



Key Stage 3 Long Term Plan – Design and Technology

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	<p style="text-align: center;">Pull Along Toy Project</p> <p>Explore and use mechanisms when designing and making products. Timber based construction utilising safe use of tools, equipment and machinery.</p>		<p style="text-align: center;">Pull Along Toy Project</p> <p>Explore and use mechanisms when designing and making products. Timber based construction utilising safe use of tools, equipment and machinery.</p>		<p style="text-align: center;">Structures Project</p> <p>Explore structures. Design and build products utilising structural principles to strengthen and reinforce the design.</p>	
Year 2	<p style="text-align: center;">Wildlife product Project</p> <p>Design and build a wildlife product utilising modelling, prototyping and iterative design. Students explore how to join and combine a wider range of materials including recycling and upcycling. Recycling/Reusing (Sustainability)</p>		<p style="text-align: center;">Wildlife product Project</p> <p>Design and build a wildlife product utilising modelling, prototyping and iterative design. Students explore how to join and combine a wider range of materials including recycling and upcycling. Recycling/Reusing (Sustainability)</p>		<p style="text-align: center;">Cross Curricular Project: DT and Science</p> <p style="text-align: center;">Mission to Mars Project</p> <p>Design, build, and test different ideas to aid human space exploration of MARS, utilising coding and programming. Collaborative design, prototype construction and testing ideas and solutions. Coding and programming robotics. Recycling/Reusing (Sustainability)</p>	
Year 3	<p style="text-align: center;">Cross Curricular Project: DT, Food and Art</p> <p style="text-align: center;">In the style of Memphis: Clock Project</p> <p>Students design, prototype and build a clock in the style of famous design movements e.g. De Still Design and construct products combining different materials, components and processes.</p>		<p style="text-align: center;">CAD-CAM Ikea</p> <p>Investigate and research existing design styles and current trends in society. Design an interior space in response to the needs of specific client/design criteria. Designing and developing ideas utilising CAD-CAM technology.</p>		<p style="text-align: center;">Alternative and renewable energy Project.</p> <p>Investigate products that utilise alternate/renewable energy. Design, develop and construct a SOLAR/WIND powered creation.</p>	



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Essential Skills / Curriculum Links

Designing

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Making

- select from and use a wider range of tools and equipment to perform practical tasks, such as cutting, shaping, joining and finishing, accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluating

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- understand how key events and individuals in design and technology have helped shape the world

Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products, (for example as gears, pulleys, cams, levers and linkages)
- understand and use electrical systems and components in their products.
- apply their understanding of computing to programme, monitor and control their products.