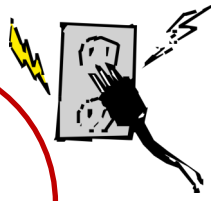
Year 6

Science

All children – regardless of gender, starting point or background – will have the opportunity to engage with a high-quality science education. They will be equipped with the knowledge, skills and vocabulary to understand how science can be used to explain what is occurring, predict how things will behave and analyse caused. We intend to inspire a sense of enjoyment and curiosity about science.

Electricity

Autumn 2



Prior Knowledge

- Electricity is useful because it provides power for many devices and appliances e.g. lights, televisions, ovens, computers. Some plug in to the mains and others run on batteries.
- Electricity can be stored in a cell. Two cells together are called a battery.
- During the global pandemic electrical appliances such as laptops and Chromebooks meant that children could learn remotely online.
- An electrical circuit consists of a cell or battery connected to a component using wires.
- A complete circuit is needed for electricity to flow and devices to work. If there is a break in the circuit, a loose connection or a short circuit, the component will not work
- A switch can be added to the circuit to turn the component on and off by creating a break in the circuit to stop the electricity from flowing.
- Electrical conductors are materials that allow electricity to flow easily.
- Metals are good conductors so they can be used as wires in a circuit.
- An electrical insulator is a material that doesn't allow electricity to flow through it.
- Non-metallic solids are insulators except for graphite (pencil lead).
- Insulators are important because they can protect us from electricity.
- Water, if not completely pure, also conducts electricity.

Key Vocabulary:

- Symbol
- Volts
- Voltage

New Knowledge:

- Use recognised symbols when representing a simple circuit in a diagram.
- Recognised circuit symbols are used to draw simple circuit diagrams.
- Wires in a circuit diagram should be drawn with straight lines.
- Symbols are easier to understand than pictures and because they are recognised symbols, they are a language that anyone who knows them can understand.
- Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.
- Adding more cells to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound.
- If you use a battery with a higher voltage, the same thing happens.
- Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.
- Adding more bulbs to a circuit will make each bulb less bright.