

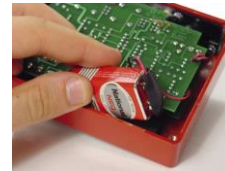
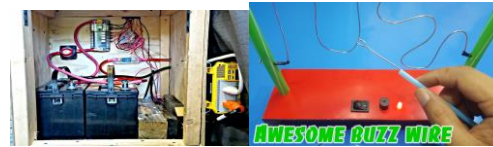
Prior Learning

In the past the children have learned simple mechanisms including levers, sliders, wheels and axles. When learning about structures they have learned some basic skills in creating sturdy structures that are free standing and shell structures. Within Year 4 the children learn in Science 'electricity' and depending on the time this unit is taught may have a good understanding of how to create a circuit, different electrical components and how to change these.

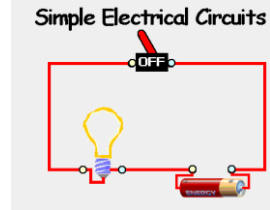
The children can:

- Explore simple products by disassembling them and embarking on research as to what products are currently on the market and they have understood the need to speak to the target audience to understand what the consumer needs.
- Create mood boards and simple diagrams such as an exploding diagram.
- Use paper, card, scissors, tape, construction kits, use tabs to help attach parts.

Electr

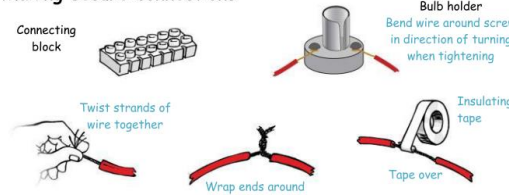


Electrical System



An electric power system is a network of electrical components deployed to supply, transfer, and use electric power.

Making secure connections



Handmade switches



Key Vocabulary

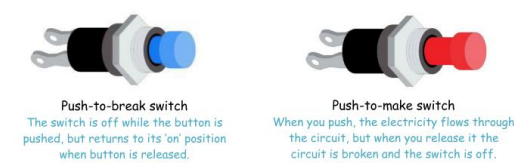
- Circuit** – path through which electricity passes.
- Conductor** – a material which allows an electric current to pass through it.
- Insulator** – a material which does not easily allow electric current to pass through it.
- Prototype** – a model made to test whether a design will work.
- Push-to-break switch** – a switch turned off by pressing it.
- Push-to-make switch** – a switch turned on by pressing it.
- Toggle switch** – a switch operated when a lever is pressed.
- Output devices** - components that produce an outcome e.g. bulbs and buzzers.
- Input devices** - components that are used to control an electrical circuit e.g. switches.

Intended Outcomes

- To identify what uses an electrical system.
- To explain how an electrical system works and how it provides power to make the components work.
- To create handmade switches and explain how and why they work.
- To create electrical circuits to provide power to a product prototype.
- To design a product inline with the brief.
- To evaluate the effectiveness of the product by referring to the specification.

Switches

Commercial switches



Wires



Explore wires, insulation and teach the children different ways to strip the wires, reconnect them and insulate them.



To understand how these systems work you will need to look inside electrical games and disassemble them, before putting them back together again.

Useful Website and Hints

<https://www.youtube.com/watch?v=m6Dk6YY8pN8>

