

Year group:	Years 3 & 4	Term:	AUTUMN 2	Theme:	Simple circuits & switches		
Prior learning					Cross-curricular and visits/visitors		
- Children know that electricity from the mains or battery is used to power lights and mechanical equipment. - Children know that bulbs create light. Speakers -sound, cookers -heat and motors-movement					Science		
					New Vocabulary		
Knowledge					cell	A single electrical energy source	
- Know an electronic system is a connection of components to create a circuit for a purpose or product. - Know that electricity is a form of energy. - Know that input devices are used to get a circuit working e.g switches. - Know that output devices work if the circuit is in operation. - Know that electrical products are designed to serve a function for the selected user. - Know that Thomas Edison invented the lightbulb. - Know that a design brief is a description of the product we will design. It states how a product will function to meet the needs of its user.					product	An item manufactured for sale	
					Circuit	Flow of electricity around a complete loop	
					Component	Any part of an electric circuit including wires	
					Input device	Components used to get a device working e.g. switch	
					Output device	Components that work if the circuit is operation correctly e.g. bulb/buzzer	
					process	Changes an input to an output	
					user	Person who uses a product	
					sustainability	How environmentally friendly a product is	
					function	Purpose of a product	
					LED	Light Emitting Diode	
Skills (Disciplinary Knowledge)					Revised Vocabulary		
- Investigate key products in design and technology. - Investigate similar products to the one to be made to give starting points for a design. - Sketch existing products to analyse and understand how products work - Incorporate a circuit into a model. - Use electrical systems such as switches bulbs and buzzers. - Sketch plan of a simple circuit with a switch. - Develop more than one design or adaptation of an initial design and decide which to develop. - Select materials according to their functional properties. - Create a prototype of a product. - Select from a range of tools for cutting, shaping, joining and finishing a product.					wire	battery	buzzer
					bulb	electricity	device
					switch	wires	dial
					machine	purpose	similar
					different		

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| <ul style="list-style-type: none">• Where appropriate strengthen frames with diagonal struts.• Use knowledge of 3D shape construction to create effective cuboid, cube, pyramid and prism nets.• Use prototypes to develop and share ideas.• Consider and explain how the finished product could be improved.• Discuss how well the finished product meets the user's design criteria.• Identify the strengths and weaknesses of their design ideas in relation to purpose / user.• Consider aesthetic qualities of materials chosen. | |
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