



Topic name	Rotation	Skills developed (Research, Design, Make, Evaluate)	Link to NC subject content	Prior learning	Next link in curriculum
<p>Revisit Eatwell Guide, nutrients and healthy eating</p> <p>Food contamination</p> <p>Food choice and environmental considerations</p> <p>Revisit pastry, introduce bread - function of ingredients.</p> <p>Introduce function and characteristics of ingredients- gelatinisation and coagulation</p>	<p><b>Food &amp; Nutrition</b></p>	<p><b>Research and analysis:</b> Understanding ingredients from food/nutrient groups and energy balance Knowledge of feeding people through different life stages.</p> <p><b>Research:</b> Understanding food poisoning</p> <p><b>Research:</b> Understanding the environmental impact of packaging and food waste. Looking at farming methods and food production.</p> <p><b>Research, Evaluation, Design:</b> Looking at how adding different ingredients can affect form and function of the pastry and bread. Furthering skills of forming and shaping.</p> <p><b>Research, Evaluation:</b> Learn the processes that thicken, set and colour foods during cooking.</p>	<p>Understand and apply the principles of nutrition and health. Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet.</p> <p>Understanding source, seasonality and characteristics of a broad range of ingredients.</p> <p>Practical activities so they can feed themselves and others. Become competent in a range of cooking techniques. Selecting a range of ingredients and equipment, applying heat in different ways. Awareness of taste, texture and smell, deciding how to season dishes and adapt own dishes.</p>	<p><b>Links from previous Y7 rotation:</b></p> <p>Yr7 Nutrition and healthy eating</p> <p>Hygiene and safe working</p> <p>Yr 7 where food comes from.</p> <p>Multicultural foods/where foods come from/Food choice.</p> <p>Sensory evaluation Food sourcing</p>	<p><b>Link to next rotation:</b></p> <p><b>Research:</b> Food safety, storage and hygiene</p> <p><b>Evaluation, Design:</b> Food choice Use of ingredients in practical tasks</p> <p><b>Evaluation, design:</b> Various practical lessons</p> <p><b>Evaluation, design:</b> Practical tasks Function of ingredients</p>



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Souvenir inspired LED Light	Product Design	<p><b>Research-</b> What is a souvenir.</p> <p><b>Design and Creativity:</b> Students come up with a unique and visually appealing souvenir-inspired design for the acrylic panel. This encourages creativity in design.</p> <p><b>Make:</b> Drawing and Engraving: Hand engraving the acrylic panel demands precision, attention to detail, and artistic skills. This involves developing fine motor skills.</p> <p><b>Woodworking Skills:</b> Building the wooden base from softwood pine, gluing, and screwing, develops basic woodworking skills. Learning how to countersink screws properly is a valuable skill.</p> <p><b>Electronics and Soldering:</b> Assembling and soldering the LED light element involves learning about basic electronics, circuitry, and soldering techniques.</p> <p><b>Problem-Solving:</b> Throughout the project, students may encounter problems or challenges that require creative problem-solving, such as ensuring the LED is properly connected, aligned, and concealed within the base.</p> <p><b>Laser Cutting and Engraving:</b> The laser-engraved feature on the wooden base involves working with design software, which includes skills related to computer-aided design (CAD).</p> <p><b>Attention to Detail:</b> This project emphasises the importance of precision in every step, from engraving intricate designs on the acrylic panel to ensuring the laser-engraved wooden feature aligns correctly.</p> <p><b>Evaluate and Test:</b> Students will evaluate the final product, which is part of the iterative design process.</p>	<p><b>Designing:</b> Students are required to design a souvenir-inspired LED light, including the engraved acrylic panel and laser-engraved wooden base. This project encourages students to use their creative skills to come up with a unique design, considering aesthetics, functionality, and user needs.</p> <p><b>Making:</b> The project involves hands-on making and crafting skills. Students are tasked with woodworking to create the wooden base and hand engraving the acrylic panel. This practical aspect aligns with the curriculum's emphasis on developing making skills.</p> <p><b>Materials and Processes:</b> Students gain an understanding of different materials (wood, acrylic) and processes (soldering, laser cutting, and engraving).</p> <p><b>Technical Knowledge:</b> The assembly of the LED light element requires an understanding of basic electronics and soldering techniques, introducing students to technical knowledge and skills.</p> <p><b>Problem-Solving:</b> Throughout the project, students will encounter various challenges that require them to apply problem-solving skills. This aligns with the curriculum's focus on iterative design and practical problem-solving.</p> <p><b>Quality Control and Evaluation:</b> As students work on their LED light project, they need to ensure the quality of their work. This includes evaluating their product against design specifications.</p>	<p><b>Links from KS2:</b>  <b>Basic Design Skills:</b> At KS2, students learn basic design skills, including sketching and creating simple design ideas. This project allows them to build upon this foundation by designing a more complex product, incorporating aesthetics, functionality, and the use of 2D design software for laser engraving.  <b>Materials and Properties:</b> At KS2 students are introduced to various materials and their properties, such as wood, metal, plastic, and fabric. This project utilises this prior knowledge, with a focus on wood (softwood pine) and acrylic, helping students deepen their understanding of material selection and characteristics.  <b>Hand Tools and Equipment:</b> KS2 may introduce students to basic hand tools and equipment, like scissors and glue. This project builds on this by incorporating more advanced tools and equipment such as soldering irons, laser cutters, and engraving tools.  <b>Health and Safety:</b> Safety rules and practices for using tools and equipment are introduced in KS2. Students continue to develop these skills by applying safety knowledge to more complex tools and processes.  <b>Creative Expression:</b> The creative aspect of the project aligns with the creative skills developed in KS2.  <b>Links from previous Y7 rotation:</b>  <b>Food &amp; Nutrition-</b> Fine motor skills, attention to detail.  <b>Textiles-</b> Measuring, Fabric/Textile souvenirs.</p>	<p><b>Link to next rotation:</b>  <b>Research</b>  <b>Design</b>  <b>Make</b>  <b>Evaluate</b>  <b>CAM/CAM</b>  <b>Material Knowledge</b>  <b>Problem Solving</b>  <b>Creativity</b>  <b>Measuring &amp; Accuracy</b>  <b>Health &amp; Safety</b></p>



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Sleepwear- Pyjamas bottoms	<b>Textiles Technology</b>	<p>Focus on making and designing for other users.</p> <p>Research</p> <ul style="list-style-type: none"> <li>Different sleepwear</li> </ul> <p>Design</p> <ul style="list-style-type: none"> <li>for other users, focusing on being able to modify their design.</li> <li>Create a variety of different pocket designs that are compatible with their PJ bottoms.</li> </ul> <p>Make</p> <ul style="list-style-type: none"> <li>Pattern matching, tessellation, lay plan.</li> <li>Reinforcing the use of the sewing machine, over locker and iron. Manipulating to create a high level of finish.</li> <li>Accurate measuring and stitching.</li> <li>Learning how to sew the J seam.</li> <li>Accurate ironing to create the waistband and casing for the elastic.</li> </ul> <p>Making and application of a pocket-using the bagging out technique.</p> <p>Evaluation of completed product</p>	<p><b>Designing</b></p> <p><i>Consider the needs of other users and how designs are adapted for different markets.</i></p> <p><b>Materials and components</b></p> <p><i>Understand synthetic fibre sources, building on year 7 knowledge of natural fibre sources.</i></p> <p><b>Making</b></p> <p>select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture</p> <p>select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties.</p> <p>Use of quality control through the evaluation of their product.</p>	<p><b>Links from KS2:</b></p> <p><b>Links from previous Y7 rotation:</b> Basic skills of using the sewing machine and overlocker, properties of fabrics, evaluative skills.</p> <p><b>Food &amp; Nutrition-</b> Fine motor skills, attention to detail.</p> <p><b>Product Design-</b> Measuring accurately, CAD, joining methods.</p>	<p><b>Link to next rotation:</b></p> <p><i>Students will develop skills in producing a product that has been dyed and upcycled.</i></p> <p><i>Sustainability, research and make skills</i></p>



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<p><b>“Survival- Natural Disaster”</b></p> <p><b>Interdisciplinary project that includes elements of Food, Textiles and Product Design.</b></p> <p><b>The project explores the contextual theme of responding to the unexpected. It is based on the scenario of a large-scale disaster, where the means to carry out everyday life have suddenly and dramatically been removed. The challenge is to create a rescue design that supports people or communities who find themselves in this situation.</b></p>	<p><b>Core</b></p>	<p><b>Research-</b> Students research the types and magnitude of natural disasters.</p> <p>Research the health and well-being, cultural, religious and socio-economic contexts of their intended users.</p> <p>Match and select suitable materials considering their fitness for purpose.</p> <p><b>Design-</b> Generate, develop, model, and communicate ideas. This project is designed to have open-ended outcomes. It does not set out to define products or systems which might make good designs. Rather, it puts emphasis on the students identifying and developing good designs. The variety of possible solutions enables students to retain a degree of autonomy over their design and decision-making. This may mean that some students create prototypes that do not achieve great functionality. It is important to recognise this as a normal and useful function of the design process. Take creative risks when making design decisions. Combine ideas from a variety of sources.</p> <p>While students should aim to create a high-quality final prototype, our goal is for students to practice the non-linear and iterative design process.</p> <p><b>Evaluate</b> – Own ideas and existing products. Recognise relevant feedback and use it to make appropriate conclusions. Make judgements according to evidence.</p> <p>Test, evaluate and refine their ideas and products against a specification, considering the views of others.</p>	<p>Project aligns with NC by incorporating essential aspects of learning and skill development. The project not only covers specific technical skills and knowledge but also embodies the broader educational goals of fostering creativity, practical problem-solving, and interdisciplinary learning. The project is intended primarily to inspire students to think of design and engineering solutions to real human problems.</p> <p><b>Problem-Solving:</b></p> <p>Throughout the project, students will encounter various challenges that require them to apply problem-solving skills. This aligns with the curriculum's focus on iterative design and practical problem-solving.</p> <p>Students will learn how to take risks, be resourceful, be innovative and be enterprising.</p> <p>Understand how to use real design techniques to solve real problems.</p> <p>Analyse and apply iterative design processes.</p> <p>Identify and master the technical skills needed to produce design solutions.</p> <p>Understand and use the properties of materials and the performance of structural elements to achieve their intended functional solutions.</p>	<p>Previous Core group task in Year 7. Participate in and understand effective teamwork, communication, roles, and responsibilities. High Performance Learning (HPL)- Collaboration and teamwork.</p> <p>Designers/Engineers are problem-solvers. They research and develop ideas for new products and think about how to improve existing products. This project aims to demonstrate prior knowledge of this.</p> <p><b>Design Thinking and Problem Solving:</b> Understanding the design process — from identifying the problem and brainstorming ideas to creating prototypes and evaluating their effectiveness.</p> <p><b>Research Skills:</b> Ability to gather and analyse information to understand needs and constraints within the design context.</p> <p><b>Collaborative Work:</b> Skills in working effectively as a team, incorporating group ideas, and managing different opinions.</p> <p><b>Innovation and Creativity:</b> Ability to think creatively to design innovative solutions that integrate food, textiles, and product design for survival purposes.</p> <p><b>Cross-Curricular Link- Geography:</b> Insights into different types of natural disasters, their effects on human settlements, and geographical considerations in disaster response.</p>	<p><b>Research</b> <b>Design</b> <b>Evaluate</b> <b>Problem solving</b> <b>Material properties</b> <b>Collaborative HPL</b> <b>Communication skills</b> <b>Presentation skills</b> <b>CAD Skills</b></p>



**West Kirby**  
Grammar School

## Curriculum Map – Year 8 – Design Technology (2024-25)

