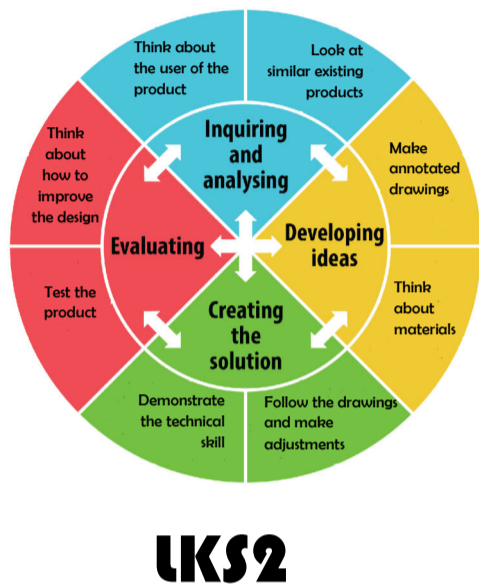
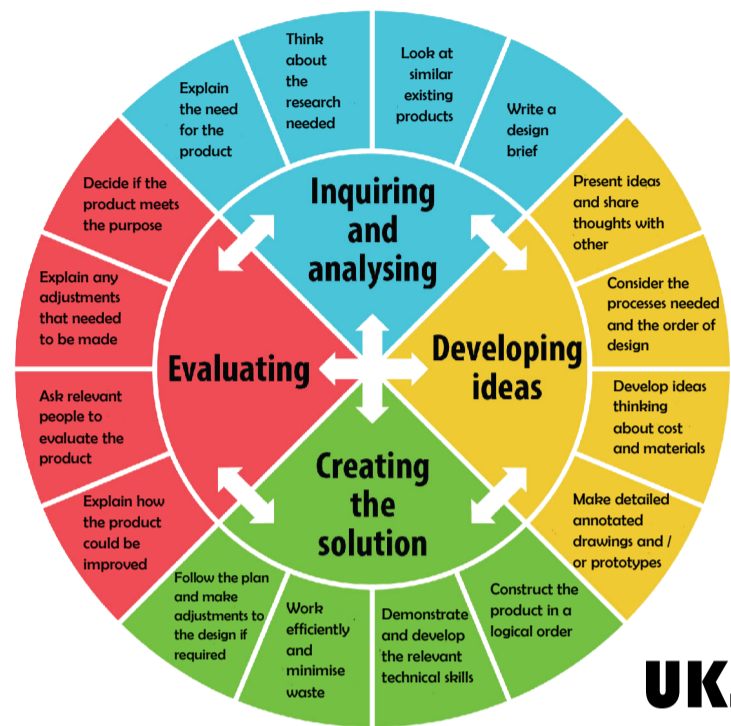


Electrical circuits: Years 4 and 6

Design and Technology field: Electronics			
Year groups the field is covered: 4 and 6			
Word colour key	Already covered in a previous year group in DT.	Cross-curricular links with science.	Cross-curricular links with maths.



UKS2



UKS2

<p>Prior knowledge</p> <p>Experienced basic cutting, joining and finishing techniques with paper and card</p> <p>Know how to construct simple series circuits and have a basic understanding of conductors, insulators and open and closed switches.</p>	<p>Designing</p> <p>Gather information about needs and wants, and develop ideas to inform the design of products that are fit for purpose, aimed at particular individuals or groups.</p> <p>Investigate and analyse a range of existing battery-powered products. Discuss what they intend to do.</p> <p>Use annotated sketches to develop and communicate ideas. Suggest ways to improve their design if it fails.</p>	<p>Making</p> <p>Order the main stages of making</p> <p>Select from and use tools and equipment to cut, shape, join and finish with some accuracy.</p> <p>Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities</p>	<p>Evaluating</p> <p>Evaluate their ideas and products against their own design ideas and identify the strengths and areas for improvement in their work.</p> <p>Understanding where their product succeeds and understanding its weaknesses.</p> <p>Evaluate their products using appropriate tests</p>	<p>Technical Knowledge, vocabulary and understanding</p> <p>circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, user, purpose, function, design criteria, innovative, appealing, design brief</p> <p>Acquired skills:</p> <p>Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.</p>
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<p>Prior knowledge</p> <p>Understanding of the essential characteristics of a series circuit and experience of creating a battery powered, functional, electrical product.</p> <p>Experience of cutting and joining techniques with a range of materials including card, plastic and wood.</p>	<p>Designing</p> <p>Use research to develop a design specification for a functional product that responds to changes in the environment.</p> <p>Take account of constraints including time, resources and cost.</p> <p>Develop and communicate ideas through discussion and annotated sketches, pictorial representations of electrical circuits or circuit diagrams.</p>	<p>Making</p> <p>Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.</p> <p>If appropriate, allocate tasks within a team.</p> <p>Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.</p> <p>Make modifications as they go along.</p>	<p>Evaluating</p> <p>Continually evaluate and modify the working features of the product to match the initial design specification.</p> <p>Test the system to demonstrate its effectiveness for the intended user and purpose.</p> <p>Consider the views of others to improve their work</p> <p>Record their evaluation using drawings with labels.</p>	<p>Technical Knowledge, vocabulary and understanding</p> <p>annotated drawings, electrical system, functionality, innovation, purpose, design specification, design brief, series circuit, parallel circuit, names of switches and components,</p> <p>function, innovative, design specification, design brief, user, purpose</p> <p>Acquired skills:</p> <p>Understand and use electrical systems in their products.</p>
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