



## Key Stage 3

Year group:					
<p><b>YEAR 7 -</b> Exploring different materials across a range of areas. Producing skill based outcomes.</p>	<p><u>Tidy it - Desktop storage</u></p> <p>Designing and making a timber based desk tidy. Pupils will work through the design process to produce an high-quality outcome.</p>	<p><u>Ball it - Handheld Game</u></p> <p>Designing and manufacturing a plastic handheld game based around CAD and CAM. Pupils will learn how to use 2D Design and the laser cutter to produce a high quality outcome.</p>	<p><u>Sheet Animals</u></p> <p>Designing and making a metal based tea light holder. Pupils will work with templates and work to specific tolerances to produce a high quality outcome.</p>	<p><u>Textiles</u></p> <p>Exploring textiles through hand sewing skill to make a decorative cover sheet and machine sewing skills to create a patchwork block</p>	<p><u>Food and Nutrition</u></p> <p>Food Provenance and Sustainability: Introduction to the food room, routines and skills required to create well balanced meals. Also introduces the topic of food provenance and explore seasonal foods and where our food originates from. Pupils will learn how to use these sources of food to make various dishes.</p>
<p><b>KNOWLEDGE</b></p>	<ul style="list-style-type: none"> <li>• What a design brief is</li> <li>• What a design specification is.</li> <li>• Understanding user needs</li> <li>• Understand the health and safety requirements when working a D &amp; T Workshop</li> <li>• What timbers are, and the different forms available.</li> <li>• Know timber has different properties.</li> <li>• The process of developing design ideas based upon research</li> <li>• Process of oblique drawing</li> <li>• Understanding the key stage of production</li> <li>• Health and safety within the workshop -using hand and machine tools.</li> <li>• A tenon saw is used to cut straight lines in timber</li> <li>• A scroll saw is used intricate and curved shapes.</li> <li>• Understand basic wood joints</li> <li>• Understand the purpose of adhesives and different types used.</li> </ul>	<ul style="list-style-type: none"> <li>• What a design brief is</li> <li>• What a design specification is.</li> <li>• Understand a brief overview of the history of handheld games</li> <li>• Where plastics come from and the different forms available</li> <li>• Know different plastics have different properties.</li> <li>• The process of developing design ideas</li> <li>• Process of isometric drawing</li> <li>• Know what CAD is and 2D Design is an example of CAD</li> <li>• How to use 2D Design to design a product</li> <li>• Identify stages of manufacture</li> <li>• Know what CAM is and a laser cutter is an example of CAD.</li> </ul>	<ul style="list-style-type: none"> <li>• What a design brief is</li> <li>• What a design specification is.</li> <li>• Understand the health and safety requirements when working a D &amp; T Workshop</li> <li>• What metals are and the different forms available.</li> <li>• Know different metals have different properties.</li> <li>• Know what a template is and how they are used.</li> <li>• Understand a orthographic drawing.</li> <li>• Understanding the key stage of production</li> <li>• Health and safety within the workshop - using hand and machine tools.</li> <li>• The processes used to cut and shape sheet metal.</li> <li>• A hacksaw is used to cut metal</li> </ul>	<ul style="list-style-type: none"> <li>• To Understanding of the three main types of making fabric - knitted, woven, bonded</li> <li>• To understand and demonstrate functional and decorative hand sewing skills</li> <li>• To understand and demonstrate what a template is</li> <li>• To understand and demonstrate how to use a sewing machine</li> <li>• To demonstrate how to sew a seam and a patchwork block</li> <li>• Follow a design brief</li> <li>• How to use an iron correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Seasonal Food - origin, sustainability, how to use in various dishes and benefits of</li> <li>• Traceability of food</li> <li>• Food assurance schemes - how and why</li> <li>• What Sensory Analysis is - shown through choice of words</li> <li>• Identify fruit and vegetables - including seasonality and origin</li> <li>• Identify and understand health and safety/rules of food room</li> </ul>



	<ul style="list-style-type: none"> <li>Understand the finishing process for timber</li> <li>Understand the assembly process</li> <li>How to use user feedback to evaluate a product outcome.</li> </ul>	<ul style="list-style-type: none"> <li>Know what a laser cutter does and how they can be used.</li> </ul>	<ul style="list-style-type: none"> <li>A file is used to refine the finish on metal after cutting</li> <li>Understand metal fixing methods including brazing and riveting.</li> <li>How to use user feedback to evaluate a product outcome.</li> </ul>		
<b>SKILLS</b>	<ul style="list-style-type: none"> <li>Identify key parts of a design brief</li> <li>Follow a specification and know its key points</li> <li>Developing research - Questionnaire</li> <li>Act responsibly in the workshop environment.</li> <li>Sketch design ideas in 2D</li> <li>Produce a oblique drawing</li> <li>Using hand tools - screwdriver, try square, steel rule, tenon saw</li> <li>Using machine tools - scroll saw and pillar drill</li> <li>Use tools safely</li> <li>Create a basic wood joint</li> <li>Accurately finishing timber using sandpaper and oil/stains/wax</li> <li>Accurately assemble a product.</li> <li>Identify how the product outcome can be improved based on user feedback</li> </ul>	<ul style="list-style-type: none"> <li>Identify key parts of a design brief</li> <li>Follow a specification and know its key points</li> <li>Act responsibly in the workshop environment.</li> <li>Sketch design ideas in 2D</li> <li>Produce and isometric drawing</li> <li>Use 2D Design to produce 2D design ideas</li> <li>Key stages of laser cutting.</li> <li>Accurately follow a manufacturing plan.</li> <li>Accurately assemble a product.</li> </ul>	<ul style="list-style-type: none"> <li>Identify key parts of a design brief</li> <li>Follow a specification and know its key points</li> <li>Act responsibly in the workshop What metals are and the different forms available.</li> <li>Use a template to create a design idea.</li> <li>Follow a orthographic drawing to produce a product.</li> <li>Using hand tools - hacksaw, file, tin snips</li> <li>Use tools safely.</li> <li>Create a product using hand tools and bending processes,</li> <li>Use tools safely.</li> <li>Identify how the product outcome can be improved based on the specification</li> </ul>	<ul style="list-style-type: none"> <li>Functional hand sewing skills</li> <li>Decorative hand sewing skills</li> <li>Use of a sewing machine</li> <li>How to sew a seam with correct measurement</li> <li>How to pin fabric</li> <li>How to cut fabric</li> <li>How to use a template</li> <li>Use of an iron</li> </ul>	<ul style="list-style-type: none"> <li>Peeling</li> <li>Chopping - Bridge &amp; Claw method</li> <li>Rubbing in Method</li> <li>Boiling</li> <li>Grilling</li> <li>Baking</li> <li>Sauce making</li> <li>Combining Foods</li> <li>Sensory Analysis - critique of food samples</li> <li>All in one method</li> </ul>
<b>ASSESSMENT</b>	<p><b><u>Focussed Assessments</u></b></p> <p>Investigation Design <b>Make</b> Evaluate <b>Technical Knowledge</b></p> <p>Self and Peer assessment Teacher formative assessment through use of white boards</p>	<p><b><u>Focussed Assessments</u></b></p> <p>Investigation - <b>Design</b> <b>Make</b> Evaluate - <b>Technical Knowledge</b></p> <p>Self and Peer assessment Teacher formative assessment through use of white boards</p>	<p><b><u>Focussed Assessments</u></b></p> <p>Investigation Design <b>Make</b> Evaluate <b>Technical Knowledge</b></p> <p>Self and Peer assessment Teacher formative assessment through use of white boards</p>	<p><b><u>Focussed Assessments</u></b></p> <p>Investigation Design Make Evaluate - Technical Knowledge</p> <p>Self and Peer assessment Teacher formative assessment through use of white boards</p>	<p><b><u>Focussed Assessments</u></b></p> <p>MAKE: Practical - Apple crumble EVALUATE: Theory - Sensory Analysis</p> <p>Self and Peer assessment Teacher formative assessment through use of white boards</p>
<b>YEAR 8</b>	<p><b><u>A Special Gift</u></b></p> <p>Designing and making a Pewter and acrylic based product. Pupils will</p>	<p><b><u>Mechanical Systems</u></b></p> <p>Pupils learn about different types of motion and mechanical</p>	<p><b><u>Visualise - 3D CAD Modelling</u></b></p> <p>Pupils learn about three - dimensional CAD modelling through the use of OnShape.</p>	<p><b><u>Textiles- Recycle it - Bag</u></b></p> <p>An introduction to the 6r's and sustainable textiles. Pupils will build upon previous sewing and</p>	<p>Introduces the topic of the eatwell guide and the macro nutrient and micronutrients needed to create a balanced diet.</p>



	work through the design process to produce an high-quality outcome.	systems through design and modelling.	Designing and making a timber based desk tidy. Pupils will produce CAD based outcomes.	design skills to create pencil case with a recycled plastic element	Pupils will learn how to use the eatwell guide as a to make various dishes. Pupils will also learn how some food choices can effect what we eat and how we can accommodate these differences.
<b>KNOWLEDGE</b>	<ul style="list-style-type: none"> <li>Understanding a design brief is</li> <li>Developing a design specification.</li> <li>Understanding key factors of design eras.</li> <li>Understanding user needs and wants</li> <li>Identify properties of plastics and metals</li> <li>The process of designing and annotation</li> <li>The process of developing design ideas through 2D Design</li> <li>Advantages and disadvantages of CAD CAM</li> <li>Understand how to develop a drawing for CAM</li> <li>Understand how to use the laser cutter</li> <li>Understand the health and safety requirements when working a D &amp; T Workshop</li> <li>Understand what pewter casting is.</li> <li>Understanding the key stage of production</li> <li>Health and safety within the workshop -using hand and machine tools.</li> <li>A coping saw is used to intricate and curved shapes in timber</li> <li>A scroll saw is used to cut intricate and curved shapes.</li> <li>A file is used to refine a material.</li> <li>Understand the stages of a manufacturing diary</li> </ul>	<ul style="list-style-type: none"> <li>Understanding the different types of motion - Linear, oscillating, rotary and reciprocating</li> <li>Understand what a Cam and follower are and how they are used.</li> <li>Understand what levers and linkages are and how they are used.</li> <li>Understand what gears are and how they are used.</li> <li>Understand how mechanisms work to develop solutions.</li> <li>Understand how and why card modelling can be used</li> <li>Understanding key factors of design eras.</li> <li>Understanding user needs and wants</li> </ul>	<ul style="list-style-type: none"> <li>Understand what 3D CAD modelling is</li> <li>Advantages and disadvantages of 3D CAD</li> <li>Understand the industry application of CAD.</li> <li>Understand the working environments of 3D CAD Software.</li> <li>Learn and understand different tools and processes within CAD including -</li> <li>Creating basic shapes</li> <li>Adding features including radius', chamfer', holes.</li> <li>Revolving</li> <li>Understand how and why orthographic drawings are used.</li> <li>Understand how to create orthographic technical drawings using 3D CAD modelling.</li> </ul>	<ul style="list-style-type: none"> <li>What are the 6 r's and how we textiles can be more sustainable</li> <li>To understand what a design brief is</li> <li>ACCESSFM</li> <li>How to evaluate the work of others and why</li> <li>How to generate ideas</li> <li>How to develop ideas through drawing and sampling</li> <li>How to evaluate ideas and own work</li> <li>How to make and use a template</li> <li>How to follow instructions to make a product</li> </ul>	<ul style="list-style-type: none"> <li>Eatwell guide</li> <li>Vitamins and Minerals</li> <li>Food labelling</li> <li>Food Choices</li> <li>Nutrional Needs - Age</li> </ul>



	<ul style="list-style-type: none"> <li>How to use user feedback to evaluate a product outcome.</li> </ul>				
<b>SKILLS</b>	<ul style="list-style-type: none"> <li>Use a design brief and research to write a design specification</li> <li>Explain features of different design eras.</li> <li>Sketch design ideas in 2D and explain them using inspiration from a design era.</li> <li>Use 2D Design to draw and develop ideas</li> <li>The process of developing design ideas through 2D Design</li> <li>Set up the laser cutter so that it is ready for cutting.</li> <li>Using hand tools - coping saw, file, try square, steel rule.</li> <li>Using machine tools - scroll saw, pillar drill, polisher, casting equipment</li> <li>Use tools safely</li> <li>Accurately finishing a metal material using emery cloth, wet and dry and polishing</li> <li>Identify how the product outcome can be improved based on user feedback.</li> </ul>	<ul style="list-style-type: none"> <li>Identify and explain different types of motion</li> <li>Recall and explain the different types of mechanism.</li> <li>Working with modelling materials including cardboard</li> <li>Using scissors and a craft knife</li> </ul>	<ul style="list-style-type: none"> <li>Create basic shapes using 3D CAD.</li> <li>Add features within 3D shapes</li> <li>Use the revolve tool</li> <li>Create orthographic technical drawings</li> </ul>	<ul style="list-style-type: none"> <li>Use of a design brief</li> <li>Evaluate and analysing work of other</li> <li>Creating a mood board</li> <li>Generating ideas through sketching</li> <li>Generating ideas through sampling</li> <li>Use of heat press/iron</li> <li>Use of seeing machine</li> <li>Measuring</li> <li>Cutting fabric</li> <li>Recycling of a product to make a fabric</li> <li>Recycling a product to make a bag charm/keyring</li> <li>.</li> </ul>	<ul style="list-style-type: none"> <li>Chopping - Bridge &amp; Claw method</li> <li>Frying</li> <li>Grilling</li> <li>Baking</li> <li>Sauce making</li> <li>Combining Foods</li> <li>Raising agents</li> <li>Making a dough</li> </ul>
<b>ASSESSMENT</b>	<p><b>Focused Assessments</b></p> <p>Investigate Design Make Evaluate</p> <p><b>Technical Knowledge</b></p> <p>Self and Peer assessment Teacher formative assessment through use of white boards</p>	<p><b>Focused Assessments</b></p> <p>Investigate Design Make Evaluate</p> <p><b>Technical Knowledge</b></p> <p>Self and Peer assessment Teacher formative assessment through use of white boards</p>	<p><b>Focused Assessments</b></p> <p>Investigate Design Make Evaluate</p> <p><b>Technical Knowledge</b></p> <p>Self and Peer assessment Teacher formative assessment through use of white boards</p>	<p><b>Focused Assessments</b></p> <p>Investigate - Design Make Evaluate -</p> <p><b>Technical Knowledge</b></p> <p>Self and Peer assessment Teacher formative assessment through use of white boards</p>	<p><b>Focused Assessments</b></p> <p>Make - Tuscan Chicken Evaluate -</p> <p>Self and Peer assessment Teacher formative assessment through use of white boards</p>



<p>YEAR 9</p>	<p><b>Let there be Light</b></p> <p>Designing and making a MDF, Timber and Acrylic based LED Light. Pupils will work through the design process to produce an high-quality outcome.</p>	<p><b>Prototype 3D Card Modelling</b></p> <p>Pupils develop their drawing and modelling skills working to constraints and specific dimensions.</p>		<p><b>Textiles</b></p> <p>To explore surface pattern design on fabric in order to make a Kimono</p>	<p><b>Food</b></p> <p>Introduction to National and International cuisine, along with the skills required to make a variety of dishes. Also introduces the topic of food science. Pupils will learn how to use these sources of cuisine and traditions to make various dishes.</p>
<p><b>KNOWLEDGE</b></p>	<ul style="list-style-type: none"> <li>• Understanding a design brief is</li> <li>• Understand and identify different types of lighting</li> <li>• Understanding key factors of design eras.</li> <li>• Understand how to analyse existing products</li> <li>• Understanding user needs and wants</li> <li>• Understanding material uses and properties to make informed choices - further research into material choices - Manufactured boards</li> <li>• Developing a design specification linked to user needs and wants.</li> <li>• Understand simple electronic circuits using a PCB, Resistor, LED and USB lead.</li> <li>• Understand the process of soldering</li> <li>• The process of designing and annotation</li> <li>• The process of developing design ideas through 2D Design</li> <li>• Understand how nesting is used to ensure efficiency when using CAD/CAM.</li> <li>• Understand how to use the laser cutter and use it independently.</li> <li>• Understand the health and safety requirements when working a D &amp; T Workshop</li> <li>• Develop final outcome within 3D CAD</li> </ul>	<ul style="list-style-type: none"> <li>• How and why modelling is used in industry</li> <li>• Understanding how corrugated cardboard can be manipulated</li> <li>• Working safely with cutting equipment - craft knife</li> <li>• Understand modelling techniques using cardboard.</li> <li>• Understanding ergonomics and anthropometrics and how it used to inform and develop designs.</li> <li>• How iterative design is used to develop products.</li> <li>• Understand concept sketching and why it is used.</li> <li>• Understand how to work to constraints</li> <li>• Understand and plan how to develop a concept into a technical drawing.</li> <li>• Understand how to use a technical drawing to develop a card model.</li> </ul>		<ul style="list-style-type: none"> <li>• Understanding and analysing a design brief</li> <li>• How to research the work of others</li> <li>• How to take inspiration from the work of others</li> <li>• What is a mood board and how to use and make one</li> <li>• To understand and apply knowledge on how to create surface pattern design to fabric</li> <li>• How to work as a team to create a final design</li> <li>• How to sew a 3d product/garment</li> </ul>	<ul style="list-style-type: none"> <li>• National Food - Understand and Identify origin, Ingredients used, traditions</li> <li>• International Food - Understand and identify origin, Ingredients used, traditions</li> <li>• What Sensory Analysis is - shown through choice of words</li> <li>• Understand, Identify and apply of raising Agents - Chemical and biological</li> </ul>



	<ul style="list-style-type: none"> <li>Understand how to render in 3D CAD.</li> <li>Developing orthographic drawings</li> <li>How to use a specification to evaluate a product outcome.</li> </ul>				
<b>SKILLS</b>	<ul style="list-style-type: none"> <li>Use a design brief and research to write a detailed design specification</li> <li>Use presentation techniques to present research</li> <li>Explain features of different design eras.</li> <li>Identifying positives and negatives of existing products.</li> <li>Use soldering equipment to solder a circuit.</li> <li>The process of developing design ideas through 2D Design and hand drawing and using annotation</li> <li>Using the laser cutter to manufacture products.</li> <li>Use the laser cutter and use it independently.</li> <li>Produce a 3D CAD Drawing</li> <li>Produce a orthographic drawing.</li> <li>Identify how the product outcome can be improved using a design specification.</li> </ul>	<ul style="list-style-type: none"> <li>Working with corrugated cardboard</li> <li>Scoring, folding and cutting corrugated cardboard using a craft knife</li> <li>Using a glue gun</li> <li>Work safely with cutting equipment - craft knife/glue gun</li> <li>Take accurate measurements</li> <li>Sketch design ideas in 2D and 3D using concept sketching</li> <li>Use 2D to produce accurate drawings.</li> <li>Accurate measuring using drawing equipment.</li> </ul>		<ul style="list-style-type: none"> <li>Analysing a design brief</li> <li>Research skills</li> <li>Creating a moodboard</li> <li>Design/drawing skills</li> <li>Team work</li> <li>Sampling of surface design - tie dye, computer generated, natural dyes, painting on fabric, batik</li> <li>Generating a final design</li> <li>Sewing machine skills</li> <li>Cutting skills</li> <li>Ironing</li> </ul>	<ul style="list-style-type: none"> <li>Chopping - Bridge &amp; Claw method</li> <li>Rubbing in Method</li> <li>Boiling</li> <li>Grilling</li> <li>Baking</li> <li>Sauce making</li> <li>Combining Foods</li> <li>Sensory Analysis - critique of food samples</li> <li>All in one method</li> <li>Dough - making/shaping</li> <li>Stir Frying</li> </ul>
<b>ASSESSMENT</b>	<p><u>Focussed Assessments</u></p> <p>Investigation Design Make Evaluate <u>Technical Knowledge</u></p> <p>Self and Peer assessment Teacher formative assessment through use of white boards</p>	<p><u>Focussed Assessments</u></p> <p>Investigation Design Make Evaluate <u>Technical Knowledge</u></p> <p>Self and Peer assessment Teacher formative assessment through use of white boards</p>		<p><u>Focussed Assessments</u></p> <p>Investigation -wants Design Make - Evaluate - <u>Technical Knowledge</u></p> <p>Self and Peer assessment</p>	<p><u>Focussed Assessments</u></p> <p>Make - Evaluate - <u>Technical Knowledge</u></p> <p>Self and Peer assessment Teacher formative assessment through use of white boards</p>



Assessment:	How Will I be assessed at Key Stage 3?
	<p><b>Formative:</b> Lessons within Design and Technology involve a wide range of activities and learning opportunities. During lessons teachers assess formatively where teachers give constant feedback to students based on successes and how their work could be improved further. Providing feedback in this way allows students of all abilities to make high levels of progress. All students are able to develop their confidence whilst learning and making progress. Students will also self and peer assess their work with other students within the class, providing suggestions of how it could be improved.</p> <p><b>Summative:</b> Students will be assessed across the key focus areas of Investigation, Design, Making and Evaluation. Feedback is provided to pupils on how to improve their work within the particular area. Assessment criteria is shared with pupils before they commence their work. They are able to see what success looks like and what they need to do to achieve their targets. Students are also assessed on their Technical Knowledge based on individual subject areas.</p>