

Design Technology Progression of Skills: Electrical systems and the digital world



<u>DT Skill</u>	<u>EYFS</u>	<u>Year One</u>	<u>Year Two</u>	<u>Year Three</u>	<u>Year Four</u>	<u>Year Five</u>	<u>Year Six</u>
<u>Design</u>					• Carry out research based on a given topic (e.g. The Romans) to develop a range of initial ideas. • Generate a final design for the electric poster with consideration to the client's needs and design criteria. • Design an electric poster that fits the requirements of a given brief. • Plan the positioning of the bulb (circuit component) and its purpose.		• Identify factors that could be changed on existing products and explaining how these would alter the form and function of the product. • Develop design criteria based on findings from investigating existing products. • Develop design criteria that clarifies the target user.

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<u>Make</u>					• Create a final design for the electric poster. • Mount the poster onto corrugated card to improve its strength and allow it to withstand the weight of the circuit on the rear. • Measure and mark materials out using a template or ruler. • Fit an electrical component (bulb). • Learn ways to give the final product a higher quality finish (e.g. framing to conceal a roughly cut edge).		• Alter a product's form and function by tinkering with its configuration. • Make a functional series circuit, incorporating a motor. • Construct a product with consideration for the design criteria. • Break down the construction process into steps so that others can make the product.
<u>Evaluate</u>					• Learn to give and accept constructive criticism on own work and the work of others. • Test the success of initial ideas against the design criteria and justify opinions. • Revisit the requirements of the client to review developing design ideas and check that they fulfil their needs.		• Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses. • Determine which parts of a product affect its function and which parts affect its form. • Analyse whether changes in configuration positively or negatively affect an existing product.

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							• Peer evaluate a set of instructions to build a product.
<u>Knowledge</u>					• To understand that an electrical system is a group of parts (components) that work together to transport electricity around a circuit. • To understand common features of an electric product (switch, battery or plug, dials, buttons etc.). • To list examples of common electric products (kettle, remote control etc.). • To understand that an electric product uses an electrical system to work (function). • To know the name and appearance of a bulb, battery, battery holder and crocodile wire to build simple circuits.		• To know that series circuits only have one direction for the electricity to flow. • To know when there is a break in a series circuit, all components turn off. • To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin. • To know a motorised product is one which uses a motor to function. • To know that product analysis is critiquing the strengths and weaknesses of a product. • To know that 'configuration' means how the parts of a product are arranged.

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					• To understand the importance and purpose of information design. • To understand how material choices (such as mounting paper to corrugated card) can improve a product to serve its purpose (remain rigid without bending when the electrical circuit is attached).		
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