DESIGN TECHNOLOGY / FOOD PREPARATION & NUTRITION YEAR 7

	Topic	Knowledge What will students know by the end of this unit?	Skills What skills will students have developed by the end of this unit?	Big Idea What are the essential ideas which students could not leave school without?	Cross Curricular What links to other subjects / enrichment might be made?
D&T 1	Eames animals (Focus on designing, communication of ideas and sustainability)	The importance of CAD/CAM in design and how they can use it for their own designing. How a 3D printer and laser cutter work How to use the work of designer to inspire their own designing. How to evaluate and develop their ideas. The meaning of key terminology such as function, sustainability and aesthetics. How to create a working drawing using an assessment criterion. How to draw in isometric How to render designs using hatching and cross hatching How to test a design and suggest improvements for the future. How to design using quick paper modelling. How to apply accurate dimensions to their design work to improve functionality. How to use a code when developing a net. How to design a net with tabs and slots. How to position materials to reduce waste when manufacturing. How to be a responsible designer and consider the 6R's. How a 3D printer works	Accuracy in measuring Evaluating and reflection Creative designing Quick model making CAD (both 2D and 3D) Time management Independent research Net development Investigate the work of designers (Ray and Charles Eames and Aljoud Lootah) 3D printing	CAD/CAM is used in some from in the majority of modern manufacture Confidence to create something using machinery How to be safe in a working environment Reflecting on their own ideas and knowing how to develop them Taking controlled risks and being creative	Art- linking to art/design movements and how this influences design History- social factors in history that affect design Maths- accuracy, measuring and scale Science- development of technology, especially in relation to 3D printing Computing- CAD designs and how a 3D printer works (programming) Geography and Science- Sustainability and being environmentally aware as a consumer
D&T 2	Eco homes (Focus on designing, communication of ideas and sustainability)	Basic design skills How to create a working prototype. How to draw in isometric perspective How to research independently How to use the work of others to influence their own designing. Rendering designs considering tone, colour and shade. How alternative energies work. What the 6R's are and how they can be applied to a design. How to create a card model safely and accurately. How to use model making tools and equipment such as cutting boards, craft knives and safety rulers. How to calculate the scale of a design. How to use the work of other designers to inspire their own designs.	Responsibility for their own progress Problem solving Independent research Analysis Evaluation and reflection Time management Planning manufacture Prototyping Creative designing basic scissor/ craft knife health and safety and skills Isometric drawing and rendering.	An understanding of sustainability in design and architecture. The ability to use scissors, craft knives, paper and card with accuracy The ability to plan the manufacture of a prototype	Science- Alternative energies and sustainable living Art – Model making and using model making equipment safely. Maths- Accuracy, measuring and scale
Food Prep 1	Hygiene and safety in the kitchen	Will know how to work safely and hygienically in the kitchen. How to chop ingredients safely and correctly. How to use a hob and oven. Important considerations when designing a recipe. How pathogenic bacteria grows and breeds. Key temperatures in food and safety and hygiene.	Using the cooker independently Claw and bridge technique to chop precisely and safely – dicing and slicing Designing dishes and meals Enrobing Using a food processor Cooking pasta Tomato sauce Binding and shaping Piping	Basic practical skills that they can build on to create simple dishes. Independence in the kitchen. A good understanding of how to apply food safety in their own kitchens.	Science- pathogenic bacteria D&T- Designing skills English- Terminology Maths- Cellular division

DESIGN TECHNOLOGY / FOOD PREPARATION & NUTRITION YEAR 8

	Topic	Knowledge What will students know by the end of this unit?	Skills What skills will students have developed by the end of this unit?	Big Idea What are the essential ideas which students could not leave school without?	Cross Curricular What links to other subjects / enrichment might be made?
D&T 1	Memphis jewellery (Focus on practical skills and materials)	The characteristics and influences of Memphis design. How to use the designs of others to influence your own work. (Morag Myerscough) How to doodle to inspire designing. How to create visual research through collages and mood boards. How to research independently and use this for future work. How to create a variety of design ideas using different mediums. How to create a successful mould for pewter casting. How to prepare moulds. How to heat treat metals and how this affects the material. Why safety is important when completing metal work. The key characteristics of ferrous and non-ferrous metals and examples of the 2 categories. How to apply colour to metal through enamelling. The importance of quality control and finishing.	CAD/CAM (laser cutting and 2D design) Mould making Pewter casting Silversmithing (cutting, texturing, filing, sanding and polishing sheet copper) Using a hand drill Time management Independence in the workshop	Confidence using machinery and equipment. Independent research skills using a variety of different sources. Understanding how things are manufactured on a small scale.	Art- Looking at the work of different jewellers and artists for inspiration. Creating collages and mood boards Science- Heat treatment and categorisation of different metals Computing- Creating CAD designs.
D&T 2	Perceptions of beauty Textiles toy (Focus on practical skills and materials)	How to use social views to influence your design work. How to analyse existing products and understand how they have been made. Understand diversity and inclusion in design. How to use the work of other designers to inspire their own designs (Rei Kawakubo) How to manipulate fabric to create structure and volume How to follow a pattern and calculate seam allowance. Consider perceptions of beauty and body image in fashion. How to experiment with materials and use them in an unexpected way.	Using a sewing machine Fabric manipulation Applique Hand embroidery Time management Creative designing Product analysis	The perception of beauty, especially in the fashion industry. Using experimentation to be creative. Basic textiles skills that can be applied in the future. For example, the ability to make simple repairs.	Citizenship- Exploring body image and perceptions of beauty. Art- Fashion and looking at the work of other designers.
Food Prep 1	Food choice and nutrition	Understand and apply the eat well guide when making choices about their own diet. Portion sizes and their importance. Understanding of different energy requirements. Impact of diet on physical, intellectual, emotional and social. How diseases and illnesses can be caused by a poor diet. How macro nutrients provide us with energy and the importance of energy balance. Why we should eat more fruit, vegetables and fibre and less fat, sugar and salt. Know the function and sources of all nutrients.	Make pasta Improved chopping skills How to make an all-in-one roux Sealing and cooking meat Adapting dishes to make them healthier Marinating Coring and slicing apples / rubbing in method Whipping cream Using food processor How to make a biscuit base Melting method of baking Zesting and squeezing juice from fruit How to make and work with shortcrust pastry	Use and apply their knowledge to make informed choices about their diet and lifestyle. Understand the impact of food choices on their wellbeing. Understand how to adapt their own recipes to make them healthier. Improved practical skills to encourage them to cook independently and apply these skills in the future.	Science- Nutrition and food groups Maths- Calculating calories and portion sizes English- key terminology Citizenship and PSHE- Wellbeing and healthy lifestyles PE- Energy balance

DESIGN TECHNOLOGY / FOOD PREPARATION & NUTRITION **YEAR 9**

	Topic	Knowledge What will students know by the end of this unit?	Skills What skills will students have developed by the end of this unit?	Big Idea What are the essential ideas which students could not leave school without?	Cross Curricular What links to other subjects / enrichment might be made?
D&T 1	Biometric lighting (Focus on material experimentation)	How to explore a context through mind mapping and class discussion. How to explore and attempt to solve real life problems through design. How to gather and use primary research to inspire designing. How to analyse existing products using the ACCESS FM acronym, explore the work of other designers and deconstruct products to influence their own designing. How biomimicry can be used to solve design problems and inspire designing. How to profile a customer and consider their needs and wants. How to design creatively using collage How to use machinery including the scroll saws, belt sander, pillar drill and hand drill safely and for the appropriate task. How to use CAD to communicate their designs (both 2D and 3D). How to experiment with different materials and create samples. How to use a variety of materials to create a functioning prototype. How to complete independent research How the iterative design process works. How to use a 3D printer and laser cutter. How to solder a simple circuit.	Independent research CAD Collage used for designing Accurate cutting, shaping and finishing of materials 3D printing and laser cutting Time management Electrical soldering Sample making	How to solve problems and work through them in a logical manner. Accuracy and precision when making. Exploring real life problems and social issues. Taking risks and being experimental.	Computing- Designing using CAD Art- Collage to create design ideas Maths- Measuring Citizenship- Considering and identifying real life problems and social issues. Physics- Soldering circuit board with electrical components.
D&T 2	Printed pyjamas (Focus on surface design)	How to explore the work of fashion designers, specifically Yinka Ilori and apply their inspiration, techniques and ethos into their own work. How to experiment with a range of different surface design techniques Know the core textiles terminology Understand tolerances in manufacture. Be able to use the sewing machine and overlockers to create seams. Understand how a sewing pattern is used How to create a plan of manufacture for their design work. How to block print onto textiles. How to create geometric patterns in the style of Yinka Ilori.	Independent research Creative designing and presentation Experimentation and sample making Sewing machine skills Overlocking skills Hand sewing skills Pattern cutting skills Further Tech soft skills Understanding of pattern repeats	An understanding of garment manufacture in industry An understanding of how to develop a product through analysis, redesign and prototyping Design drawing skills	Art- Experimentation with textiles and studying fashion designers citizenship and geography- Considering the environmental and social impact of fashion
Food Prep 1	Food choice and food science	The origin of dishes from a variety of countries. Explain the process of gelatinisation. What a staple food is. Explain how chemical, biological and physical raising agents are used in cooking and why they produce well risen baked goods. Understand the correct conditions required for raising agents to be successful. Know how a dough is made. Understand the term 'food provenance' and 'food choice'.	How to make a dough and use to make different types of bread – pizza base, soda bread, chapatis How to prepare and cook potatoes How to cook and use rice How to use puff pastry as a pie lid How to make a blended sauce – sweet and sour How to make traditional roux / veloute – pie filling Advanced chopping skills How to make a batter	Consideration of food provenance and linking it to their own culture, religion and traditions. Understand the functional and chemical properties of some of the ingredients in order to use them more successfully.	Science- Gelatinisation and raising agents English- Key terminology MFL- Food provenance