

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)
<p>Substantive knowledge – Essential knowledge & conceptual understanding of the National Curriculum</p>	<p>The importance of energy balance and the implications of dietary excess or deficiency, e.g. malnutrition, maintenance of a healthy weight.</p> <p>How to use nutrition information and allergy advice panels on food labels to help make informed food choices.</p> <p>How to use a broader range of preparation techniques and methods when cooking, e.g. stir-frying, steaming, blending.</p> <p>How to modify recipes and cook dishes that promote current healthy eating messages.</p> <p>The principles of cleaning, preventing cross-contamination, chilling, cooking food thoroughly and reheating food until it is steaming hot.</p>	<p>DESIGNING Understanding contexts, users and purposes. Generating, developing, modelling and communicating ideas.</p> <p>MAKING Planning. Practical skills and techniques.</p> <p>EVALUATING Own ideas and products. Existing Products.</p> <p>Research, Design, Make and Evaluate a Point of Sale Display Stand.</p> <p>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</p>	<p>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</p> <p>Planning Creating a production/manufacturing plan Selecting appropriate specialist techniques, processes, tools and equipment</p> <p>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</p>

		<p>Practical: Use of 2D Design to create POS display</p> <p>Practical: Use of laser cutter to cut-out display</p> <p>Practical: Assemble display & create POS graphics</p> <p>Practical: Print & glue graphics to POS display stand</p> <p>Evaluation: Overall evaluation of graphics project</p> <p>Poster/Advertising campaign for POS display</p> <p>Create a new logo for your company</p>	<p>Technical Knowledge</p> <p>Classifying metals</p> <p>Physical properties of metals</p> <p>Incorporate maths learning in designing and making</p> <p>Setting up equipment correctly</p>
<p>Disciplinary knowledge - what skills are practiced?</p>	<p>Research: Researching where their ingredients come from, if the recipe matches dietary requirements, costings and many more.</p> <p>Design: Use their research knowledge to select (design) their practical based on equipment available and the success criteria.</p> <p>Make: Completing their practical work to a set success criteria.</p> <p>Evaluate: Evaluate their practical dish through taste testing and completing an evaluation. Evaluate theory knowledge through successful completion of EOT test.</p>	<p>Research Students practise a wide range of research skills - creating a mood board, researching existing POS products and evaluating existing products.</p> <p>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.</p> <p>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.</p> <p>Evaluate Students evaluate theory and practical skills.</p>	<p>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</p> <p>Sketching a range of design ideas themed on the work of Charles Rennie Mackintosh</p> <p>Clearly annotating ideas with relevant information</p> <p>Designing an accurate mould for pewter casting on CAD software (Techsoft 2D Design) within set constraints</p> <p>How to correctly and safely cast and finish a piece of pewter jewellery using specialist machinery and hand tools</p> <p>Measuring, marking out and finishing material accurately</p> <p>Follow procedures for safety and understand the process of risk assessment</p>

			<p>Using a broad range of manufacturing techniques including handcraft skills and machinery to manufacture products precisely</p> <p>Evaluating and testing completed product against set criteria</p> <p>Use of ICT to present work and carry out research tasks</p>
<p>Key questions (What is the learning about?)</p>	<p>Can I explain the layout of the food room and to recognise, name and locate the tools and equipment in it?</p> <p>Can I describe energy, explain why it is needed and how the level of need changes throughout the human lifespan?</p> <p>Can I list the sources, types and functions of protein in the diet?</p> <p>Can I name the macronutrients, some vitamins and minerals as well as their sources in the diet?</p> <p>Can I identify and explain the factors that affect individual food choice whilst investigating the dietary needs of young people?</p> <p>Can I complete a formative assessment to demonstrate my theory knowledge within Food and Nutrition?</p>	<p>Can I create my own design brief and consider the clients' needs?</p> <p>Can I analyse an existing point of sale display stand?</p> <p>Can I describe what CAD/CAM is and how it will be used in the Graphics Project?</p> <p>Can I understand how CAD/CAM and the laser cutter work?</p> <p>Can I use my design idea to begin to sketch a final isometric design?</p> <p>Can I use my final design idea to create a basic model of the POS Display Stand?</p> <p>Can I use my existing knowledge on 2D Design to create a POS Display Stand?</p> <p>Can I successfully cut-out the design onto foam board using the laser cutter?</p>	<p>Can I explain the life and work of Charles Rennie Mackintosh?</p> <p>Can I Explain Pewter and Pewter Casting?</p> <p>Can I Explain the Brazing Hearth?</p> <p>Can I Use ACCESSFM to Analyse Existing Products?</p> <p>Can I write a product design specification?</p> <p>Can I create a range of design ideas themed on Charles Rennie Mackintosh products?</p> <p>Can I develop my design ideas?</p> <p>Can I use CAD to create my mould design?</p> <p>Can I use cast my product using pewter casting?</p> <p>Can I enhance the finish on my casting?</p> <p>Can I test and evaluate my pewter cast jewellery?</p>

	<p>Can I complete a range of practicals utilising key skills from GCSE Food and Nutrition courses?</p>	<p>Can I successfully assemble my final 2D template to create the POS Display Stand?</p> <p>Can I use key design features to add colour and branding to my POS Display Stand?</p> <p>Can I successfully evaluate my completed POS Display Stand?</p>	<p>Can I demonstrate the knowledge I have acquired from this design and make project?</p>
Assessment	<p>Live marking in both theory and practical lessons. EOT test- Exam style paper.</p>	<p>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</p>	<p>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.</p>
Literacy (L), Numeracy (N), Oracy (O) opportunities	<p>Literacy- Reading instructions Numeracy- Measuring ingredients Oracy- Vocalising ideas and alterations</p>	<p>Literacy- Reading instructions Numeracy- Measuring components Oracy- Vocalising ideas and alterations</p>	<p>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.</p> <p>Numeracy Construction and dimensioning of drawings. Measuring and marking out during practical stages. Timing of heating/cooling processes.</p>

			<p>Melting temperatures of metal such as pewter Possible discussions of traditional numeric control and computer numeric control (CNC) systems.</p> <p>Oracy Vocalising ideas (class feedback and small group discussions) and alterations</p>
Cross Curricular Opportunities	<p>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.</p>	<p>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</p>	<p>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.</p>
SMSC / Character/Careers/Cultural Capital (personal development)	<p>Social- Teamwork and working together for one goal. Moral- Educate students on various moral ideas in Food such as veganism. Spiritual- Look at different religions, how this effects follower’s diets and why. Culture- Food from different cultures based on the food that is available in that region. Character/Careers- Career options and further study opportunities within the subject.</p>	<p>Social - group work and presentations where appropriate, peer assessment of work. Peer to peer support in practical lessons Moral - to educate students on using responsible products and relate to the 6 R’s. Culture - students to research existing products from around the world. Character/Careers- Career options and further study opportunities within the subject</p>	<p>Social – teamworking, supporting peers, following rules (within a workshop), mutual respect and tolerance for the views/work/ideas of others (peers)</p> <p>Moral – the impact the ethics, beliefs and values of designers have on their design. To develop an awareness of the duty designers, have on developing and designing environmentally friendly and sustainable products. The impact of mining for metal ore on the environment and climate. The importance and relevance of the 6Rs. The importance of becoming responsible consumers.</p>

			<p>Spiritual – the influence of world cultures and nature on designers from the past</p> <p>Culture – the influence of famous designers from the past on modern design. An understanding of key manufacturing processes from the past, still used today. Encouraging students to reflect on ingenious products and inventions, the diversity of materials and ways in which design technology can improve the quality of life.</p> <p>Character/Careers Developing key (transferable) characteristics of resilience, problem solving, patience, resourcefulness and being innovative</p>
Equality and Diversity	Equal representation on displays and resources as well as looking at a variety of recipes from different religions or regions.	Diverse representation used with slides presented to students.	<p>Diverse representation used with slides presented to students.</p> <p>Mutual respect for all modelled by teacher and expected from students</p> <p>Looking cultures from around the world and their impact/influence upon a famous British designer.</p>
Super Curriculum (personal development)	<p>Various seasonal competitions</p> <p>Cook's Cook of the Month</p> <p>Food club?</p> <p>Support with STEM/Science week</p> <p>Healthy Eating Week</p>	<p>DT Club - supporting students</p> <p>Future trip to Design Museum</p> <p>Designer of the month</p> <p>Link to STEM days in school</p>	<p>Links with STEM days in school</p> <p>Workshop(s) run by university lecturer</p> <p>Designer of the month</p> <p>External design competitions (Design Ventura)</p> <p>DT Club</p> <p>Subject ambassadors</p>