experiments.

Yr 4

More batteries will push the electricity round the circuit faster

Electricity sources **push** electricity round a circuit

A source of electricity (mains or battery) is needed for electrical devices to work

Devices work harder when more electricity goes through them

Some materials allow electricity to flow easily and these are called conductors. Materials that don't allow electricity to flow easily are called insulators

A complete circuit is needed for electricity to flow and devices to work

- Children should explore the effects of changing the number of devices and batteries to a circuit.
- The conductivity of different materials could be explored for example through making switches, electrical games, and emergency circuits from scrap materials.
- Children should construct and compare simple series circuits containing different components such as bulbs, buzzers, motors, switches and different combinations of switches.
- At this stage it is better to represent circuits pictorially rather than using conventional circuit symbols.

Electricity powers many common appliances

Ideas associated with 'push'

Ideas associated with resistance and 'push'

Ideas associated with resistance

Yr 2