

MTP – DT – Year 4

Topic	Digital world: Electrical systems: Torches
N.C Learning Objectives	Pupils should be taught: When designing and making, pupils should be taught to: Design - Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas. Make - Making a torch with a working electrical circuit and switch. - Using appropriate equipment to cut and attach materials. - Assembling a torch according to the design and success criteria. Evaluate - Evaluating electrical products. - Testing and evaluating the success of a final product. Technical knowledge - To understand that electrical conductors are materials which electricity can pass through. - To understand that electrical insulators are materials which electricity cannot pass through. - To know that a battery contains stored electricity that can be used to power products. - To know that an electrical circuit must be complete for electricity to flow. - To know that a switch can be used to complete and break an electrical circuit.
Ways of being Co-Op	Do what matters most Succeed together Be yourself, always Show you care
British Values	Democracy Rule of Law Individual Liberty

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	Mutual Respect Tolerance				
CRL	Product Designer (Electronics) Electrical Engineer Embedded Systems Engineer Industrial Designer Mechatronics Engineer				
Vocabulary	<u>Battery</u> Make a judgement about a product by identifying its strengths and weaknesses to inform improvements	<u>Conductor</u> The requirements that a product needs to be successful	<u>Electricity</u> A sequence of instructions that tells a computer or device what to do and when	<u>Torch</u> A first version of a product, made using cheaper materials, which can then be developed based on feedback.	<u>Insulator</u> A combination of techniques, such as logo, colour, packaging and advertising, that helps a product appeal to its target audience.
Recap and Recall	-				
	LEARNING OBJECTIVE	STICKY KNOWLEDGE FACT	CORE LEARNING		
Lesson 1	We are learning about electrical items and how they work.	Electricity allowed humans to design and make many new products that either help solve a problem or improve the quality of life.	- Children can identify electrical products. - Children know what electrical conductors and insulators are. - Children know that a battery contains stored electricity and can be used to power products.		
Lesson 2	We are learning to analyse and evaluate electrical products.	Analysing allows us to examine something closely and carefully by breaking it down into smaller parts to understand how it works or what it means.	- Children can identify the features of a torch. - Children understand how a torch works. - Children can say what is good and bad about different torches. - Children understand what is important in torch designs.		

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Lesson 3	We are learning to design a product to fit a set of specific user needs.	Evaluation is important in the design process as it can highlight any changes that need to be made at the next stage.	• Children can factor in who their product is for in their design criteria. • Children can design a torch which satisfies both the design and success criteria.
Lesson 4	We are learning to make and evaluate a torch	To make something work using electricity there needs to be an electrical circuit ; a circuit is a complete loop that electricity can move around.	• Children can make a working circuit with a switch. • Children can use appropriate equipment to cut and attach materials • Children can assemble a torch according to their design criteria • Children can assemble a torch which satisfies the success criteria • Children can test their torch to evaluate its success
Outcome	The children will choose a composition by using a viewfinder to draw as a final piece on a larger scale. They should apply knowledge of shapes, shading and texture.		