Preston Primary School Knowledge Organiser

Communication | Critical-Thinking | Collaboration | Creativity

Topic: Science	Term: Autumn 2	Year: Year 5/6	Duration: 7 weeks

The Powerful Knowledge we will take away from this Learning Enquiry (what will be learning):

- **Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.**
- **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.**
- **Use recognised symbols when representing a simple circuit in a diagram.**
- **To be able to plan a fair-test by recognising the control variables.**
- **To be able to use predictions to set up fair tests.**

What I already know:

In Unit 3, we learned about electricity and looked at creating simple circuits and looking at appliances that use electricity.

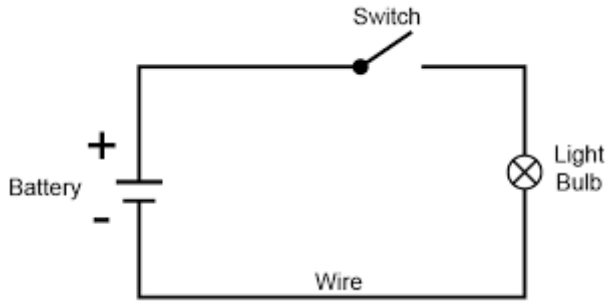
Our Key Vocabulary:

Word	Meaning
Voltage	The electric force that causes electrons to flow. It is the measure of potential difference between two points in the circuit.
Series Circuits	One or more conducting paths between the two electrodes of a cell or battery of cells.
Battery	A battery can act as a source of electricity in circuits. It stores up electric power and then provides a voltage across a circuit causing power to flow through the circuit.
Insulator	Insulators are the opposite of conductors. An insulator is a material that doesn't carry electricity.
Conductor	Conductors are materials that allow electricity to flow easily.
Fair test	Controlling some of the things used or done in a test so they do not change. An experiment in which only one variable is changed at a time to allow a fair comparison.
Variable	A variable is a factor that can be changed in an experiment

Experiment that we will carry out:

We will be completing a fair experiment where we will look at if the number of batteries affects the brightness of the bulb.

We will build up to creating a scarecrow which includes an electrical circuit.



Electrical symbols:

	BULB (LAMP) A component which lights up when electricity passes through it in a circuit	
M	**MOTOR** A component which moves (spins) when electricity passes through it in a circuit	
	BUZZER A component which makes a sound when electricity passes through it in a circuit	
	WIRE Plastic-coated electrical wire which conducts electricity around a circuit	
	SWITCH Part of a circuit which can easily be opened or closed to control the flow of electric current	
	CELL - 1 battery A safe power source. A store of chemical potential energy that can power a circuit	
	CELL - 2 batteries Two cells used together to make a more powerful power source	

Conductors and insulators:

Conductors are materials that allow electricity to flow easily. Most types of metal are good conductors, which is why we use metal for electrical wire. Copper is a good conductor and isn't too expensive, so it's used a lot for the wiring in homes today.

Insulators are the opposite of conductors. An insulator is a material that doesn't carry electricity. Insulators are important because they can protect us from electricity. Materials like rubber, plastic, and paper are good insulators.

Complete/ incomplete circuits:

- For a circuit to be complete, all the components, including a battery, are connected by wires and the switch is closed.
- An incomplete circuit may have a break in the wires, a switch may be open, or the battery is the wrong way in the holder.
- The current does not flow at all in an incomplete circuit.