Curriculum Knowledge Map

CHS Computing and Technology 2024/2025

Design and Technology & Food Preparation and Nutrition

Key stage 3: Rotation model

	Design and Technology	Food Preparation and Nutrition	Computing
Year 7	2 hours per week 10 weeks	2 hours per week 10 weeks	2 hours per week 20 weeks
Year 8	2 hours per week 10 weeks	2 hours per week 10 weeks	2 hours per week 20 weeks
Year 9	2 hours per week 20 week rotation	2 hours per week 20 week rotation	1 hour per week 40 weeks

Year 7

Year 7	Rotation			
	Materials and their working properties		Balanced Diets	
	Weeks 1 - 5	Weeks 6 - 10	Weeks 1 - 5	Weeks 6 - 10
Declarative *What should they know?*	**Workshop safety** • Students should know how to be in the workshop safely. • Students should know basic health and safety rules of the D&T rooms. **Timbers** • Students should know about the Sources and origins of timbers. • Students should know about the Impact of deforestation.	**2D and 3D design** • The role of a graphic designer as well as the skills, qualities, and attributes they need to possess to be successful. • The differences between 2-dimensional design, and 3-dimensional design and how these are used for varying different design and product manufacture.	**Nutrition** • Students should know about nutrition and energy balance in the diet. • Students know the principles of the Eatwell Guide. **Food hygiene and safety** • Students should know personal hygiene and its importance in a food preparation environment.	**Fats** • Students should understand the purpose of fats in the diet. • Students should understand the difference between saturated and unsaturated fats. • Students should know how fats can lead to health complications such as increased cholesterol and obesity. **Food Practical – Nutritious Pasta Sauce**

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	• Students should know How to ensure sustainability timbers. • Students should know about the Difference between hardwoods, soft woods, and manufactured boards. **Polymers** • Students should know about the Sources and origins of Polymers. • Students should know about the Impact of oceanic pollution. • Students should know the Differences between Thermoforming plastics and thermosetting. • Students should know about the Positive and negative impacts of plastics. • Students should know What the recycling symbol on plastics means. **DT Practical – Pivot mirror** • Students should know how to use a range of saws in different materials. • Students should understand how to join timber together using wood joints. • Students should understand how to join polymers and timbers together. • Students should know how to apply different finishing techniques.	• Students should know that maths and numeracy skills are a large factor in successful technical design, for example when drawing nets/surface developments to ensure accuracy and quality control in design. • The key principles of 3-dimensional design when producing isometric and perspective drawings. **Colour theory** • Students should know what the colour wheel is and how it is used to differentiate between colours on the spectrum (primary, secondary and tertiary). • Students should know the use of complimentary colours, tint, hue, and shade in colour to vary colour balance. • Students should know about how the selection of colour can be based upon its emotive language, a key consideration for designers when choosing colour schemes for a project. • Students should know how pattern can be generated and its importance as a key factor in design generation. Colour blocking and gradients are commonly used to break up blank space in designs.	• Students should know cross contamination and how this might occur, and methods used to prevent it. **Food Practical – Quesadilla** • Students should know how to prepare ingredients using a knife (Skill 2/3). • Students should understand how to prepare vegetables using the bridge and claw method. **Carbohydrates** • Students should know what carbohydrates are and why we need carbohydrates in our diet. • Students should understand carbohydrates as a starch-based ingredient and what constitutes a complex carbohydrate. • Students should understand carbohydrates as a sugar and how over consumption can lead to tooth decay and type 2 diabetes. • Students should understand how carbohydrates can provide us with dietary fibre to support our digestive system. **Food Practical – High Fibre scones/Falafel** • Students should know how to weigh and measure ingredients (Skill 1). • Students should understand how to increase dietary fibre in the diet.	• Students should know how to prepare ingredients using a knife (Skill 2/3). • Students should understand how to use the cooker when preparing dishes (Skill 5) • Students should understand how to combine ingredients including spices to make a sauce - reduction method (Skill 8). • Students should understand how to safely use a hand blender. • Students should be able to apply the healthy eating guidelines and the EWG to a balanced meal. • Students should have a basic understanding on minimising food waste and how to use up leftovers. **Protein** • Students should understand the function of protein in the diet. • Students should understand how proteins support healthy body growth including the repair of body tissue and supporting healthy muscles and bones. • Students should what foods include proteins and how to include protein in the diet when living a vegetarian or vegan lifestyle. **Food Practical – Chilli/ Vegetable Bean Chilli**

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	Design communication • Students should know what isometric drawing is. • Students should know what rendering is. • Students should know the purpose of annotation.	**Typography and branding** • Students should know about the impact of branding for a company, business website etc. • Students should know about the components of a good logo or brand identity and what makes a good logo, exploring the impact of colour, typography, and imagery. • Students should know about the key characteristics of typography and how this is used in various ways to represent text/words. **Design ideas/generation** • Students should know how to present and structure ideas generation clearly on a page. • Students should know the importance of annotation to describe and what it includes in the design.	• Students should understand methods to bind, shape and form ingredients together (Skill 7). **Food Practical – Caribbean Muffins** • Students should know how to weigh and measure ingredients (Skill 1). • Students should understand how to use the Hob/Oven when cooking dishes (Skill 4). • Reduced sugar recipes – students should understand methods to reduce sugar in the diet using natural sweeteners as a substitute (Skill 7).	• Students should know how to prepare ingredients using a knife (Skill 2/3). • Students should understand how to use the cooker when preparing dishes (Skill 5) • Students should understand how to combine ingredients including spices to make a sauce - reduction method (Skill 8).
Procedural *What should they be able to do?*	**Timbers** • Students should be able to Identify the origin of timber. • Students should be able to Explain timber conversion. • Students should be able to Suggest how to ensure timber product are sustainable. • Students should be able to Explain the role of the FSC. • Students should be able to Identify a range of hardwoods soft woods and manufactured boards.	**2D and 3D design.** • Students should be able to create ideas in 2D to create accurate nets. • Students should be able to present ideas for a net clearly using accuracy and dimensions to support structure. • Students should be able to include tabs appropriately on a design to allow for construction. **Colour theory** • Student should be able to identify colour and its properties based on	During the rotation students will complete a number of practical lessons (some may be omitted due to time); Fruit crumble, apple cake, bread rolls (iced buns), pizza, pasta and sauce, fruit tarts, pastry topped pie and samosas/spring rolls. During these practical's there will be procedural knowledge acquired relating to the application of skills:	During these practical's there will be procedural knowledge acquired relating to the application of skills: **Pasta and Sauce** • Knife Skills (Skill 2) • Preparing fruits and vegetables (Skill 3) • Use of the cooker (Skill 4) • Cooking methods (Skill 6) • Sauce making (Skill 8) **Vegetable Chilli** • Knife Skills (Skill 2)

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	• Students should be able to Describe a hardwood, softwoods properties and potential uses. **Polymers** • Students should be able to Identify the origin of polymers. • Students should be able to How polymers are made. • Students should be able to Identify different types of polymers. • Students should be able to Describe thermosetting and thermoplastic properties and potential uses. • Students should be able to Explain how plastics are commonly used and their impact on the environment. **Design communication** • Students should be able to Use different rending techniques. • Students should be able to Draw in isometric. • Students should be able to Annotate work effectively.	where it appears on the colour wheel. • Students should make suitable colour choices for designs. **Typography and branding** • Students should be able to identify and create ideas for branding and logos knowing the requirements of these (simple, not overly complicated with the inclusion of colour and icons, suitable typography). • Students should be able to create lettering and letter styles relevant to a theme. **Design ideas/generation** • Student should be able to create and design following a brief. • Students should be able to generate ideas for a logo/brand, a surface development and a 3D presentation based on a brief or scenario.	**Quesadilla** • General practical skills – weigh and measure (Skill 1) • Prepare, combine and shape (Skill 7) • Use of the cooker (Skill 4) **Scones** • Rubbing in method (Skill 7) • General practical skills – weigh and measure (Skill 1) • Use of the cooker (Skill 4) **Caribbean muffins** • General practical skills – weigh and measure (Skill 1) • Use of the cooker (Skill 4) • Prepare, combine and shape (Skill 7) • Raising agents (Skill 11)	• Preparing fruits and vegetables (Skill 3) • General practical skills – weigh and measure (Skill 1) • Use of the cooker (Skill 4) • Cooking methods (Skill 6) • Prepare, combine and shape (Skill 7) • Tenderise and Marinade (Skill 9)
Disciplinary Literacy (Tier 3 Vocab)	Tier 3 Disciplinary literacy linked to the unit of study: • Hardwood • Softwood • Grain • Veneer • Properties • Density • Toughness	Tier 3 Disciplinary literacy linked to the unit of study: • Two Dimension • Nets • Shape and Form • Isometric • Perspective • Three Dimension • Angles	Tier 3 Disciplinary literacy linked to the unit of study: • Eatwell guide • Nutrient • Energy, Calories • Portion • Guidelines • Carbohydrates, Fats, Protein • Food spoilage	Tier 3 Disciplinary literacy linked to the unit of study: • Weigh • Measure • Rubbing in method • Fibre • Wholemeal • Fats • Protect

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	• Strength • Function • Aesthetics • Monomer • Polymer • Thermoplastic • Thermosetting • Malleability • Hardness • Electrical conductivity Fibre • Tenon Saw • Hazard • Sandpaper • PPE • File • Rasp • Adhesive • Stock from • Component • Coping saw • Manufactured board • Pine • Larch • Spruce • Deciduous • Ash • Beech • Oak • Mahogany • Birch • MDF • Plywood • Chipboard	• Parallel • Vanishing Point • Horizon Line • Colour • Render • Pattern • Complimentary • Opposite • Pattern • Typography • Letter Style • Fonts • Italic, Bold, Script • Surface Development • Assembly • Graphic	• Contaminated • Cross contamination • Bacteria & Microorganism • Pathogens • Enzymes • Perishable • Food poisoning bacteria • E-Coli • Campylobacteria • Salmonella • Bridge method, Claw method • Consistency • Quality • Food hygiene & Safety • Cross contamination • Starch • Simple & Complex carbohydrates • Weigh and measure • Caramelisation • Coagulation • Raising agent • Vitamins • Fibre	• Insulation • Saturated • Unsaturated • Visible fats • Invisible fats • Cholesterol • Obesity • Excess, Deficiency • Aroma & Taste • Consistency • Preparation • Reduction • Infuse Proteins: • Amino acids (essential and non-essential) • High biological value • Low biological value • Protein alternatives • Kwashiorkor • Protein, Protein alternative • Quality control • Organisation • Time management • Sauce reduction, Simmer • Conduction, Convection

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Assessment	**Key assessment task:** Extended writing assessment impact of polymers on the environment – students will be assessed on SPAG, understanding of environmental concerns, explanation of plastic pollution and sustainability	**Key assessment task:** Design assessment isometric, Students will be assessed, accuracy of isometric projection, quality of rendering techniques, annotation. **Key assessment task:** Progress Test - marked and fed back as part of a Key Assessed piece of work. The assessment will be marked out of 50 and developmental approaches used to improve students' knowledge and understanding. Feedback should use a two star and wish model.	**Key assessment task:** Carbohydrates - marked and fed back as part of a Key Assessed piece of work. Feedback should use a two star and wish model. A Mark should be recorded for a progress statement to be generated. **Key assessment task:** Practical Assessment – feedback should be generated using a 2 star and wish method. Feedback to learners should be based on practical skills and development evidenced in the lessons to support progress in future practical's.	**Key assessment task:** Progress Test - marked and fed back as part of a Key Assessed piece of work. The assessment will be marked out of 50 and developmental approaches used to improve students' knowledge and understanding. Feedback should use a two star and wish model. A feedback workshop should be used to support students in the development of their knowledge and skills in this subject.
Home learning	**Home learning task 1: Timbers and polymer quiz - Pupils will be assessed on their knowledge from the previous lessons focusing on their understanding of the different timbers and polymers, their properties and their uses** **Home learning task 2: Stages of converting materials from their original source - Pupils will be assessed on their knowledge from the previous lessons focusing on how materials (timbers and polymers) are converted from their raw material source into a useful, workable form. This home learning will take the form of an investigation and reading task before pupils are expected to complete stage-by-stage storyboard.** **Home learning task 3: Graphic design quiz - Pupils will be assessed on their knowledge from the previous lessons focusing on graphics, graphic design and how logos are developed. Pupils will be expected to cement knowledge on learning in Graphics and prepare themselves for further lessons on this topic when completing this quiz.**		**Home learning task 1: Preparing to cook - Pupils will be assessed on their knowledge of the healthy eating guidelines and food safety from the previous 2 lessons focusing on what makes a nutritious meal and food hygiene and safety to prepare them for cooking in the following lesson.** **Home learning task 2: Reducing Sugar Recipe adaptation** **Pupils will be assessed on their knowledge from the previous lessons focusing on Carbohydrates and what can happen if you consumer to much sugar. Students will be expected to be able to adapt a recipe to reduce sugar content.** **Home learning task 3: Knowledge Mindmap** **Pupils will be assessed on their knowledge from the previous lessons focusing on the topics that will be tested in the progress test. Students will be given a scaffolded mind map to complete. Students should then use this to support home study in the run up to progress tests.** **Home learning task 4: Pasta**	

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	Home learning task 4: Product investigation using CAFEQUE - Pupils will be assessed on their knowledge from the previous lessons focusing on investigating a product that involves timbers, polymers and graphic design. Pupils will be introduced to CAFEQUE analysis technique via this home learning task and will be able to analyse and evaluate a given product using this technique. **Home learning task 5: Recall mind map - Pupils will be assessed on their knowledge from the previous lessons focusing on consolidating their learning from the previous 10 weeks. Pupils will be expected to use mind maps to support this task as this will be the focus for the whole-school revision strategy for Y7 progress test 1.**	**Pupils will be assessed on their knowledge from the previous lessons focusing on Function of ingredients – students should investigate different types of pasta, their shape, form and properties. Students should complete this as an independent investigation task that requires them to develop research and investigation skills and consider ingredients and their function. Home learning supports knowledge in following lesson looking at carbohydrates and starchy carbohydrates typically consumed.** **Home learning task 5: Knowledge Organiser** **Pupils will be assessed on their knowledge from the whole food rotation. Students will be given a blank knowledge organiser to complete. Students should then use this to support home study in the run up to progress tests if these will be completed in the 2nd rotation/ or used to support with knowledge recall in year 8.**