

Year 4 Electricity

Working Scientifically	Sticky Knowledge	Linked Texts	Key Scientists
-- Recall and use specific scientific vocabulary accurately (year group key vocabulary) - Ask relevant questions and use different types of scientific enquiries to answer them, include making their own questions - Set up simple practical enquiries, comparative and fair tests, aiming to do so independently with their own decisions. - Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers - Gather, record, classify and present data in a variety of ways to help in answering questions - Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions - Identify differences, similarities or changes related to simple scientific ideas and processes - Use straightforward scientific evidence to answer questions or to support their findings.	A source of electricity (mains of battery) is needed for electrical devices to work. Electricity sources push electricity round a circuit. More batteries will push the electricity round the circuit faster. Devices work harder when more electricity goes through them. A complete circuit is needed for electricity to flow and devices to work. Some materials allow electricity to flow easily and these are called conductors. Materials that don't allow electricity to flow easily are called insulators. This is the first time Electricity is taught in school, only prior knowledge comes from other subjects.	Until I Met Dudley (Roger McGough) Oscar and the Bird: A Book about Electricity (Geoff Waring) Electrical Wizard: How Nikola Tesla Lit Up the World (Elizabeth Rusch)	Thomas Edison (First Working Lightbulb) Joseph Swan (Incandescent Light Bulb) Lewis Howard Latimer (Improved Edisons Lightbulb) William Kamkwamba (wind turbines)
Key Question(s):	Key Question(s):	WS vocabulary	
Can you name five common electrical appliances that run on mains electricity? Can you explain how a simple circuit is constructed? Can you describe the purpose of a switch in a circuit and how it works? What do you need in a circuit to ensure a lamp will light up? What happens in a circuit when a switch is open? Can you choose a material that is a good insulator and explain why it is good at conducting electricity? Why are some metals good conductors? Explain how you know.	What would life be like without electricity? What electricity do I use? In which ways can we 'get' electricity? (mains/plugs/batteries/wireless) How do we make electricity? How do batteries work? How quickly can batteries run out? Does this make a difference depending on number of components? How does the number of batteries added to the circuit affect a device?	Investigation, enquiry, prediction, variable, dependent variable, independent variable, constant, patterns, equipment, apparatus, method, results, conclusion, graph, patterns, distance, data, theory, fair test, reasoning	

Teaching suggestions in Enquiry types

<u>Comparative tests</u>	<u>Identify & Classify</u>	<u>Observation over time</u>	<u>Pattern Seeking</u>	<u>Research</u>	<u>BIG Question – Problem solving</u>
How does the thickness of a conducting material affect how bright the lamp is? Which metal is the best conductor of electricity? 	How would you group these electrical devices based on where the electricity comes from? 	How long does a battery light a torch for? 	Which room has the most electrical sockets in a house? 	How has electricity changed the way we live? How does a light bulb work? 	What can we do with electricity? (Also use EXPLORIFY) <u>Assessment Opportunity</u> 