CURRICULUM MAP (Long term plan)

SUBJECT: DT Rotation **YEAR GROUP: 8**

	Cycle 1 **FOOD AND NUTRITION (FCK)**	**Cycle 2** **GRAPHICS (WFY)**	**Cycle 3** **RESISTANT MATERIALS (IKM)**
Substantive knowledge – Essential knowledge & conceptual understanding of the National Curriculum	The importance of energy balance and the implications of dietary excess or deficiency, e.g. malnutrition, maintenance of a healthy weight. How to use nutrition information and allergy advice panels on food labels to help make informed food choices. How to use a broader range of preparation techniques and methods when cooking, e.g. stir-frying, steaming, blending. How to modify recipes and cook dishes that promote current healthy eating messages. The principles of cleaning, preventing cross-contamination, chilling, cooking food thoroughly and reheating food until it is steaming hot.	**DESIGNING** Understanding contexts, users and purposes. Generating, developing, modelling and communicating ideas. **MAKING** Planning. Practical skills and techniques. **EVALUATING** Own ideas and products. Existing Products. **Research, Design, Make and Evaluate a Point of Sale Display Stand.** Introduction to DT in Year 8 and Graphics Project. Health and Safety lesson. Research: Design Brief and Client Profile Research: Product Analysis Theory: CAD/CAM & Laser Cutter & Design Specification Demonstration: Laser Cutter & 2D Design Tutorial Design: Final Design Idea & Isometric Drawing Design: Modelling of POS Display Practical: Use of 2D Design to create POS display Practical: Use of laser cutter to cut-out display Practical: Assemble display & create POS graphics	**Designing** Solving a design problem Developing a design specification with a wider range of requirements and use it to inform designing Use of annotated sketches to develop and communicate ideas Consider anthropometrics and ergonomics in their design generation Use CAD to model, develop and present ideas Advantages of CAD/CAM on modern designing and manufacturing Researching pewter casting **Planning** Creating a production/manufacturing plan Selecting appropriate specialist techniques, processes, tools and equipment **Evaluating** Relate the work of famous designers to their own designing Use their specification to evaluate their design work Evaluate existing products against relevant criteria Develop knowledge of the term cradle to grave and life cycle analysis Positive and negative impacts of existing products **Technical Knowledge** Classifying metals Physical properties of metals Incorporate maths learning in designing and making

		Practical: Print & glue graphics to POS display stand Evaluation: Overall evaluation of graphics project Poster/Advertising campaign for POS display Create a new logo for your company	Setting up equipment correctly
Disciplinary knowledge - what skills are practiced?	Research: Researching where their ingredients come from, if the recipe matches dietary requirements, costings and many more. Design: Use their research knowledge to select (design) their practical based on equipment available and the success criteria. Make: Completing their practical work to a set success criteria. Evaluate: Evaluate their practical dish through taste testing and completing an evaluation. Evaluate theory knowledge through successful completion of EOT test.	Research Students practise a wide range of research skills - creating a mood board, researching existing POS products and evaluating existing products. Design Students learn to use 2D Design (CAD) and key elements to create their own design for their POS display stand. Including drawing shapes, inserting images, vectorising images and measuring their design. Make Students use 2D design and laser cutter (CAM) to make a POS display stand. Focus on assembly of the product using hot glue guns. Graphic design using laminating. Evaluate Students evaluate theory and practical skills.	A range of focussed researching tasks that includes researching the life, work and influence of a famous British designer (Charles Rennie Mackintosh, materials and manufacturing processes Sketching a range of design ideas themed on the work of Charles Rennie Mackintosh Clearly annotating ideas with relevant information Designing an accurate mould for pewter casting on CAD software (Techsoft 2D Design) within set constraints How to correctly and safely cast and finish a piece of pewter jewellery using specialist machinery and hand tools Measuring, marking out and finishing material accurately Follow procedures for safety and understand the process of risk assessment Using a broad range of manufacturing techniques including handcraft skills and machinery to manufacture products precisely Evaluating and testing completed product against set criteria Use of ICT to present work and carry out research tasks
Key questions (What is the learning about?)	Can I explain the layout of the food room and to recognise, name and locate the tools and equipment in it? Can I describe energy, explain why it is needed and how the level of need changes throughout the human lifespan?	Can I create my own design brief and consider the clients' needs? Can I analyse an existing point of sale display stand? Can I describe what CAD/CAM is and how it will be used in the Graphics Project? Can I understand how CAD/CAM and the laser cutter work?	Can I explain the life and work of Charles Rennie Mackintosh? Can I Explain Pewter and Pewter Casting? Can I Explain the Brazing Hearth? Can I Use ACCESSFM to Analyse Existing Products? Can I write a product design specification? Can I create a range of design ideas themed on Charles Rennie Mackintosh products?

	Can I list the sources, types and functions of protein in the diet? Can I name the macronutrients, some vitamins and minerals as well as their sources in the diet? Can I identify and explain the factors that affect individual food choice whilst investigating the dietary needs of young people? Can I complete a formative assessment to demonstrate my theory knowledge within Food and Nutrition? Can I complete a range of practicals utilising key skills from GCSE Food and Nutrition courses?	Can I use my design idea to begin to sketch a final isometric design? Can I use my final design idea to create a basic model of the POS Display Stand? Can I use my existing knowledge on 2D Design to create a POS Display Stand? Can I successfully cut-out the design onto foam board using the laser cutter? Can I successfully assemble my final 2D template to create the POS Display Stand? Can I use key design features to add colour and branding to my POS Display Stand? Can I successfully evaluate my completed POS Display Stand?	Can I develop my design ideas? Can I use CAD to create my mould design? Can I use cast my product using pewter casting? Can I enhance the finish on my casting? Can I test and evaluate my pewter cast jewellery? Can I demonstrate the knowledge I have acquired from this design and make project?
Assessment	Live marking in both theory and practical lessons. EOT test- Exam style paper.	Baseline Test - all students assessed at the start of Year 8 - test relates to all aspects of DT rotation. Live Marking - Theory and Practical, misconceptions and adaptations addressed during the lesson EOT Test – GCSE exam style question	Baseline Test - all students assessed at the start of Year 8. Test relates to aspects of DT covered in KS2 and Year 7. Live Marking - Theory and practical, misconceptions and adaptations addressed during the lesson EOT Test – includes a GCSE exam style question. Language used is similar to DT exam paper language.
Literacy (L),**Numeracy** (N), **Oracy** (O) **opportunities**	Literacy- Reading instructions Numeracy- Measuring ingredients Oracy- Vocalising ideas and alterations	Literacy- Reading instructions Numeracy- Measuring components Oracy- Vocalising ideas and alterations	**Literacy** Written work during tasks such as analysis of existing products, research tasks and concept annotation Use of technical vocabulary including ferrous metals, non-ferrous metals, alloys, pewter, casting, organic inspired flowing lines, curving linear forms, strong lines, elongated forms. **Numeracy** Construction and dimensioning of drawings. Measuring and marking out during practical stages. Timing of heating/cooling processes. Melting temperatures of metal such as pewter

			Possible discussions of traditional numeric control and computer numeric control (CNC) systems. **Oracy** Vocalising ideas (class feedback and small group discussions) and alterations
Cross Curricular Opportunities	Maths- Weighing and measuring accurately English- Reading recipes and comparing language used Geography- Food provenance RE- Religious and moral views Citizenship- Healthy eating and dietary choices PE- Exercise and energy balance Science- Functions of ingredients.	Maths - dimensions and scaling of designs English - exam style questions for EOT test from past GCSE papers Geography - recycling and the environment Food - Healthy Eating History - History of design movements Art - Design based work - sketching and annotating	Maths – Use of dimensioning, marking and timing. Art – Illustration, design history, architecture. ICT – Research techniques, CAD/CAM. History – History of design (links to Asian, Anglo-Saxon, Celtic, Norman and Viking Art works). Science – Metallurgy, heating of metals.
Super Curriculum (personal development)	Various seasonal competitions Cook's Cook of the Month Food club? Support with STEM/Science week Healthy Eating Week	DT Club - supporting students Future trip to Design Museum Designer of the month Link to STEM days in school	Links with STEM days in school Workshop(s) run by university lecturer Designer of the month External design competitions (Design Ventura) DT Club Subject ambassadors
Careers	HT1 Chef de partie How to become a chef: Isabel's story - BBC Bitesize HT2 Social media chef How to become a social media chef: Gaz's story - BBC Bitesize	HT1 Costume designer How to become a costume designer for Fantastic Beasts: Colleen's story - BBC Bitesize HT2 Sound engineer How to become a sound engineer: Raphael's story - BBC Bitesize	HT1 Handbag designer How to become a handbag designer: Sophie's story - BBC Bitesize HT2 structural engineer Structural engineer: Why I love my green career - The Regenerators - BBC Bitesize
Equality and Diversity Gender Disability Religion Race Sexuality	Diverse representation used with slides presented to pupils. Project is not gender biased/gender themed (traditionally DT seen as a subject for male pupils) Mutual respect for all modelled by teacher and expected from pupils Equal Engineers	Diverse representation used with slides presented to pupils. Project is not gender biased/gender themed (traditionally DT seen as a subject for male pupils) Mutual respect for all modelled by teacher and expected from pupils Why Diversity is Key to The Future of Engineering - UC Riverside	Diverse representation used with slides presented to pupils. Project is not gender biased/gender themed (traditionally DT seen as a subject for male pupils) Mutual respect for all modelled by teacher and expected from pupils IN DEPTH: How can a more diverse workforce benefit the UK catering equipment sector?

Local Community Links			
British Values Democracy The rule of Law Individual Liberty Mutual Respect and Tolerance of others SMSC Character Education	Children at our school are asked for their views about DT lessons and feedback is welcomed by both the staff and the subject lead. This is often in the form of a pupil voice questionnaire. Children work together to support each other in lessons and children that are more able can be given the opportunity to lead with their own examples of their work. Children take turns both in speech and practically with others. Children understand that it is not always possible or right to have their own way and understand the value of compromise. Children must take the views and opinions of others into account but still have the right to make their own choices. Children follow general class and school rules during their DT lessons. Children understand the importance of safety rules when using tools. They are taught the specific skills within the subject allowing them to develop their skills in following the 'rules' of DT. Children also understand and accept that if these rules are not followed that there are consequences to this. Children are encouraged to develop their own self knowledge through our creative subjects such as DT. Children are taught that DT is a very subjective and personal subject which provides an opportunity to express themselves. The children are encouraged to make decisions with their own design choices, style and sometimes media choice. Children are expected to take responsibility for all of the equipment used when working in DT. Children understand that it is important to listen to others but they make their own ideas and design choices in D.T. Children accept that others ideas may not be the same as their own. Children understand that many great design ideas originate from other cultures. When completing the food and nutrition units, food from different cultures are discussed as well as food that is accepted in different faiths. Children listen carefully and are reminded to treat each other equally and with respect regardless of abilities. Children are able to take turns during discussions to resolve difficulties or make decisions. Children are given many opportunities to critique each other's work in a positive and constructive manner whilst showing respect for the opinions and beliefs of their peers which may differ from their own.		