

Design & Technology KS3 Curriculum 2022 – 2023

YEAR 7				
	Module 1	Module 2	Module 3	Module 4
	Design Communication	Mechanical systems	Fabrics & fibres.	Product analysis & evaluation.
	<ul> <li>Key Knowledge:</li> <li>Learning how to correct create a range of design ideas to communicate ideas.</li> <li>To develop knowledge and understanding of 3D CAD software.</li> <li>Understand the role CAD software plays in the design process.</li> <li>Understand the role prototyping paly in the iterative design process.</li> <li>Key Skills: <ul> <li>Select and use a range of tools and processs design designing by hand.</li> <li>Accurately measure and draw a range of products from real life in the CAD software.</li> <li>Know how to 3D print objects from CAD.</li> </ul> </li> </ul>	<ul> <li>Key Knowledge:</li> <li>What are the different types of mechanisms</li> <li>Know why mechanisms are important to the allow everyday items to function</li> <li>Understanding the uses of and the forces associated with different types of mechanisms</li> <li>Key Skills:</li> <li>Be able to recognise the different types of mechanisms</li> <li>Be able to explain the use of different mechanisms for different purposes</li> <li>Develop skills when manufacturing prototypes of the different mechanisms</li> </ul>	<ul> <li>Key knowledge::</li> <li>Understand the properties of natural and manmade fibres and how to identify them</li> <li>Know the processes involved when using a needle to sew.</li> <li>The importance of Eco design and reducing the negative impact</li> <li>What current textile designers work in the commercial world</li> <li>Importance of maintaining traditional skills as part of a culture/country's heritage</li> <li>Key Skills:</li> <li>Safe practice using textiles equipment and processes</li> <li>Test, evaluate and refine their ideas and products against a specification</li> <li>Generate creative ideas</li> </ul>	<ul> <li>Key Knowledge:</li> <li>Be able to understand what and how to analyse products</li> <li>What are the benefits to the design process by analysing products</li> <li>Analyse the work of past and present professionals</li> <li>Key Skills:</li> <li>How to view products to decide benefits and limitations</li> <li>evaluate the effectiveness of pre existing products</li> <li>How to describe functions of existing products</li> </ul>



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			<ul> <li>and avoid stereotypical responses</li> <li>How to operate a sewing machine</li> <li>Use of Paper Patterns and Nets to create successful outcomes.</li> </ul>	
YEAR 8				
	Module 5	Module 6	Module /	Module 8
	Polymers Key knowledge:	Healthy eating Key Knowledge:	Metals & alloys Key knowledge:	Systems & control Key Knowledge:
	<ul> <li>Be able to understand how polymer have impacted on the world around us.</li> <li>Know and describe different groups of polymers and their properties</li> <li>The importance of Eco design and reducing the negative impact</li> <li>What recycled polymers can be used for and why</li> <li>What are the different</li> </ul>	<ul> <li>Identifying healthy ingredients</li> <li>Underdtand what the Eat Well Guide is and why it is used to promote healthy diets</li> <li>Understand food packaging labelling to know what information is displayed</li> <li>Know what makes healthy and nutritious dishes</li> </ul>	<ul> <li>To understand different types of metals and alloys.</li> <li>To know different mechanical and physical properties are of the different metals and alloys</li> <li>To understand how to work with sheet materials and to minise waste when manufacturing products</li> </ul>	<ul> <li>Understand how to programme a series of different inputs and outputs</li> <li>Know how to use software to enable the programmes to function</li> <li>Demonstrate understanding of how programming benefits design of products</li> </ul>
	manufacturing processes used when working with polymers Key Skills: • Understanding of and how to use key pieces of	<ul> <li>Following existing recipes to create healthy dishes</li> <li>Be able to read and decipher food packaging labels</li> <li>Applying knowledge of safe working practice</li> </ul>	<ul> <li>Key Skills:</li> <li>Communicate design ideas using annotated sketches, detailed plans</li> <li>Be able to shape sheet metals to the desired</li> </ul>	<ul> <li>Key Skills:</li> <li>Be able to programme different components</li> <li>Be able to discuss the use of programming in design</li> </ul>



	<ul> <li>equipment when working with polymers</li> <li>How to reduce the use of polymers and their impact on the environment</li> <li>How to reshape polymers into new and useable products</li> </ul>	<ul> <li>Demonstrate food safety practices in the kitchen</li> </ul>	<ul> <li>outcomes following specific designs</li> <li>Adhere to the health and safety requirements when in a workshop</li> <li>apply finished to the metals to enhance the aesthic appear of the prototype</li> </ul>	<ul> <li>See the benefits in designing products with programming</li> <li>Investigate new and emerging technologies</li> </ul>
YEAR 9	Module 9	Module 10	Module 11	Module 12
	<ul> <li>Timber &amp; boards</li> <li>Key Knowledge: <ul> <li>Learning to correctly select suitable timber.</li> <li>To develop knowledge and understanding of timbers &amp; boards.</li> <li>Understand how properties affect the role a timber is suited to.</li> </ul> </li> <li>Key Skills:</li> </ul>	<ul> <li>Field to fork</li> <li>Key Knowledge <ul> <li>Nutritional analysis and profiling of dishes</li> <li>Adapting standard recipes to meet the need of the consumer</li> <li>Understand what Fair Trade and organic foods are and what they offer.</li> <li>Further develop knowledge of labelling requirements for</li> </ul> </li> </ul>	<ul> <li>Electrical systems</li> <li>Key Knowledge: <ul> <li>Learning how to correctly fix components into a circuit.</li> <li>To develop knowledge and understanding of electronic components.</li> <li>Understand the role a PCB plays in electrical systems.</li> <li>To know the role</li> </ul> </li> </ul>	<ul> <li>Contextual challenge</li> <li>Key Knowledge: <ul> <li>To applying designerly thinking to a given design context</li> <li>Understand how to respond to a specific design task</li> <li>Develop empathy to a given content to better respond to the target audiences</li> </ul> </li> </ul>
	<ul> <li>Select from and use specialist tools, techniques, processes, equipment and machinery precisely</li> <li>Develop design ideas through sketch modelling and prototyping.</li> </ul>	ready meals Key Skills: • Select from and use a wider, more complex range of ingredients, taking into account their properties	electronic plays in the world around us Key Skills: • Select and safely use a range of tools and	<ul> <li>needs</li> <li>identify and solve their own design problems and understand how to reformulate problems given to them</li> </ul>



<ul> <li>Apply understanding of timber to create a rigid structure</li> </ul>	<ul> <li>Independent application of a variety of cookery skills to produce a meal</li> <li>Application of food safety good practice</li> </ul>	<ul> <li>processes to create a working sensor light.</li> <li>Develop design ideas through sketch modelling and prototyping.</li> <li>Ensure that safety standards are applied when constructing a PCB</li> </ul>	<ul> <li>Key Skills:</li> <li>Develop a specification to inform the design of innovative and functional prototype</li> <li>use research and exploration to identify and understand user needs</li> </ul>
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