

KS3 Long Term Plan 2021-2022

Subject: Design and Technology



Statement of Intent

The Design and Technology Department aims to allow students to exercise their creativity through designing and making. Skills are taught and underpinned with theoretical knowledge of the subject to allow students to problem solve and take on design challenges. Skills are taught, revisited and built on as students move through the school. This approach is integral to both Product Design and Food Technology.

Problem solving, Research, Analysis, resilience, planning and innovation are all vital parts of the design and make 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.

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, 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.

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, 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 delivery of the subject.

All teaching of DT should follow the design, make and evaluate cycle. Each stage should be rooted in technical knowledge. The design process should be rooted in real life, relevant contexts to give meaning to learning. While making, children should be given choice and a range of tools to choose freely from.

Term	Topics Covered (Date completed by and number of lessons)	Skills/AOs/interleaved content	Assessment (date and nature of assessment)
Yr. 7 DT	<p><u>Innovation Challenge (2 weeks)</u></p> <ul style="list-style-type: none"> • Festival Fun • Design Process <p><u>Calendar project (9 weeks)</u></p> <ul style="list-style-type: none"> • Making Skills • Plastics and its properties 	Plan Innovate Design (Technical Drawing) Make Problem Solve Evaluate	<p>Orthographic drawing Practical</p>
Yr. 7 DT	<ul style="list-style-type: none"> • Solving Design problems • Technical drawings (Google Sketchup + 2D design) • CAD + CAM 	Plan Innovate Design (Technical Drawing) Make Problem Solve Evaluate	<p>Test Multiple Choice – 10 Tools Table – 4 Process – 3 Designing – 12 True /False + Drawing – 7 Long Answer Question – 4 Math's - 10</p> <p>Practical</p>
Yr. 7 DT	<p><u>Innovation Challenge (2 weeks)</u></p> <ul style="list-style-type: none"> • Outdoor Eating Area • Design Process <p><u>Sign Project (2 weeks)</u></p> <ul style="list-style-type: none"> • Basic making skills • Design Skills <p><u>CAM Toy (9 weeks)</u></p> <ul style="list-style-type: none"> • Making Skills • Timber + Man Made Woods and their properties • Iterative process • Research – User needs 	Innovate Design Process Analyse Design (Technical drawing) Make Evaluate	<p>One point perspective Practical</p>
Yr. 7 DT	<ul style="list-style-type: none"> • Specifications • Solving Design problems • 2D Design Skills • Aesthetically pleasing products • Sketching and Drawing skills (1pt +2pt perspective) <p>Testing</p>	Innovate Design Process Analyse Design (Technical drawing) Make Evaluate	<p>Test Multiple Choice – 10 Tools Table – 4 Process – 3 Designing – 12 True /False + Drawing – 7 Long Answer Question – 4 Math's - 10</p> <p>Practical</p>
Year 7 Food	<p><u>Basic skills and healthy diet</u></p> <ul style="list-style-type: none"> • Getting to know the food room • Food hygiene and safety • Healthy eating wrap • Healthy Eating • Pancakes • Sensory analysis (A) • Chicken Stir fry • Oils and Spread • Emulsifiers 	Knife safety Food hygiene and safety Measuring & Weighing Healthy eating Cooking methods Sensory analysis	<p>Sensory analysis assessment (wk4)</p> <p>Practical Assessment (Wk8/10)</p> <p>End of topic test</p>

	<ul style="list-style-type: none"> • Fruit Crumble • Labelling and Marketing • Pizza Wheels • Raising agents • Healthy Eating muffins (A) 		
Yr. 8 DT	<p><u>Innovation Challenge (2 weeks)</u></p> <ul style="list-style-type: none"> • Bus Shelter • Design Process <p><u>Iterative Toy Car (9 weeks)</u></p> <ul style="list-style-type: none"> • Making Skills • Timber and its properties • Iterative Design 	<p>Research</p> <p>Make</p> <p>Innovate</p> <p>Test</p> <p>Iteration</p> <p>Evaluate</p>	<p>Orthographic projection</p> <p>Practical</p>
Yr. 8 DT	<ul style="list-style-type: none"> • Research – Different cultures • Reformulate problems • Specifications • User centered design • Testing 	<p>Research</p> <p>Make</p> <p>Innovate</p> <p>Test</p> <p>Iteration</p> <p>Evaluate</p>	<p><u>Practical</u></p> <p><u>End of Topic Test</u> (50 marks)</p> <p>Multiple Choice – 10</p> <p>Tools Table – 4</p> <p>Process – 3</p> <p>Designing – 12</p> <p>True /False + Drawing – 7</p> <p>Long Answer Question – 4</p> <p>Math's – 10</p>
Yr. 8 DT	<p><u>Innovation Challenge (2 weeks)</u></p> <ul style="list-style-type: none"> • Chair • Design Process <p><u>LED Light (9 weeks) Headphone wrap</u></p> <ul style="list-style-type: none"> • Making Skills • Graphic materials Packaging • Specification • Research – User needs • 	<p>Innovate</p> <p>Design Process</p> <p>Research</p> <p>Analysis</p> <p>Describe and Explain</p> <p>Evaluate</p>	<p>Specification</p>
Yr. 8 DT	<ul style="list-style-type: none"> • Oral and digital presentation • CAD+CAM • Testing • Electronic components • SMART materials 	<p>Innovate</p> <p>Design Process</p> <p>Research</p> <p>Analysis</p> <p>Describe and Explain</p> <p>Evaluate</p>	<p><u>Practical</u></p> <p><u>End of Topic Test</u> (50 marks)</p> <p>Multiple Choice – 10</p> <p>Tools Table – 4</p> <p>Process – 3</p> <p>Designing – 12</p> <p>True /False + Drawing – 7</p> <p>Long Answer Question – 4</p> <p>Math's – 10</p>
Yr. 8 Food	<p>Food Safety & Hygiene</p> <p>Quesadilla</p> <p>Chicken Fajitas</p> <p>Healthy eating, intro to macro/micronutrients</p> <p>Pasta sauce w/ Meatballs</p> <p>Nutritional Analysis (A)</p> <p>Marinated chicken drumsticks</p>	<p>Knife safety</p> <p>Chopping techniques</p> <p>Food hygiene and safety</p> <p>Healthy eating Cooking methods</p>	<p>Nutritional analysis</p> <p>Own healthy snack</p>

	Bread rolls, gluten/yeast development Food Choice Mini fruit pie Healthy Snack (A) Lemon Drizzle Sensory Analysis Food impact on the environment Gluten free/gluten brownies	Sensory analysis Adapting recipes	
--	---	-----------------------------------	--

Year 9 Finishing and reviewing KS3 and preparing students for KS4

Term	Topics Covered (Date completed by and number of lessons)	Skills/AOs/interleaved content	Assessment (date and nature of assessment)
Yr. 9 DT	<u>Innovation Challenge (2 weeks)</u> Product for a cinema Design Process	Innovate Design Process Research Analysis Describe and Explain Evaluate	Practical Design Page
Yr. 9 DT	<u>Mechanical Bird (8 weeks)</u> Movements and mechanisms Linkages and levers Pulleys Tinker CAD Systems	Innovate Design Process Research Analysis Describe and Explain Evaluate	Practical Test
Yr. 9 Food	Food Nutrition and Health Sushi Katsu Curry Homemade Pasta Pasties Babka Nutritional dish Food allergies and Intolerance	Knife safety Food hygiene and safety Healthy eating Cooking methods Sensory analysis Nutritional analysis Food impact on environment	Nutritional assessment Nutritional meal for an athlete
Yr. 9	Computing		
Yr. 9	Computing		