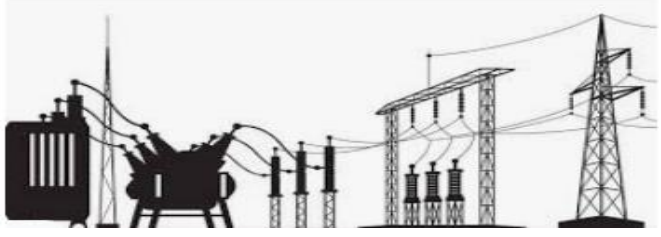
Science Knowledge Organiser
Year: 4 Term: 4 Topic: Electricity

Prior knowledge/key knowledge

Year 3 prior knowledge.	Year 3 pupils have learnt about magnets and forces.
What are natural sources of electricity?	Lightning and static electricity are examples of electricity occurring naturally but for us to use electricity to power appliances, we need to make it.
How do we get power to our homes?	Mains electricity: power stations send an electric charge through wires to transformers and pylons. Then, underground wires carry the electricity into our homes via wires in the walls and out through plug sockets.
Why do some electrical circuits work and some do not?	Electricity can only flow around a complete circuit that has no gaps. There must be wires connected to both the positive and negative end of the power supply/battery.
What is the purpose of a switch?	Switches can be used to open or close a circuit. When off, a switch 'breaks' the circuit to stop the flow of electricity. When on, a switch 'completes' the circuit and allows the electricity to flow.
What is a conductor of electricity?	A conductor of electricity is a material that will allow electricity to flow through it. Metals are good conductors. Materials that are electrical insulators do not allow electricity to flow through them. Wood, plastic and glass are good insulators



Vocabulary

appliances	A piece of equipment or a device designed to perform a particular job, such as a washing machine or mobile phone.
battery	A device that stores electrical energy as a chemical.
cell	A single unit device that converts electrical energy to chemical energy,
circuit	A pathway that electricity can flow around. It includes wires and a power supply and may include bulbs, switches or buzzers.
electricity	The flow of an electric current through a material, e.g. from a power source through wires to an appliance.
generate	To make or produce
non-renewable	This source of energy will eventually run out and so will no longer be able to be used to make electricity. These include fossil fuels – coal, oil and natural gas.
renewable	A source of electricity that will not run out. These include solar, geothermal, hydro and wind.

Key skills /investigative focus

Investigative focus	Observation and pattern seeking. Children to observe and make electrical circuits.
Key skill	Identify differences, similarities or changes related to simple scientific ideas and processes
Key skill	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.

Big Questions/Challenging Perceptions

Why is it useful for some objects to use batteries?

If there were a power cut, what objects would you miss the most? Justify your choices.

Explain why cautions are necessary for working safely with electricity.