

# KS3 Long Term Plan 2022-2023

## Subject: Design and Technology



### Statement of Intent

The Design and Technology Department aims to allow students to exercise their creativity through designing, making and evaluating. Skills are taught and underpinned with theoretical knowledge of the subject to allow students to problem solve and take on design challenges. Skills are based on national curriculum guidance which are revisited and developed as students move through KS4 and KS5 exam specification. This approach is integral to both Product Design and Food Technology.

Problem solving, research, analysis, design, making, resilience, planning and innovation are all vital parts of the design, make and evaluate process and key skills students can bring with them to all aspects of their lives. Giving students the opportunity to apply knowledge and skills learnt across the curriculum helps to instil a love of the subject and bring their learning to life and provide aspirational future pathways.

### Statement of Implementation

KS3 Projects are designed to introduce students to the workshops and kitchen. Students are able to develop key skills and knowledge which will become the foundation for further study of the subject and prepare students for studying Design Technology and Food to GCSE and A-Level, as well as fostering enjoyment and developing skills, which they will use throughout life. Students are taught in a three part rotation with 2 50 minute lessons per week with the opportunity to attend enrichment clubs.

KS4 projects build on the skills and knowledge established at KS3 these projects are taught alongside 1 theory lesson a week. The initial focus KS4 projects is to prepare students for the NEA.

KS5 students are set their NEA which brings in all of the key elements of Design and Technology; Problem solving, Research, Analysis, design, make, resilience, planning and innovation. Once again this project based work is underpinned with theory lessons which take place two lessons a week for the entirety of the course.

To allow students to access all elements of Design and technology we have specific equipment over five classrooms including; two workshops, two computer rooms and a food room. Students are able to experience a range of workshop equipment alongside CAD software, laser cutting and 3D printing. The food rooms are equipped with all of the items needed for developing the skills within the subject. These skills encourage independent problem solving at KS4 and KS5.

All teaching of DT should follow the design, make and evaluate cycle. Each stage should be supported with technical knowledge. The design process should be rooted in real life, relevant contexts to give meaning to learning. While making, children should be given the knowledge to choose the right equipment to complete a task.

Term	Topics Covered (Date completed by and number of lessons)	Skills/AOs/interleaved content	Assessment (date and nature of assessment)
Yr. 7 DT	<p><b><u>Innovation Challenge (2 weeks)</u></b></p> <ul style="list-style-type: none"> <li>• Festival Fun</li> <li>• Design Process</li> </ul> <p><b><u>Calendar project (9 weeks)</u></b></p> <ul style="list-style-type: none"> <li>• Making Skills</li> <li>• Plastics and its properties</li>   <li>• Solving Design problems</li> <li>• Technical drawings (Google Sketchup + 2D design)</li> <li>• CAD + CAM</li> </ul>	Plan Innovate Design (Technical Drawing) Make Problem Solve Evaluate	<p><b>Orthographic drawing Practical</b></p> <p><b><u>End of topic test</u></b>            Multiple Choice            Tools Table            Process            Designing            Evaluating            Math's</p>
Yr. 7 DT	<p><b><u>Innovation Challenge (2 weeks)</u></b></p> <ul style="list-style-type: none"> <li>• Outdoor Eating Area</li> <li>• Design Process</li> </ul> <p><b><u>Sign Project (2 weeks)</u></b></p> <ul style="list-style-type: none"> <li>• Basic making skills</li> <li>• Design Skills</li> </ul> <p><b><u>CAM Toy (9 weeks)</u></b></p> <ul style="list-style-type: none"> <li>• Making Skills</li> <li>• Timber + Man Made Woods and their properties</li> <li>• Iterative process</li> <li>• Research – User needs</li> <li>• Specifications</li> <li>• Solving Design problems</li> <li>• 2D Design Skills</li> <li>• Aesthetically pleasing products</li> <li>• Sketching and Drawing skills (1pt +2pt perspective)</li> </ul> <p>Testing</p>	Innovate Design Process Make Analyse Design (Technical drawing) Make Evaluate	<p><b>One point perspective Practical</b></p> <p><b><u>End of topic test</u></b>            Multiple Choice            Tools Table            Process            Designing            Evaluating            Math's</p>
Year 7 Food	<p><b><u>Basic cooking skills</u></b></p> <ol style="list-style-type: none"> <li>1. Basic Chopping Skills, weighing, health and safety</li> <li>2. <b><u>Healthy Eating Wraps</u></b></li> <li>3. Introduction to the eatwell guide and healthy eating/ Sensory analysis</li> <li>4. <b><u>Pancakes</u></b>/Sensory analysis assessment</li> <li>5. <b><u>Pasta and Sauce</u></b></li> <li>6. Planning a healthy Muffin</li> <li>7. <b><u>Own Muffins (A)</u></b></li> <li>8. Labels and Marketing</li> <li>9. <b><u>Stir-fry</u></b></li> <li>10. Raising agent Experiment</li> <li>11. <b><u>Pizza Wheels</u></b></li> <li>12. Nutritional requirements/Analysis</li> </ol>	Knife safety Food hygiene and safety Measuring & Weighing Healthy eating Cooking methods Sensory analysis Experiments Gluten development Raising agents	<p><b>Sensory analysis assessment (wk4)</b></p> <p><b>Practical Assessment (Wk8/10)</b></p> <p><b>End of topic test</b></p>

Yr. 8 DT	<p><b><u>Innovation Challenge (2 weeks)</u></b></p> <ul style="list-style-type: none"> <li>• Bus Shelter</li> <li>• Design Process</li> </ul> <p><b><u>Iterative Toy Car (9 weeks)</u></b></p> <ul style="list-style-type: none"> <li>• Making Skills</li> <li>• Timber and its properties</li> </ul> <p>Iterative Design</p> <ul style="list-style-type: none"> <li>• Research – Different cultures</li> <li>• Reformulate problems</li> <li>• Specifications</li> <li>• User centered design</li> <li>• Testing</li> </ul>	<p>Research Make Innovate Test Iteration Evaluate Innovate Design Process Research Analysis Describe and Explain Evaluate</p>	<p><b>Orthographic projection Practical</b></p> <p><b><u>End of Topic Test</u></b></p> <p>Multiple Choice Tools Table Process Designing Evaluating Math's <b>Specification Practical</b></p>
Yr. 8 DT	<p><b><u>Innovation Challenge (2 weeks)</u></b></p> <ul style="list-style-type: none"> <li>• Chair</li> <li>• Design Process</li> </ul> <p><b><u>LED Light (9 weeks)</u></b></p> <ul style="list-style-type: none"> <li>• Making Skills</li> <li>• Graphic materials Packaging</li> <li>• Specification</li> <li>• Research – User needs</li> <li>• Oral and digital presentation</li> <li>• CAD+CAM</li> <li>• Testing</li> <li>• Electronic components</li> <li>• SMART materials</li> </ul>	<p>Innovate Design Process Make Research Analysis Describe and Explain Evaluate</p> <p>Innovate Design Process Research Analysis Describe and Explain Evaluate</p>	<p><b>Specification Practical</b></p> <p><b><u>End of Topic Test (50 marks)</u></b></p> <p>Multiple Choice Tools Table Process Designing Evaluating Math's</p>
Y8. Food	<p><b><u>Nutrition Health and Varied Diet</u></b></p> <ol style="list-style-type: none"> <li>1. Health &amp; safety and Food Hygiene</li> <li>2. <b><u>Chicken Fajita</u></b></li> <li>3. Healthy eating and diet related disease</li> <li>4. <b><u>Spaghetti Bolognese</u></b></li> <li>5. Nutritional assessment/Quesadilla</li> <li>6. <b><u>Bread Rolls</u></b></li> <li>7. Nutrition at different life stages</li> <li>8. <b><u>Cheese and veggie Triangles</u></b></li> <li>9. Healthy snack planning</li> <li>10. <b><u>Own Healthy snack (A)</u></b></li> <li>11. Experiment planning/<b><u>Experiment</u></b></li> <li>12. Environmental impact of food/food processing</li> </ol>	<p>Knife safety Food hygiene and safety Measuring &amp; Weighing Healthy eating Cooking methods Sensory analysis Experiments/Investigations Gluten development Sauce making</p>	

**Year 9 Finishing and reviewing KS3 and preparing students for KS4**

<b>Term</b>	<b>Topics Covered</b> (Date completed by and number of lessons)	<b>Skills/AOs/interleaved content</b>	<b>Assessment</b> (date and nature of assessment)
Yr. 9 DT	<p><b><u>Innovation Challenge (2 weeks)</u></b> Product for a cinema Design Process</p> <p><b><u>Mechanical Bird (8/9 weeks)</u></b> Movements and mechanisms Linkages and levers Pulleys Making skills – timber based Tinker CAD Systems</p>	<p>Innovate Design Process Make Research Analysis Describe and Explain Evaluate</p>	<p><b>Practical Design Page</b></p> <p><b><u>End of Topic Test</u></b></p> <p>Multiple Choice Tools Table Process Designing Math's</p>
Yr. 9 DT	<p><b><u>Innovation Challenge (2 weeks)</u></b> What a waste Design Process</p> <p><b><u>Contextual Challenge</u></b></p>	<p>Design Make Evaluate</p>	
Yr. 9 Food	<p><b><u>Nutrition Health and Food Choice</u></b></p> <ol style="list-style-type: none"> <li>1. Food Room Health and Safety/ Food inspection</li> <li>2. <b><u>Meatballs and sauce</u></b></li> <li>3. Healthy eating and Diet, nutrition and Health of an athlete</li> <li>4. <b><u>Katsu Curry (chicken or Tofu)</u></b></li> <li>5. Fairtrade, Environmental and ethical issues</li> <li>6. <b><u>Ravioli</u></b></li> <li>7. Religion, special diets and allergies and intolerances</li> <li>8. <b><u>Pasties</u></b></li> <li>9. Experiment Planning/ <b><u>experiment</u></b></li> <li>10. <b><u>Babka</u></b></li> <li>11. Planning final dishes (A)</li> <li>12. <b><u>Final Dish (A)</u></b></li> </ol>	<p>Knife safety Food hygiene and safety Healthy eating Cooking methods Sensory analysis Nutritional analysis Food impact on environment Adapting recipes Experiment/investigations Gluten development Raising agents Binding Sauce making</p>	<p><b>Nutritional assessment</b></p> <p><b>C/W style pages assessment</b></p>

