



Subject- Design and Technology



Threshold Concepts and Milestones

Threshold Concept		Year 5	Content
<p>Master practical skills This concept involves developing the skills needed to make high quality products (we have highlighted a range of skills but they may be added to or changed</p>	<p>Electricals and electronics</p>	<ul style="list-style-type: none"> • Create series and parallel circuits. • Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips). 	<p>Use learning from science (Spring term). Children will do a challenge every half term based on circuits. Children will attach different parts of circuits to make a complete one. Children need to be familiar with what a parallel circuit is. Children will experiment with different circuits to find the most efficient. Children will test the effect the different components have on the circuit. Do they effect the energy passing to the bulb? What are the advantages of putting the different components on the circuit?</p>
<p>Design, make, evaluate and improve This concept involves developing the process of design thinking and seeing design as a process.</p>		<ul style="list-style-type: none"> • Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Make products through stages 	<p>Problem: Visitors struggle to remember the different areas of the school. How can we make this easier for them? Design brief: Make LED signs to advertise different areas of school. Using their knowledge of circuits and their own research. Children begin to draw and design their LED signs to go around school. Use art sketch pads to remind children of the drawing skills that they learn during the create topic.</p>

		<p>of prototypes, making continual refinements.</p> <ul style="list-style-type: none"> • Ensure products have a high quality finish, using art skills where appropriate. • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs. 	<p>At numerous stages of the process children will self and peer evaluate their work thinking back about what was the most efficient method to light up the light bulb and how they can make it visible for the visitors to see as they walk around the school.</p> <p>Once children are happy they can start making their products. When complete they will get feedback from other children in the class or children from another year group (a focus group) - what they like about the product and how it could be improved. Children take on this feedback and make improvements (this will be a continued process). For children who show greater depth level, give them further problems, e.g. what if the sign runs out of power? Can you create a back-up power source?</p>
<p>Take inspiration from design throughout history This concept involves appreciating the design process that has influenced the products we use in everyday life.</p>		<ul style="list-style-type: none"> • Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. • Create innovative designs that improve upon existing products. • Evaluate the design of products so as to suggest improvements to the user experience. 	<p>When children are in the research and evaluate stage, children will look at how L.E.D signs are made and take inspiration to use for their product. When explaining their product children need to be able to explain where they got each idea from and how it influenced them, for example, research designers who have re-used/up-cycled materials. Children will be able to locate different designers on a timeline, which will have already been made for our history and create terms.</p> <p>Children need to explain why they are making these choices and how they are benefiting their own product. Children trial different materials, recognising the benefits of re-using materials, such as cardboard boxes/plastic cartons.</p>