

KENTON SCHOOL LEARNING JOURNEY

Key Stage 3 – Design Technology



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7	<p>Phone Stand</p> <p>Students will follow the design process introduced during Year 7. A Design Brief will be provided for a phone stand which students will research and design an appropriate theme for an engraving/ on the phone stand. The students will use CAD (2D Design) to Laser Cutter to cut/engrave. Use strip heater with Jig to bend acrylic plastic. Personalise with their theme and construct.</p>	<p>Jitter Bug</p> <p>Fundamental Electronics skills leading into Jitter Bug.</p> <p>Students will use soldering skill to complete the Jitter Bug circuit and design a bug to be cut from plywood. Students will use templates to construct the Jitter Bug using coping saw, file, pillar drill and disc sander. Students will create a series circuit using a AA battery holder, motor and an on/off switch using soldering equipment.</p>		<p>Money Box</p> <p>Introduction to the design process, students are presented with a design brief, which they will research and produce design ideas and evaluate.</p> <p>Making the money box from plywood using acrylic paint for their design on the final product.</p> <p>Students will further develop their measuring and marking skill from the phone stand to then cut and make the panels needed to make the money box.</p>	<p>Food</p> <p>To gain an understanding of how to safely use equipment, hygiene standards and the Eat Well guide. Student will make Fruit Salad, Cheese Scones, Fruit Muffin. Whilst focusing on bacteria, safe use of knives and rolling technique.</p> <p>Students will further practice and develop skills and knowledge by making Mini Pizza with different toppings and Tomato Pasta. With a focus on diet requirements, nutrition, Food Miles, and Sustainability.</p>	
Year 8	<p>Coat Hook</p> <p>Students will create a Coat Hook using plywood and mild steel. A design brief is provided, and students will create a design for their coat hook. The coat hook uses thicker plywood than the projects delivered in year 7 to further develop skill previous taught. The use of cutting, filing, drilling, shaping mild steel and protecting with plastic-coating is introduced as a new skill.</p>	<p>Hand Steady Game</p> <p>Developing skills obtained from electronics skills taught in year 7 from the Jitter Bug project.</p> <p>Students will use soldering skill to complete the Hand Steady circuit, this will involve the use of vera board for creating the circuit and using electronic components like, 9V battery clip, buzzer, resistors and transistors. Students will further develop design skills to create a cartoon themed background to the Handy Steady Game.</p>		<p>Trinket Box</p> <p>Students to construct a trinket box from orthographic drawing and making instruction booklet. The trinket box will be decorated based on a chosen theme by students. The project will require students to practice/improve/build upon existing skills using a range of joints, hand tools and machines to complete an accurate and high-quality outcome. The trinket box is constructed using pine.</p>	<p>Food</p> <p>Students will further develop skills and understanding taught in Year 7 by making. Vegetable Couscous Salad, Mini Carrot Cakes, and Bread. The focus of further learning of sugar in our diet and how this effects our health.</p> <p>Students will further practice and develop skills and knowledge by making Spaghetti Bolognese and Vegetarian Burritos. Further learning focusing on Fruit and vegetables with important of five a day and nutrition.</p>	
Year 9	<p>Mirror</p> <p>Developing skills obtained from Year 7 Phone Stand and Year 8 Trinket Box students will further develop practical woodworking skills to accurately make a small pine Mirror using a range of hand tools and machines independently and safely in the workshop whilst maintaining a production diary and evaluating their own progress. Students will further develop and improve their skills for using 2D Design software to manufacture the mirror that is attached to the stand.</p>	<p>Night Light</p> <p>Developing skills obtained from Year 7 Jitter Bug and Year 8 Hand Steady Gamer students will further develop practical electronic skills to accurately make a Night Light. Students will use printed circuit board replicate electronics used in modern applications. Students will follow the design process design to produce four design ideas for the acrylic part of the light following a chosen theme appropriate to the client. The acrylic part will be produced using 2D Design and Laser Cutter.</p>		<p>Bird Feeder</p> <p>Students have already developed a range of skills and knowledge in years 7, 8 and 9, which are to be reinforced and further developed with a more in-depth focus on accuracy and skills to mark out and cut more difficult joints which require a higher level of skill than previously required in other projects delivered.</p>	<p>Food</p> <p>Students have already developed a range of skills and knowledge in years 7 and 8, which are to be reinforced and further developed with a more in-depth focus on the province of foods, Cholesterol, and fats in food. Practical lessons students will make Pizza Swirls, Fruit cobbler, Cottage pie, Maids of honour and Savoury rice. A greater focus will also be applied to industry standards for Health & Safety and regulatory requirements for the food industry.</p>	

Students access the Key Stage 3 curriculum on a carousel of four 9/10-week rotations to give them a rounded experience of the different facets of design technology.

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Key Stage 4 – Hospitality & Catering



	Term 1	Term 2	Term 3
Year 10	<p>Introduce Level 1 / 2 Hospitality and Catering</p> <ul style="list-style-type: none"> • Course content and expectations • Health, Safety and Hygiene • Nutrition and Healthy Eating • Catering Establishments and Types of Service <p>Practical Skills Development – rubbing in, weights, measures, getting heat into food, knife skills, meat – red meat and chicken</p>	<p>Unit 1 – The Hospitality & Catering Industry</p> <ul style="list-style-type: none"> • Types of Service • Job Roles • Ratings and Reviews <p>Practical Skills Development – recipe modification, sauce making, pasta making, sweet bakes and pastry</p>	<p>Unit 1 – The Hospitality & Catering Industry</p> <ul style="list-style-type: none"> • Health, safety, risk assessment • The Hospitality Sector <p>Practical Skills – dough, yeast mixtures, enriched</p>
	Term 1	Term 2	Term 3
Year 11	<p>Unit 2 – The Hospitality and Catering Industry in Action (NEA) focus.</p> <ul style="list-style-type: none"> • Review key content and skills • Catering Establishments • Nutrition and Menu Planning <p>Introduce Assignment Brief. Work through each timed task.</p> <p>Autumn 2 – Assessed Practical</p>	<p>Spring 1 – completion of Unit 2 – The Hospitality and Catering Industry in Action</p> <p>Spring 2 - Unit 1 – The Hospitality and Catering Industry focus</p> <ul style="list-style-type: none"> • Revision <p>Exam Success including Past Questions.</p>	<p>Revision and exam success covering Unit 1 – The Hospitality and Catering Industry content.</p> <p>Examination: May / June 2025</p>

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Key Stage 4 – Engineering Design



	Term 1	Term 2	Term 3
Year 10	<p>Unit R038: Principles of engineering design (External Exam)</p> <p>Parts of the four topic areas in R038 for the external exam are covered in R040 and R039 which are taught across the two years of the course.</p>	<p>Unit R039: Communicating designs</p> <ul style="list-style-type: none"> • Topic Area 1: Manual production of freehand sketches • Topic Area 1: Manual production of freehand sketches - Design Development • Topic Area 2: Production of engineering drawings • Topic Area 3: Use of Computer Aided Design (CAD) <p>Submission in May</p>	<p>Unit R040: Design, evaluation and modelling</p> <p>New scenario releases in June Topic Area 1.1: Product Evaluation – Product Analysis</p>
	Term 1	Term 2	Term 3
Year 11	<p>Unit R040: Design, evaluation and modelling</p> <ul style="list-style-type: none"> • Topic Area 1.1: Product Evaluation – Product Analysis • Topic Area 1.2: Product Evaluation – Product Disassembly • Topic Area 2: Virtual CAD 3D • Topic Area 2: Physical Modelling – Production Planning • Topic Area 2: Physical Modelling – Prototype Production • Topic Area 2: Physical Modelling – Evaluation of a prototype <p>Complete in March and submission in May</p>	<p>Unit R038: Principles of engineering design (External Exam)</p> <ul style="list-style-type: none"> • Topic Area 1: Designing processes • Topic Area 2: Design requirements • Topic Area 3: Communicating design outcomes • Topic Area 4: Evaluating design ideas <p>External Exam in May/June,</p>	

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Key Stage 4 – Engineering Manufacture



	Term 1	Term 2	Term 3
Year 10	<p>Unit R014: Principles of engineering manufacture (External Exam)</p> <p>Parts of the four topic areas in R014 for the external exam are covered in R015 and R016 which are taught across the two years of the course.</p>	<p>Unit R016: Manufacturing in quantity</p> <ul style="list-style-type: none"> • Topic Area 1.1: Manufacture and use templates • Topic Areas 1.2, 1.3 and 1.4: Determine the sequence of operations, appropriate operating parameters for CNC equipment and produce standard operating procedures • Topic Areas 2.1 and 2.2: Use CAD software and program CNC machine operations • Topic Areas 3.1 and 3.2: Setting up and operating CNC equipment • Topic Area 3.3: Apply quality control methods <p>Submission in May</p>	<p>Unit R015: Manufacturing a one-off product</p> <p>New scenario releases in June Topic Area 1: Planning the production of a one-off product</p>
	Term 1	Term 2	Term 3
Year 11	<p>Unit R015: Manufacturing a one-off product</p> <ul style="list-style-type: none"> • Topic Area 1.1, 1.2: Interpret an engineering drawing and prepare a production plan • Topic Area 1.3: Risk assessment • Topic Areas 2.1 and 2.2: Measuring and marking out • Topic Area 3.1: Manually controlled machining processes • Topic Area 3.2 and 3.3: Tools and equipment and joining techniques <p>Complete in March and submission in May</p>		<p>Unit R014: Principles of engineering manufacture (External Exam)</p> <ul style="list-style-type: none"> • Topic Area 1: Manufacturing processes • Topic Area 2: Engineering materials • Topic Area 3: Manufacturing requirements • Topic Area 4: Developments in engineering manufacture <p>External Exam in May/June,</p>

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Key Stage 5 – Manufacturing Engineering



	Term 1	Term 2	Term 3
Year 12	<ul style="list-style-type: none"> • Unit 1 Engineering Principles (Exam) - Learners apply mathematical and physical science principles to solve electrical-, electronic- and mechanical-based engineering problems. Studied over both years, sitting exam in Jan Year 13 and again May Year 13. • Unit 2 Delivery of Engineering Processes Safely as a Team - Learners explore how processes are undertaken by teams to create engineered products or to deliver engineering services safely. • Unit 3 Engineering Product Design and Manufacture (Exam) - Learners will explore engineering product design and manufacturing processes and will complete activities that consider function, sustainability, materials, form and other factors. Studied in Year 12, sitting exam in Jan Year 12 and second attempt in May Year 12. • Unit 4 Applied Commercial and Quality Principles in Engineering. Learners explore commercial engineering, for example key business activities, cost control, quality systems and value management, which is used by engineering organisations to create value. • Unit 5 A Specialist Engineering Project. Learners apply project-management principles to undertake a 30-hour individual project and will produce a product, system or process relevant to their specialist area of study. • Unit 39 Modern Manufacturing Systems Learners will investigate the principles of processing systems used in manufacturing and how operations are organised to make the most efficient use of time, materials and equipment. 		
	Term 1	Term 2	Term 3
Year 13	<ul style="list-style-type: none"> • Unit 1 Engineering Principles (Exam) - Learners apply mathematical and physical science principles to solve electrical-, electronic- and mechanical-based engineering problems. Studied over both years, sitting exam in Jan Year 13 and again May Year 13. • Unit 9 Work Experience in the Engineering Sector. Learners explore the benefits of work experience. They carry out and reflect on a period of work experience, and plan for their personal and professional development. • Unit 10 Computer Aided Design in Engineering. Learners develop two-dimensional (2D) detailed drawings and three-dimensional (3D) models using a computer-aided design (CAD) system. • Unit 41 Manufacturing Secondary Machining Processes. Learners explore and carry out secondary machining processes to manufacture shapes by the safe removal of material. • Unit 44 Fabrication Manufacturing Processes Learners explore and carry out fabrication processes to safely manufacture products from sheet metal. 		

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Key Stage 5 – Home Cooking Skills



	Term 1	Term 2	Term 3
Year 12	<p>Be able to use cooking skills to make home-cooked food that does not use pre-prepared, ready-cooked food</p> <p>Understand the value of passing on information about home cooking</p>	<p>Select and prepare ingredients for a recipe</p> <p>Use cooking skills when following a recipe</p> <p>Demonstrate food safety and hygiene throughout the preparation and cooking process</p> <p>Reflect on own learning about the value of gaining cooking skills</p> <p>Identify ways to pass on information about home cooking</p>	
	Term 1	Term 2	Term 3
Year 13	<p>Be able to plan a nutritious, home cooked meal using basic ingredients</p> <p>Be able to prepare, cook and present a nutritious, home cooked meal using basic ingredients</p> <p>Understand how to cook economically at home</p> <p>Be able to pass on information about cooking meals at home from scratch</p>	<p>Plan a nutritious two-course meal</p> <p>Select and prepare ingredients for recipes for a nutritious, two-course meal</p> <p>Use cooking skills when following the recipes</p> <p>Demonstrate food safety and hygiene throughout the preparation and cooking process</p> <p>Apply presentation skills when serving the meal</p> <p>Explain ways to economise when cooking at home</p> <p>Identify ways information about cooking meals at home from scratch has been passed on to others</p>	