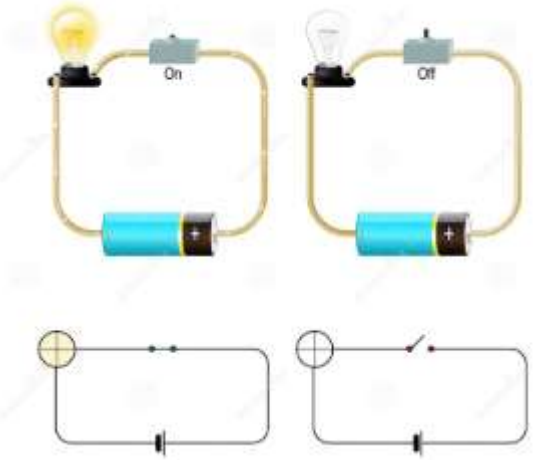
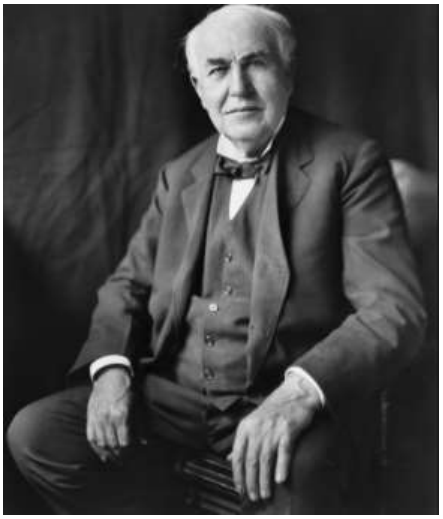
Learning Organiser for Year 4 - Electricity

National Curriculum Summary Key Subject Concept	Key Questions
• Identify common appliances that run on electricity • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • 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, and associate metals with being good conductors.	Where does electricity come from? Which appliances run on electricity? How does a circuit work? Which materials are electrical conductors and insulators?

Key Vocabulary	Definition	Key Facts
Appliances	A device or piece of equipment designed to perform a specific task	• Electricity can be generated using different sources. • A complete circuit is a loop that allows electrical current to flow through wires. • Objects that are made from materials that allow electricity to pass through a create a complete circuit are called electrical conductors. • A circuit contains a battery (cell), wires and an appliance that requires electricity to work. • The electrical current flows through the wires from the battery (cell) to the bulb, motor or buzzer). • A switch can break or reconnect a circuit. • A switch controls the flow of the electrical current around the circuit. • Objects that are made from materials that do not allow electricity to pass through and do not complete a circuit are called electrical insulators.
Circuit	A closed system of wires through which electricity can flow	
Cell	A device that produces electrical energy from chemical energy	
Conductor	A material that transfers heat or electricity	
Switch	A small device, usually pushed up or down with your finger, that controls and turns on or off an electric current	
Wire	A piece of thin metal thread wi th a layer of plastic around it, used or carrying electric current	
Insulator	A material or covering that electricity can't travel through	

Working Scientifically Skills	Diagrams/Charts/Pictures
Set up simple practical enquiries, comparative and fair tests. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Gather, record, classify and present data in a variety of ways to help in answering questions Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	
Possible Experiences	**Biographical Information**
• Investigate how the brightness of a bulb is affected by number of batteries/length of wire/thickness of wire/type of wire? • Which materials conduct electricity the best? • How can we stop Burglar Bill from coming into the classroom? • Find the best conductors and insulators. • How does the number of bulbs affect the brightness of a bulb? • Make a light-up Christmas card • Make a bulb light with the least possible equipment • Make a bulb light with a switch in the circuit • Draw simple circuits using agreed symbols • Investigate how to make a bulb flash and suggest a use for it • Write about the journey electricity makes as it goes around a circuit describing what it does in bulbs, wires and switches • Check pictures of circuits, indicating which will work, then use equipment to make and test each circuit	Thomas Edison (1847 – 1931)  American inventor and business man who invented many things including the long lasting light bulb.