

## Year 8 Overview 2023-24 – D&T Each unit taught in a rotation 3 units contained in 6 double lessons.

Project	Food Preparation and Nutrition – Focus on working with high risk foods		
6 x 2hr lessons	<b>Prior</b>	<b>Current</b>	<b>Links to future tasks</b>
	<b>Lesson 1 - Understanding where bacteria comes from. Principles of Food Safety and safe food storage.</b>		
	Basic use of the room.	Introduce High risk foods are and <b>Bacteria</b> , watch the animation. Where do bacteria come from? and look at germometer, this is a food industry concept not just in food lessons – link to GCSE curriculum. Complete work on Food poisoning bacteria.	Knowledge linked to any practical or handling of high risk foods. (Fish or fish products, meat or meat products, dairy or dairy products, eggs or egg products and cooked rice.
	<b>Lesson 2 – Cheese and Herb Scones Practical</b>		
	Recall use of equipment and room with a promotion of independence. Recall tidying and washing up procedures. Recall from year 7 - Accurate measuring. Use of oven. Use of rubbing in method. Dough making skills.	Grating for the first time, using cheese as a high risk food. Emphasis on making a dough that is not too wet.	Bread making (GCSE). Life skills handling of high risk foods. Making pastry dough in year 9 Own choice practical in year 9.
	<b>Lesson 3 – Rice Salad and French Dressing Practical</b>		
	Knowledge of working with high risk foods. Chopping into uniform pieces.	Use of hob for the first time. Cooking rice, boiling pan and draining through colander in sink safely– high risk food when cooked – must be cooled and stored quickly to prevent bacterial growth. Making an emulsion sauce.	Using and storing high risk foods (GCSE). Emulsion sauce (GCSE). Own choice practical in year 9. Making rice dish based in different cultures in year 9. Life skills linked with high risk foods and boiling and draining foods.
	<b>Lesson 4 – Bolognese Sauce Practical</b>		
	Use of hob. Knowledge of working with high risk foods.	First practical to use raw meat so Food Safety this needs to be emphasised throughout. Judge if the meat is cooked correctly. Leave tomato based sauce to simmer to develop flavours. How to store to consume later.	Using and storing high risk foods (GCSE). Tomato based sauce (GCSE). Life skills linked with making meat based sauces and boiling and draining. Own choice practical in year 9.
	<b>Lesson 5 – Macaroni Cheese Practical</b>		
	Bridge and claw grip. Knowledge of working with high risk foods. Grating. Boiling and draining a pan.	Emphasis on the All-in-One starch sauce method and explaining gelatinisation. Use the <b>animation from digital book</b> to explain how the sauce thickens. Presentation techniques with thinly sliced tomato.	Using and storing high risk foods (GCSE). Starch based sauce (GCSE). Life skills linked with high risk foods and boiling and draining. Presentation of food products. Own choice practical in year 9.
	<b>Lesson 6 – Potato Topped Beef Practical</b>		
	Knowledge of working with high risk foods. Peeling and chopping. Bridge and claw grip. Use of the oven. Grating. Boiling and draining a pan.	How to mash and how to layer the dish. Work within tight time constraints.	Progress to working looking at foods from different cultures and countries. Selecting own dishes to present to a customer and continue to develop GCSE preparation skills linked with the GCSE curriculum.
<p><b>Good</b> With help, identify important temperatures to keep food safe. Dough formed with some uniformity and accuracy. Products a little undercooked or a little overcooked. Safe and hygienic working practice has been followed. Vegetables chopped with some uniformity and accuracy. Rice is a little overcooked. Use a masher, kettle, pan and other equipment safely. Work with a high risk food correctly. Make a finished product. Use a sharp knife to slice with, some with uniformity and accuracy. Make a tomato and starch based sauce.</p> <p><b>Better</b> Be able to identify important temperatures to keep food. Dough formed with uniformity and accuracy, dough has been cooked correctly and handled well. Good quality product is made that is suitable for sale. Chop with uniformity and accuracy. Rice has been cooked correctly and handled well. Judge yourself when meat is cooked correctly and work without much assistance from the teacher. Judge if the pasta is cooked correctly, pasta has been cooked correctly and handled well.</p> <p><b>Excellent</b> Independently identify important temperatures to keep food safe. Dough is accuracy made, shaped and cooked correctly. Safe and hygienic working practice has been followed. A high quality product suitable for sale is produced and you work independently. Dressing is accurately made. Rice has been cooked correctly. Tomato is sliced with uniformity and accuracy. Pasta is cooked correctly, starch based sauce has been cooked well, it's smooth and the correct viscosity.</p>			
Project	Materials Technology – Clock Unit		
6 x 2hr lessons	<b>Prior</b>	<b>Current</b>	<b>Future learning</b>
	<b>Lesson 1 – Analyse a task and research designers, design movement, brand names, retailers.</b>		
	Year 7 - Analysing a task, basic research skills. Drawing and rendering skills for title. Use of Google Classroom.	Introduce design brief. Analyse task and use as foundation for research. Research into design movement etc Homework to research properties and uses of acrylic.	Develop analysis skills in year 9. Look at the work of others at GCSE level.
	<b>Lesson 2 – Design process – Generate ideas, annotation and rendering.</b>		
	Year 7 – 3D drawing in oblique. Rendering techniques. Basic annotation (materials and tools used). Title rendered in L1. Research on chosen designer.	Generate two creative design ideas based on research (inspired by design movement), sketched in 3D and rendered. Ideas should be more innovative (3D) Annotate ideas in detail, greater understanding for materials and tools used giving justified reasons.	Year 9 – develop design process to include orthographic and isometric. Produce a more complex range of design ideas.
	<b>Lesson 3 – Manufacturing aids and Manufacture of prototype.</b>		
	H&S in a workshop, recall names and use of tools and equipment safely. Template making.	Make accurate manufacturing aids (template production). Discuss minimising material wastage. Develop their use of the Fret/Coping saws to cut & shape acrylic. Understanding different types of production (one off, batch, mass) Reflect on learning through diary of making.	Year 9 – independent use of machine tools (fret saw). More quality control measures put in place. Advantage of a laser cutter when understanding levels of production. Tessellation to reduce material wastage.
	<b>Lesson 4 – Continuation of manufacture</b>		
	Recall of H&S in a workshop. Recall names and use of tools and equipment safely. Some may recall knowledge of using pillar drill from Masterclass.	Cutting and shaping of acrylic, focusing on quality control. Recall the use of emery cloth, wire wool and buffing machine for edge finishing techniques. Safe use of specialist glues. Reflect on learning through diary of making.	Year 9 – independent use of machine tools (fret saw). More quality control measures put in place – edge finishing.
	<b>Lesson 5 – Continuation of manufacture, CAD/CAM production.</b>		
	Recall of H&S in a workshop. Recall names and use of tools and equipment safely. Recall knowledge of 2D Design and vinyl cutter from masterclass. Use of specialist glues	How to use 2D Design to add details to the prototype. Edge finish of acrylic parts. Line bending Acrylic Parts for stand. Use of the vinyl cutter to add detail. Reflect on learning through diary of making.	CAD/CAM production. Use of 2D Design to develop component manufacture. Use of DXF files and import/export, use of laser cutter, tessellation.
	<b>Lesson 6 - Recall knowledge of 2D Design and vinyl cutter.</b>		
	Recall knowledge of 2D Design and vinyl cutter. Year 7 and previous topic(s) (if applicable) – evaluation process.	Complete assembly of prototype. Photograph for evaluation. Discussion on their learning against success criteria. Evaluate practical skills and complete prototype.	Year 9 – Evaluation to show a deeper understanding of the design and manufacture process.

	<p><b>Good</b> Collect some information on chosen design movement, basic analysis of information. Some understanding of the polymer acrylic, origins and uses. A range of ideas that have been attempted in 3D with some basic annotation. Basic templates produced to allow production to begin. Some accuracy when cutting &amp; shaping with a coping/fret saw. Some quality control is applied through the manufacturing process including edge finish and assembly. Accurate bending using the Strip Heater. Basic understanding of 2D design and how a vinyl cutter works, can use with guidance. A complete clock which can clearly show time.</p> <p><b>Better</b> Detailed analysis of research gathered to help inform design ideas. Acrylic investigated as a material – origins, uses and properties. Appropriate design ideas sketched accurately in 3D, with annotation that explains how it will be made. Accurate templates produced for all parts of the clock, some Precision when cutting &amp; shaping with a coping/fret saw. Good understanding of 2D design &amp; vinyl cutter and can somewhat independently use. A well-made clock showing a good range of skills.</p> <p><b>Excellent</b> Work independently on research &amp; detailed analysis of design movement. High quality presentation. Clear understanding of materials and properties. Independent 3D sketching of high quality. Annotation clearly explains the construction details and has been fully informed by research and homework. Precision &amp; Independence when Cutting &amp; Shaping with a Coping/fret Saw including edge finishing. Quality control has been applied throughout the manufacturing process. Independent use of 2D Design and vinyl cutter. A product of high quality showing a range of well executed skills.</p>		
	<b>Project</b>		
6x2hr lessons	<b>Electronics and Polymers - Trivia game.</b>		
	Prior	Current	Future learning
	<b>Lesson 1 – What is electronics, components and their uses.</b>		
	Majority have knowledge of bulb and battery from KS2. Home experiences of battery's use of electronic products in everyday life. If done later in year may recall some from science.	Questioning the electronics, they use in everyday life, what is it? why use it? Etc. Basic introduction to simple electronics and basic components and their symbols, key vocab and principles of resistance. Component selection and batteries. Contextual challenge introduction.	In their general use of the energy source. At KS4 energy production and storage, designing /problem solving using electronics. Standard components. Links back to science
	<b>Lesson 2 – Polymers and forming, cutting, drilling them.</b>		
	Names of polymers they may know from recycling lists and can recall seeing how some polymers are used	Using systems approach to designing a circuit and drawing it. Polymers and their uses, origins and working properties. Forming polymers use of vacuum former, drilling with pillar drill and PCB drill, trimming, edge finishing.	In the evaluation and further development lesson. GCSE working Ability to know the uses and limitations of the tools and equipment to work materials and use on future products. Able to work out the forming processes used on everyday products.
	<b>Lesson 3 – Conductive materials and application</b>		
	Use of fine motor skills. ICT skills. Understanding of how the who wants to be a millionaire game works.	Construction of question cards for the game using the principles of conduction and insulation of electricity. Use of google slides program, paper trimmer, hole punches, tin foil. Quality control.	Wider knowledge of conductors and insulators of electricity, heat etc at KS4. Use of publisher in yr 9 and KS4. Quality control ongoing.
	<b>Lesson 4 – Soldering and circuit construction.</b>		
	Some have constructed a bulb in a circuit by temporary connections.	Introduction to the tools and equipment used to permanently build a circuit. Use of a soldering iron, H&S, soldering skills on different gauges of metals. PCB board production/ mass production	Un understanding of how components are permanently connected in all our electronic products. Ability to use the tools and equipment independently when needed. Fine working skills.
	<b>Lesson 5 – Construction Q.C and Assembly.</b>		
	Recall from previous lesson	Construction if both circuit and polymer casing using soldering equipment Quality control measures and testing function of product.	Quality control measures and quality assurance.
	<b>Lesson 6 – Testing Evaluating and possible developments.</b>		
	Playing games, consumerism, function, development of imagination	Completion of game, consumer group testing, roles of consumer and developer evaluation leading back to the start of the design process. Concept of 'Out of the box thinking'.	A prototype is ever the end, a cycle. Problem solving used throughout life.
<p><b>Good</b> They have followed through the process, produced a prototype and can name the majority of the equipment and techniques they have learnt about.</p> <p><b>Better</b> They understand the process they have been through to help them produce a good quality prototype; it is well made showing a good degree of quality control. They can name the tools and equipment that they have used and explain what they do. They show confidence in using the equipment. They are able to suggest a number of developments for the prototype to improve its appeal to potential consumers.</p> <p><b>Excellent</b> Materials understanding and knowledge is very good they understand where materials come from and our need to choose and select material for certain functions. They understand the process they have been through to help them produce a prototype, in which Quality control has clearly been applied. They can name the tools and equipment that they have used and explain what it does. They have the confidence to use the equipment by themselves. They are able to suggest a number of developments for the prototype to improve its appeal to potential consumers and are able to name components/processes which would be used to realise the developments.</p>			