

Knowledge Organiser Design & Technology Year 6 Autumn

Electrical Systems - Steady Hand Games



St Elizabeth's Catholic Primary School
"Love one another as I have loved you"

Backboard	A background designed for the steady hand game.
Battery	A cell or connected group of cells which store electrical energy.
Bulb	A component which gives light when electricity passes through it.
Buzzer	A component which makes a loud noise as electricity passes through.
Circuit	A collection of components which make an electrical system.
Conductor	A material that allows electricity to flow through it. e.g. metal.
Copper	A metal material that is one of the best conductors of heat and electricity. It is often used to make wires and pipes.
Function	How an object or product operates or works.
Insulator	A material that does not allow electricity to flow through it. e.g. plastic.
LED	A light emitting diode which lights up as electricity passes through.
Magnetic field	The area around a magnet where there is magnetic force.
Net	A 2D flat shape, that can become a 3D shape once assembled.
Pliers	A metal tool used for holding, twisting or cutting wire.
Prototype	A simple model that lets you test out your idea, how it will look and work.
Series circuit	A closed circuit where the current only follows one path.
Side view drawing	An engineering diagram which shows the dimensions (width, depth, length) of the side (left or right) of a product.
Switch	A component which opens and closes to turn the circuit on or off.
Side view drawing	An engineering diagram which shows the dimensions (width, depth, length) of the side (left or right) of a product.
Test	To find out whether something works as it should.
Top view drawing	An engineering diagram which shows the dimensions (width, depth, length) of the top of a product.

Prior knowledge

Year 3: Creating a game using static electricity. Understanding that electrostatic electricity can move isolated objects and objects in a circuit.

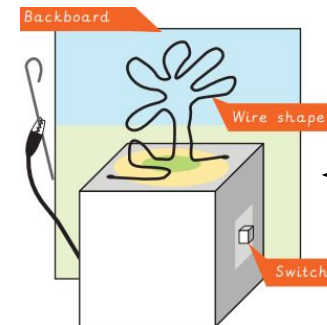
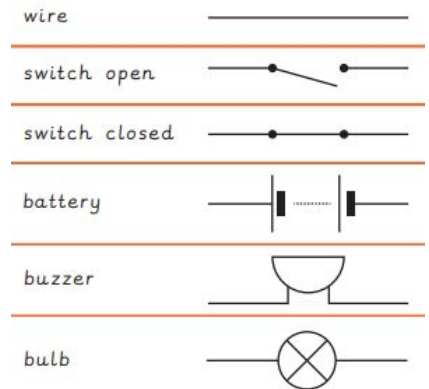
Year 4: Using electrical components such as switches and bulbs to create a torch. Appropriately cutting and attaching parts of a circuit to ensure a complete circuit.

Year 5: Creating a series circuit using a range of electrical components such as a buzzer and LED. Designing a simple circuit and marking the positive and negative parts of an LED and a battery. Independently mapping out a circuit and its components as well as creating the final product to reflect the plan.

Design → **Make** → **Evaluate**

Knowledge and skills covered in this topic

Circuit Symbols



Design components

- Children will draw a design from three different perspectives.
- Children will model ideas through a prototype.
- Children will make an electromagnetic motor and adjust it to improve its function.
- Children will create and test a circuit.
- Children will incorporate a circuit into a base.
- Children will understand that batteries contain acid, which can be dangerous.
- Children will understand that when electricity enters a magnetic field it creates a motor.