

Queen's Drive Year Four Knowledge Organiser - Spring One Science (Electricity)



A conductor is a material that allows charges to flow easily throughout the material. Metals are often good conductors. Examples include: silver, gold, copper, steel and salt water.

An insulator is a material that does not allow charges to flow easily throughout the material. Examples include: rubber, glass, oil, diamond and dry wood.

SCIENCE




Our science topic this term is **Electricity**.

Key Learning:

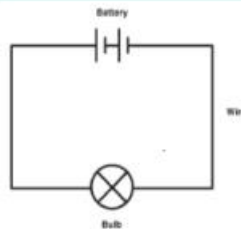
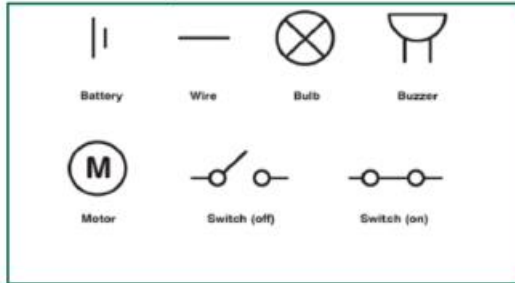
- Identify common appliances that run on electricity
- Construct a simple series electrical circuit, identifying and naming its basic parts
- Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.
- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.
- Recognise some common conductors and insulators.

This is Thomas Edison. Why is what he discovered so important?

Music: Improvise and compose music for a specific purpose, recreating sounds pertaining to the topic of electricity. Listen to a range of music and songs linked to theme of energy and light.

Main components of an electrical circuit



Simple series circuit

In order for electricity to flow, a circuit needs three things:

1. A source of electricity
2. No gaps in the circuit.
3. Conductors

By changing the components in a circuit we can vary:

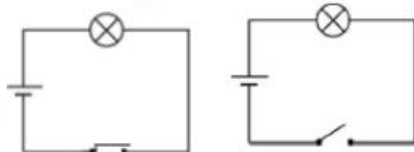


The brightness of a bulb (brighter / dimmer)



The volume of a buzzer (louder / quieter)

I can explain how a switch works I can draw a simple circuit diagram using symbols and explain if it will work or not



The light bulb will light in this circuit because the switch is closed.

The light bulb will not light in this circuit because the switch is open.

DESIGN TECHNOLOGY







As part of our topic this term, pupils will use simple electrical circuits to produce their own design product.

Key Learning:

- Develop more than one design or adaptation of an initial design.
- Plan a sequence of actions to make a product.
- Use prototypes to develop and share ideas.
- Incorporate a circuit into a model.
- Use electrical systems such as switches bulbs and buzzers.



Vocabulary: I can name and can use electrical circuit symbols

Lamp	A lamp will light up when the circuit is connected correctly.	
Wire	A long thin piece of metal that carries an electrical current often covered in plastic for safety.	
Cell	A battery is an example of a cell. It provides electricity	
Battery	A small device that provides power for electrical items.	
Motor	A device that changes electrical energy into	
Buzzer	An electrical device that makes a buzzing sound.	
Switch	A switch allows an electrical device to be turned on and off	
Current	A flow of electricity through a wire.	
Circuit	A circuit is a complete path around which electricity can flow. It must include a source of electricity, such as a battery.	