



CURRICULUM MAP (Long term plan)

SUBJECT: DT Rotation

YEAR GROUP: 7

	Cycle 1 FOOD AND NUTRITION (FCK)	Cycle 2 GRAPHICS (WFY)	Cycle 3 RESISTANT MATERIALS (IKM)
<p>Knowledge Substantive - knowledge & conceptual understanding of the National Curriculum</p>	<p>Gain an understanding of key theory within the subject as well as completing a range of practicals tailored to those required to excel in GCSE courses.</p> <p>The importance of a healthy and varied diet as depicted in the Eatwell Guide and eight tips for healthy eating.</p> <p>That food provides energy and nutrients in different amounts; that they have important functions in the body; and that people require different amounts during their life.</p> <p>How to taste and cook a broader range of ingredients and healthy recipes, accounting for a range of needs, wants and values.</p> <p>How to actively minimise food waste such as composting fruit and vegetable peelings and recycling food packaging.</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 an acrylic mobile phone holder.</p> <p>Product Analysis Gathering Research Analysing Research Findings Product Design Specification Design Concepts Sketch Modelling Formative Assessment Introduction to Polymers Cutting and Shaping Thermoplastic Manufacturing Testing and Evaluation</p>	<p>Designing Solving a design problem Developing a design specification with a range of requirements and use it to inform designing Use CAD to develop and present ideas Advantages of CAD/CAM on modern designing and manufacturing Researching vacuum forming</p> <p>Making Selecting appropriate specialist techniques, processes, tools and equipment Follow visual and written instructions for manufacturing</p> <p>Evaluating Use their specification to evaluate their design work Evaluate existing products against relevant criteria Positive and negative impacts of existing products</p> <p>Technical Knowledge Classifying polymer groups Physical properties of plastics Setting up equipment correctly</p>
<p>Skills Disciplinary - what skills can be linked to the unit complement</p>	<p>Research: Researching where their ingredients come from, if the</p>	<p>Research Students practise a wide range of research skills - creating a mood</p>	<p>A range of focussed researching tasks that includes researching materials,</p>

	<p>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>board, survey, researching existing mobile phone holder 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 acrylic mobile phone 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 an acrylic mobile phone holder stand. Use of the strip heater to bend the stand into shape.</p> <p>Evaluate Students evaluate theory and practical skills.</p>	<p>manufacturing processes and looking at existing products</p> <p>How to correctly and safely vacuum form a moulding and then finish it to a degree of accuracy using specialist machinery and hand tools</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 the principles and nutrients of The Eatwell Guide and relate this to the diet?</p> <p>Can I explain where starchy carbohydrates come from and why they are important in the diet?</p> <p>Can I explain where beans, pulses, fish, eggs, meat and</p>	<p>Can I research existing products to create a mood board and analyse?</p> <p>Can I create a survey and analyse my findings?</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 successfully cut-out the design acrylic using the laser cutter?</p>	<p>Can I show safe understanding of workshop machines I'll use?</p> <p>Can I select a user for my project?</p> <p>Can I use ACCESSFM to analyse existing products?</p> <p>Can I explain what vacuum forming is and how it works?</p> <p>Can I explain the environmental impact of plastic manufacturing?</p> <p>Can I write a specification for my packaging project?</p>

	<p>other proteins come from as well as considering moral beliefs like vegetarianism and explain how their dietary needs are met?</p> <p>Can I perform a simple product analysis, including an overview of the functional properties of the ingredients, and sensory evaluation?</p> <p>To investigate some of the factors that can affect food choice, looking at nutritional requirements for teenagers and plan a suitable main meal dish?</p>	<p>Can I use the strip heater to bend and manipulate the acrylic to form a mobile phone holder?</p> <p>Can I evaluate my final product?</p>	<p>Can I vacuum form my chocolate tray?</p> <p>Can I finish my vacuum formed tray to a good degree of accuracy?</p> <p>Can I design ideas for my chocolate packaging using CAD?</p> <p>Can I assemble the net of my packaging?</p> <p>Can I test and evaluate my tray and packaging?</p> <p>Can I demonstrate the knowledge I have acquired from this design and make project?</p>
<p>Assessment</p>	<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 - 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>
<p>Literacy (L), Numeracy (N), Oracy (O) opportunities</p>	<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 project specific technical vocabulary including thermoplastics, thermosetting, thermoforming, vacuum forming, CAD</p> <p>Numeracy DT specific numeracy tasks/activities Construction and dimensioning of nets</p>

			<p>Measuring and marking out during practical stages. Timing of heating/cooling processes.</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, how and why nutritional needs change throughout the life stages PE- Exercise and energy balance Science- Functions of ingredients.</p>	<p>Maths - percentages, graphs, dimensions and scaling of designs English - exam style questions for EOT test from past GCSE papers Geography - recycling and the environment History - History of design movements Art - Design based work - sketching and annotating</p>	<p>Maths – Use of dimensioning, measuring, marking, net construction and timing. Art – Illustration, freehand sketching and rendering Geography – impact of plastics upon the environment ICT – Research techniques, CAD/CAM. Science – Polymers and atmospheric pressure</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 – To develop an awareness of the duty designers have on developing and designing environmentally friendly and sustainable products. The impact of plastic manufacturing on the environment and climate. The importance and relevance of the 6Rs. The importance of becoming responsible consumers.</p> <p>Spiritual – Encouraging students to exercise imagination, inspiration, intuition and insight through creativity and risk</p>

			<p>taking. Instilling a sense of awe, wonder and mystery through tasks such as analysing existing products and using never before seen manufacturing techniques and equipment such as vacuum forming and scroll saws.</p> <p>Culture – students respect the ideas, views and opinions of their peers when designs are generated. 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.	Diverse representation used with slides presented to students. Mutual respect for all modelled by teacher and expected from students through their conduct and actions in the workshop.
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 DT Club Subject ambassadors