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)**
Knowledge **Substantive** - knowledge & conceptual understanding of the National Curriculum	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. The importance of a healthy and varied diet as depicted in the Eatwell Guide and eight tips for healthy eating. 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. How to taste and cook a broader range of ingredients and healthy recipes, accounting for a range of needs, wants and values. How to actively minimise food waste such as composting fruit and vegetable peelings and recycling food packaging.	**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 an acrylic mobile phone holder.** 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	**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 **Making** Selecting appropriate specialist techniques, processes, tools and equipment Follow visual and written instructions for manufacturing **Evaluating** Use their specification to evaluate their design work Evaluate existing products against relevant criteria Positive and negative impacts of existing products **Technical Knowledge** Classifying polymer groups Physical properties of plastics Setting up equipment correctly
Skills **Disciplinary** - what skills can be linked to the unit complement	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.	Research Students practise a wide range of research skills - creating a mood board, survey, researching existing mobile phone holder products and evaluating existing products. Design Students learn to use 2D Design (CAD) and key elements to create their own design for their acrylic mobile phone	A range of focussed researching tasks that includes researching materials, manufacturing processes and looking at existing products How to correctly and safely vacuum form a moulding and then finish it to a degree of accuracy using specialist machinery and hand tools Follow procedures for safety and understand the process of risk assessment

	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.	stand. Including drawing shapes, inserting images, vectorising images and measuring their design. 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. Evaluate Students evaluate theory and practical skills.	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 the principles and nutrients of The Eatwell Guide and relate this to the diet? Can I explain where starchy carbohydrates come from and why they are important in the diet? Can I explain where beans, pulses, fish, eggs, meat and other proteins come from as well as taking into account moral beliefs like vegetarianism and explain how their dietary needs are met? Can I perform a simple product analysis, including an overview of the functional properties of the ingredients, and sensory evaluation? To investigate some of the factors that can affect food choice, looking at nutritional requirements for teenagers and plan a suitable main meal dish?	Can I research existing products to create a mood board and analyse? Can I create a survey and analyse my findings? 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 successfully cut-out the design acrylic using the laser cutter? Can I use the strip heater to bend and manipulate the acrylic to form a mobile phone holder? Can I evaluate my final product?	Can I show safe understanding of workshop machines I'll use? Can I select a user for my project? Can I use ACCESSFM to analyse existing products? Can I explain what vacuum forming is and how it works? Can I explain the environmental impact of plastic manufacturing? Can I write a specification for my packaging project? Can I vacuum form my chocolate tray? Can I finish my vacuum formed tray to a good degree of accuracy? Can I design ideas for my chocolate packaging using CAD? Can I assemble the net of my packaging? Can I test and evaluate my tray and packaging? 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.	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 - exam style question	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 project specific technical vocabulary including thermoplastics, thermosetting, thermoforming, vacuum forming, CAD **Numeracy** DT specific numeracy tasks/activities Construction and dimensioning of nets Measuring and marking out during practical stages. Timing of heating/cooling processes. **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 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.	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	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
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

Careers	HT 1 Chef How to become a chef - BBC Bitesize HT 2 Food Vlogger How do I become a chef and food vlogger? - BBC Bitesize	HT1 Graphic designer I designed the graphic props for the Wizarding World - BBC Bitesize HT2 Garden designer Garden designer: Why I love my green career - The Regenerators - BBC Bitesize	HT1 Civil engineering technician How to become a civil engineering technician: Sally's story - BBC Bitesize HT2 Construction manager How to become a construction manager: Abdullah's story - 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.		