



Curriculum Map 2021 - 2022 – Design & Technology Department



CONTENT AND SKILLS

Key Stage 3

Please be aware students in D&T at Key Stage 3 follow a rotation of projects, which are delivered in differing orders through the year to allow specialist teaching to be completed. Each project focuses on set skills and develops from one year to the next.

Key Stage 4

Students at Key Stage 4 can choose to follow a GCSE or Level 1 Qualification within the Design & Technology Department. These qualifications include GCSE Design & Technology, GCSE Food Preparation & Nutrition, Level 1 Certificate in Practical Horticulture or Level 1 Certificate in Motor Vehicle Studies (motorcycle pathway).

Project	YEAR 7	YEAR 8	TERM	YEAR 9	YEAR 10	YEAR 11
Project 1 of 3	Yr7 Puppet The main aim of this project is for students to gain skills and knowledge in the safe use of workshop tools and equipment, including H&S awareness and the beginnings in the design process structure. They focus on designing skills, wood and plastics theory, and some formal drawing techniques. Students also work on developing their skills in materials knowledge using our interactive Focus E-Learning software.	Yr8 Thermometer Clock: The aim of this project is to study control and how we can program microcontrollers to control inputs, process information and instruct output information. We will be looking at how we can develop structures using flowcharts and then convert these into a form of programming language, downloading our own developed programs to control a thermometer. We will then develop creative solutions and the use of skills learnt to develop a 3 Dimensional clock for a chosen client market and user group environment. Working to scale, templating, modelling and mathematical calculations to prepare for the GCSE maths content at KS4.	AUTUMN	GCSE Design & Technology In order to make effective design choices students will need a breadth of core technical knowledge and understanding that consists of: New and Emerging Technologies <ul style="list-style-type: none"> • Industry & Enterprise • Sustainability & The Environment • People, Culture and Society • Production Techniques and Systems • Informing Design Decisions Links to: Taking into consideration the ecological and social footprint of materials. Ethical factors and consideration of ecological and social footprint. Assessment: New & Emerging Technologies Assessment Test Paper – 1 hour	GCSE Design & Technology In addition to the core technical principles, all students should develop an in-depth knowledge and understanding of the following specialist technical principles: Common Specialist Technical Principles <ul style="list-style-type: none"> • forces and stresses • Improving Functionality • Ecological and Social Footprint • The 6 R's • Scales of Production Links to: Calculation of material costs. Selection and use of materials considering end of life disposal. Changing the magnitude and direction of forces. Selecting appropriate materials. Understanding of how to choose appropriate energy sources. Ethical factors and the social footprint of materials used in products. Assessment: Common Specialist Technical Principles Assessment Test Paper – 1 hour	GCSE Design & Technology <ul style="list-style-type: none"> • Controlled Assessment 4.4.4.2 Section B: Producing a design brief and specification (10 marks) Based on conclusions from their investigations students will outline design possibilities by producing a design brief and design specification. Students should review both throughout the project. 4.4.4.3 Section C: Generating design ideas (20 marks) Students should explore a range of possible ideas linking to the contextual challenge selected. These design ideas should demonstrate flair and originality and students are encouraged to take risks with their designs. Students may wish to use a variety of techniques to communicate. Students will not be awarded for the quantity of design ideas but how well their ideas address the contextual challenge selected. Students are encouraged to be imaginative in their approach by experimenting with different ideas and possibilities that avoid design fixation. In the highest band students are expected to show some innovation by generating ideas that are different to the work of the majority of their peers or demonstrate new ways of improving existing solutions. Links to: Measurement and marking out of component parts for models. Scaling drawings. A presentation of data; tabulate responses and findings. SI units; identify appropriate commercially available stock forms and select appropriately. Composition of some important alloys; selecting appropriate metal alloys as required. SI units eg accurate use of appropriate tolerances +/- 2mm, resistor tolerance and seam allowance. Assessment: Formal NEA Assessment – Section B and C

<ul style="list-style-type: none"> Design considerations and generating design specifications H&S in the Workshop Joining wooden materials – housing, rub, dowel and bridal joints Use of the vacuum former Use of Hand tools – Tenon saws, coping saws, chisels, marking gauges, tri squares, rules, planes. Machine tools – Sanders, Pillar Drills, Pistol Drills, Vacuum formers, Centre Lathe Isometric Drawing Critical review and evaluation <p>Assessment: 30 minute Formal Assessment and summative booklet and practical assessment.</p>	<ul style="list-style-type: none"> Flowcharts Microcontrollers Design and development of ideas. PIC programing using PICAXE Editor 6. Input, Process, Output Sub routines and main programs Basic electronics inc LED's and Resisters Potential Dividers Kit form Design and generating design specification Assembly of clock modules Practical Geometry Mixed Materials and adhesives CAD (2D design) Assemblies from flat pack Mounting systems Critical review and evaluation Maths in D&T <p>Assessment: 30 minute Formal Assessment and summative booklet and practical assessment.</p>			<p>GCSE Food Preparation & Nutrition Autumn 1 3.2.3.1 Healthy eating guidelines.</p> <ul style="list-style-type: none"> 3.2.3.4 Consequence of poor food choices. 3.2.1 Macronutrients – Protein, Fats & Carbohydrates. DRVs, effects and deficiencies. H/W 5 ingredient challenge ingredients – balanced meal. 3.2.2 Micronutrients – DRVs effects and deficiencies. Fat soluble, water soluble, Antioxidant functions. H/W Fruit pin wheel ingredients. <p>3.5.1.1 Factors affecting food choice: Cost – design a dish for a family of 4 that costs less than £5. Costing out a recipe/portion. H/W Bring ingredients for your dish. Practical: S1 Assessed practical: 5 ingredient challenge. Ingredients provided by school. S1, S7, S10, Pastry making – shortcrust. Fruit pin wheel. Various skills – Low cost meal.</p> <p>Autumn 2 3.7 Food preparation and cooking techniques 3.3.1.1 Why food is cooked & Methods of heat transfer – conduction, convection, radiation. Produce a PPT. Potatoes cooked in different ways & expected outcome. 3.3.2 Protein denaturation: Marinating – adding flavour, moisture to vegetables, meat, fish & alternatives. FPT - Cooking techniques – dry/wet, Deep frying, shallow frying, boiling, steaming, & baking. H/W Bring a chicken. 3.5.1.1 Food styling: Appearance – finishing techniques, garnish. Wording on menus, design & font. Teacake challenge. Practical: FPT: Cooking potatoes – NEA1 task – different heat transfer methods. FPT: 1. Portioning a chicken 2. Chicken - oven baked, shallow fried, boiled, Deep fried – sensory analysis. (S1, S2) Tunnocks Teacake challenge.</p>	<p>GCSE Food Preparation & Nutrition <i>Autumn 1</i> 3.4 Basic Food Hygiene – coloured chopping boards, food storage, cooking temperatures, conditions for bacterial growth. H/W Burger ingredients – testing for readiness assessment: use of a food probe. 3.5.1.1 Factors which influence food choice Sensory Evaluation – Preserved foods v fresh. 3.6.1.2 Food and the environment Responsible farming: Organic, intensive farming. Design a Power point presentation. Visit to the Patch. Design a meal using responsibly farmed produce. H/W Bring ingredients. Practical: Produce a meat dish & test for readiness using the food probe. FPT: Water based – blanching vegetables to destroy enzymes. (S6) Oxidation: Preventing vitamin loss (S2,3,6) Various Skills: Make a dish that uses responsibly farmed ingredients. Photograph packaging as evidence and note the price difference.</p> <p><i>Autumn 2</i> 3.3.1.1 How different cooking techniques affect the nutritional content, taste and texture of food.</p> <ul style="list-style-type: none"> Grilling, frying, baking, boiling, stir-frying, steaming, poaching. FPT- Cooking potatoes. <p>3.3.2 Functional and chemical properties of food Maillard Reaction – cooking meat using different methods. Shallow fry, boil, grill, oven, microwave. H/W Bring ingredients to make a meat dish: Best method chosen as their own practical dish technique FPT: Dextrinization – Scones using different appliances and different methods. Grill, deep fry, oven, microwave. H/W Bring £1 for scones: Best method chosen as their own practical dish technique Practical: FPT: Scones cooked in different areas of the cooker & difference between gas & electric. (S1, S4, S6, S11) Experiment – taste difference of different cooking methods.e.g. potatoes, bread, meat (S6)</p>	<p>GCSE Food Preparation & Nutrition <i>Autumn 1</i> Revision: 3.1:Macro & micronutrients. 3.2:Nutritional needs. Food science recap: Terms to be familiar with: Gelatinisation, caramelisation, maillard reaction, dextrinization.</p> <p>NEA2 Task: Investigate – street food, Foods rich in Iron, or the Dietary Needs of the Elderly. Plan: Find suitable dishes that could be made, analyse the suitability, skills, equipment and finish. Make: Practice a High Level Skill. And evaluate its success.</p> <p><i>Autumn 2</i> Revision: 3.3: Cooking & Heat transfer 3.4: Food spoilage Design 2 suitable dishes and analyse the nutritional composition and their suitability to the task. Skills: Analyse the skills needed to make the dishes, then look at upskilling the products to evidence their full potential. Make: Practise 2 more skills and evaluate their success.</p>
				<p>Level 1 Certificate Motor Vehicle Studies (Motorcycle pathway) Introduction to General Health & Safety</p> <ul style="list-style-type: none"> In this mandatory unit learners will explore the responsibility of the employer and employee and the requirements of basic health and safety legislation. They will identify workshop hazards and basic safety procedures <p>Vehicle Engine Lubrication</p> <ul style="list-style-type: none"> Used engine oils, checking & topping up oil level, types of engine oils, changing engine oil & filter, checking work. <p>Assessment: unit worksheets with unit test</p> <p>Skills: communication skills, use maths and science Correctly, use required PPE, importance of keeping records. Identify codes and grades of lubricants.</p>	<p>Level 1 Certificate Motor Vehicle Studies (Motorcycle pathway) Refresh on General Health & Safety Engine Operating Systems</p> <ul style="list-style-type: none"> Vehicle Spark Ignition Systems Main components of an engine, the four stroke cycle, two stroke cycle, dismantling & reassembling an engine, checking work The main components, removing and replacing ignition systems components, checking ignition timing. <p>Assessment: unit worksheets with unit test Oral, visual, functional, measurements.</p> <p>Skills: identify the main engine components, Engine component removal and fitting techniques.</p>	<p>Level 1 Certificate Motor Vehicle Studies (Motorcycle pathway) Refresh on General Health & Safety Transmission systems</p> <ul style="list-style-type: none"> Gearbox, clutch, final drive, driveline, single / multi plate clutches, rear wheel drive, and torque converter operation. <p>Vehicle steering & suspension systems Major components of the steering systems, rack & pinion, power steering, purpose, springs, torsion bar, leaf springs, coil springs, dampers, struts.</p> <p>Assessment: unit worksheets with unit test Oral, visual, functional, measurements.</p> <p>Skills: identify basic fault-finding, worn and damaged parts. Understand correct tightening procedures</p>

			<p>Level 1 Certificate Practical Horticulture Principles of the maintenance of equipment</p> <ul style="list-style-type: none"> Know how to prepare equipment for maintenance, Know how to undertake maintenance procedures & Know how to work safely <p>Assessment: unit worksheets with unit test. Oral, visual, functional, measurements.</p> <p>Skills: Have an introduction to health and safety in horticulture. Understand the fundamental principles of health and safety law and regulation. Be able to identify, assess and mitigate hazards and risks in the workplace.</p>	<p>Level 1 Certificate Practical Horticulture Understanding organic horticulture</p> <ul style="list-style-type: none"> Know the difference between organic and conventional growing systems, Know organic soil management techniques, Be able to carry out organic soil management techniques, Know organic crop protection techniques & Be able to protect crops using organic techniques <p>Cultivate land by single digging or forking</p> <ul style="list-style-type: none"> Know how to cultivate land by single digging or forking & Be able to cultivate land by single digging or forking <p>Assessment: unit worksheets with unit test. Oral, visual, functional, measurements.</p> <p>Skills: Organic horticulture refers to the art and science of growing vegetables, flowers and fruits by following the various principles of organic gardening that constitutes soil conservation and soil building, pest control and pest management</p>	<p>Level 1 Certificate Practical Horticulture Principles of identifying the presence of, and controlling common pests and diseases</p> <ul style="list-style-type: none"> Know how to identify common pests and diseases, Know how to control common pests and diseases & Know how to work safely <p>Plant selection</p> <ul style="list-style-type: none"> Know the characteristics of plants, Be able to select plants for specific uses and locations & Understand the establishment and maintenance needs of plants <p>Assessment: unit worksheets with unit test. Oral, visual, functional, measurements.</p> <p>Skills: To control weeds and pests. Know how to identify and report the presence of pests, diseases and disorders. How it can spread and what kind of damage it causes.</p>
Project 2 of 3	<p>Yr7 Steady Hand Game:</p> <p>This project speaks for itself. Students will be learning about Health and Safety in the workshop, working with multi materials such as metals and plastics, and also basic electronics and CNC machining. Students will also be going through the design process, including modelling and testing.</p> <ul style="list-style-type: none"> Design considerations and generating design specifications Basic components and identification Making a PCB Circuit diagrams Resistor colour codes CAD (Crocodile clips/2D design) Soldering techniques and components Cold forming simple metal components Critical review and evaluation <p>Assessment: 30 minute Formal Assessment and summative booklet and practical assessment.</p>	<p>Yr8 Mechanical toy:</p> <p>This project focuses on mechanisms and structures. The development of a mechanical toy using a range of mechanisms that convert different types of motion. There is a focus on mechanical systems, maths in D&T, building on design and making skills, improving the independence in the design problem solving environments.</p> <ul style="list-style-type: none"> Types of motion Mechanisms Design and development Lever, gears ,and mechanical advantage Materials manipulation and combining materials Types of forces Use of Focus Software for independent research and design development. Building on development of manufacturing skills in the workshop and understanding of material properties. Critical review and evaluation maths content at KS4. Maths in D&T <p>Assessment: 30 minute Formal Assessment and summative booklet and practical assessment.</p>	SPRING	<p>GCSE Design & Technology In order to make effective design choices students will need a breadth of core technical knowledge and understanding that consists of:</p> <p>Energy, Systems, Materials & Devices</p> <ul style="list-style-type: none"> Energy Generation Energy Storage Modern Materials Smart Materials Composite Materials & Technical Textiles Systems Approach to Designing Electronic Systems Processing Mechanical Devices <p>Links to: How to choose appropriate energy sources. Classification of the types of properties of a range of materials. Selecting appropriate materials. Extracting information from technical specifications. Component names, interaction and operation. Visualise and represent 2D and 3D objects including 2D diagrams of mechanisms/mechanical movement. The action of forces and how levers and gears transmit and transform the effects of forces. Arithmetic and numerical computation eg use ratios. Use angular measures in degrees, visualise and represent 2D and 3D objects including 2D diagrams of mechanisms/mechanical movement. Knowledge of the function of mechanical devices to produce different sorts of movement, changing the magnitude and direction of forces.</p> <p>Assessment: Energy, Systems, Materials & Devices Assessment Test Paper – 1 hour</p>	<p>GCSE Design & Technology</p> <ul style="list-style-type: none"> Controlled Assessment <p>4.4.4.4 Section D: Developing design ideas (20 marks) Students will develop and refine design ideas. This may include, formal and informal 2D/3D drawing including CAD, systems and schematic diagrams, models and schedules. Students will develop at least one model, however marks will be awarded for the suitability of the model(s) and not the quantity produced. Students will also select suitable materials and components communicating their decisions throughout the development process. Students are encouraged to reflect on their developed ideas by looking at their requirements; including how their designs meet the design specification. Part of this work will then feed into the development of a manufacturing specification providing sufficient accurate information for third party manufacture, using a range of appropriate methods, such as measured drawings, control programs, circuit diagrams, patterns, cutting or parts lists.</p> <p>4.4.4.5 Section E: Realising design ideas (20 marks) Students will work with a range of appropriate materials/components to produce prototypes that are accurate and within close tolerances. This will involve using specialist tools and equipment, which may include hand tools, machines or CAM/CNC. The prototypes will be constructed through a range of techniques, which may involve shaping, fabrication, construction and assembly. The prototypes will have suitable finish with functional and aesthetic qualities, where appropriate. Students will be awarded marks for the quality of their prototype(s) and how it addresses the design brief and design specification based on a contextual challenge.</p> <p>Links to: Expression in decimal and standard form eg calculation of required materials. Calculate surface area and volume eg material requirements. Angular measures eg measurement and marking out. SI units eg measurement of materials and components using standard units as appropriate. The use of reference datum points and coordinates. Use angular measures eg tessellation of component parts. Calculating material area eg working out the quantity of materials required. SI units eg accurate use of appropriate units of measurement to calculate material requirements. Corrosion and oxidation eg how corrosion and/or oxidation affects different materials, how they can be protected through different surface treatments and finishes.</p> <p>Assessment: Formal NEA Assessment – Section D & Section E</p>

			<p>GCSE Food Preparation & Nutrition <i>Spring 1</i> 3.5.2 International cuisine: Cultures, religions, ethical and moral beliefs, climates, provenance. H/W Pasta making. Make a dish of their choosing. 3.2.3.2 – Primary & secondary processing (flour/pasta). 3.7 Food preparation and cooking techniques: Sauce making: reduction, emulsion, 3.3.2.2 gelatinisation. H/W Cheese sauce ingredients – pasta. 3.3.2 Functional and chemical properties of food: Fats v oils. Nutritional composition, scientific principals, properties, working characteristics and function. Demo: Mayonnaise (emulsification) H/W Bring cake ingredients. Practical: S5, S6, S10 Pasta making with a machine & boil to cook secondary processing) – Various skills - Foreign dish of their choice. S8 – Blended white sauce showing starch gelatinisation - Bechamel sauce. (S1, S4, S5, S11) Aeration using creaming method with a food mixer for a cake. Freeze for afternoon tea.</p> <p><i>Spring 2</i> 3.5.2 British cuisine: traditional meals, regional dishes. Equipment and cooking methods used. Eating patterns. Fish filleting & preparation – demo and do. Afternoon tea practicals. H/Ws: Bring 50p for Bread, 50p for Fruit tart case, sausage ,eat and 50p for rolls (flaky pastry). 3.6.1.2 Food and the environment Red Tractor, Soil Association, organic. Responsible, fishing Free range. Collect fruit/vegetables from the patch. Then make a pie dish using them. H/W bring 50p for pie ingredients. 3.6.1.1/3.5.1.1/3.2.3 Vegetarian and Vegan diets. Soya, Tofu, Quorn. Animal rights. Alternative proteins. – Pulses, beams, nuts, seeds. Modify a dish to meet the needs of a vegetarian or vegan. H/W bring ingredients. Practical: S1, S2,S3, S5,S6, S7, Fish & chips – enrobing & frying. (Various skills) Afternoon tea – seasonality & locally sourced produce. Fruit/Veg pie. Bread, Flaky pastry sausage rolls, Tart cakes – sweet shortcrust pastry for fruit tart. (various skills) Vegan/Vegetarian meal</p>	<p>GCSE Food Preparation & Nutrition <i>Spring 1</i> 3.6.1.1 Food Sources Cereals: Wheat, Maize, Barley, Rye and other grains. Primary and secondary processing. H/W Bring ingredients to make a secondary processed product. 3.6.1.3 – sustainability of food: climate change, global warming, sustainability, food waste. Produce a PPT. 3.6.2.2 - Technological developments: fortification, modified foods with health benefits and the efficiency of these. Sensory analysis of products.</p> <p>Practical: Using a primary processed products to make a secondary processed product. Flour to make bread. (S1,4,6,7,10,11)</p> <p><i>Spring 2</i> 3.6.1.1 Food Sources Eggs: Choice available Egg structure Function of eggs: aeration, binding, glazing. Maillard reaction. 3.3.2 Protein coagulation, foam formation. H/W Bring roulade ingredients. NEA2 Mock: Street Food: Plan and prepare a meal that would be suitable. Practical: Whisking eggs to produce a gas in liquid foam – whisked sponge (roulade). (S1,4,5,6,7, 11)</p> <p>Covid update: This class did already in Year 9 – reminder of this: Setting of eggs in quiche. (S1, 4, 6, 7, 12)</p>	<p>GCSE Food Preparation & Nutrition <i>Spring 1</i> 3.5: Factors affecting food choice 3.6: Food provenance – visit to the patch.</p> <p>Costings: Break down the cost of the 2 dishes.</p> <p>Planning: Produce a timeplan for the 2 dishes.</p> <p>Finishing techniques:Research ways of presenting the 2 dishes in an exciting, colourful and professional way.</p> <p>Make: Trial their 2 dishes and evaluate them.</p> <p><i>Spring 2</i> Revision cards, games and experiments.</p> <p>NEA2 Practical examination</p> <p>Finalise coursework.</p>
			<p>Level 1 Certificate Motor Vehicle Studies (Motorcycle pathway) Introduction to engineering equipment and materials</p> <ul style="list-style-type: none"> In this unit the learner will identify different materials and their properties. They will learn how to select and correctly use hand and power tools <p>Vehicle Cooling Systems</p> <ul style="list-style-type: none"> Reasons for a cooling system, types of cooling systems, air cooling, liquid cooling, topping up cooling systems, antifreeze, draining and refilling cooling systems. <p>Assessment: unit worksheets with unit test Oral, visual, functional, measurements.</p> <p>Skills: demonstrate/show the ability to check their own work for missing parts/components.</p>	<p>Level 1 Certificate Motor Vehicle Studies (Motorcycle pathway) Braking Systems</p> <ul style="list-style-type: none"> The main components of a braking systems, hydraulic operation <p>Assessment: unit worksheets with unit test Oral, visual, functional, measurements.</p> <p>Skills: identify the relevant information sources. State the basic operation and purpose. Identify codes and grades of brake fluid.</p>	<p>Level 1 Certificate Motor Vehicle Studies (Motorcycle pathway) Vehicle wheel & tyre systems</p> <ul style="list-style-type: none"> Tyre sidewall markings, speed index, remove & refit tyres, valves, tube & tubeless, run flat wheel and tyres, pressure monitoring systems. <p>Vehicle body & Interior cleaner</p> <ul style="list-style-type: none"> Why valet – road safety, resale value, fuel consumption, Preparing to valet, carrying out a valet service, selecting and using cleaning materials. <p>Assessment: unit worksheets with unit test Oral, visual, functional, measurements.</p> <p>Skills: correctly use tools and equipment. Identify wheel and tyre types and markings.</p>

			<p>Level 1 Certificate Practical Horticulture Prepare ground for sowing or planting under supervision</p> <ul style="list-style-type: none"> Know how to prepare the ground for sowing or planting & Be able to prepare the ground for sowing or planting Sow seeds outdoor in drills by hand Know how to sow seed outdoors in drills by hand <p>Assessment: unit worksheets with unit test. Oral, visual, functional, measurements.</p> <p>Skills: Sowing seeds, bulbs and tubers; and preparing growing beds. Mapping charts showing embedding of measuring.</p>	<p>Level 1 Certificate Practical Horticulture Cultivate land by single digging or forking</p> <ul style="list-style-type: none"> Know how to cultivate land by single digging or forking & Be able to cultivate land by single digging or forking <p>Determine soil PH with colour indicator test kit under supervision</p> <ul style="list-style-type: none"> Know how to determine soil pH with colour indicator kit & Be able to determine soil pH with colour indicator kit under supervision <p>Assessment: unit worksheets with unit test. Oral, visual, functional, measurements.</p> <p>Skills: Mark out a rectangular plot, mentally divide it into two strips. Oral, visual, functional, measurements.</p>	<p>Level 1 Certificate Practical Horticulture Prepare soil and apply organic mulch</p> <ul style="list-style-type: none"> Know how to prepare soil and apply organic mulch & Be able to prepare soil and apply organic mulch <p>Introduction to garden design</p> <ul style="list-style-type: none"> Know the principle styles of garden design & Be able to produce a simple design for a garden <p>Assessment: unit worksheets with unit test. Oral, visual, functional, measurements.</p> <p>Skills: Focusing upon the fundamental practical skills in horticulture. The skills to understand and how to improve the soil.</p>	
Project 3 of 3	<p>Food In Year 7 the students learn about hygiene and safety in the kitchen, tools and equipment.</p> <p>3.4 Safety in a Food Room, bacteria video, & how to use a cooker safely. H/W Design a poster</p> <p>3.4 Food safety: Safe practices, Food storage and 3.3.1.1 cooking of food. Task: Hands of bread experiment – hypothesise and reasoning,</p> <p>3.2.3.1 Basic nutrition and the consequence of a poor diet. Macronutrients/Micronutrients. Eatwell plate & Function of the macronutrients & McDonald boy. 3.3.2.4/3.4 Fruit and Vegetables - Enzymic browning, the cause & prevention. Experiment.</p> <p>3.2.2.1 Fruits & vegetables: Their nutritional composition, why we should eat them and the amount we should eat. Research and data task. Kahoot: Healthy Eating quiz. H/W Bring 4 varieties of fruit & carton of juice.</p> <p>3.6.1.2 Food provenance – seasonality of fruits and vegetables. H/W Bread, cheese, Toppings of choice (1 fruit or vegetable ingredient).</p> <p>3.2.1.3 Carbohydrates: Their function, where found, starches and sugars (intrinsic and extrinsic). GI Index. 3.5.1.1 Factors which influence food choice – H/W - Muffin ingredients – 50p plus fruit choice.</p> <p>Practical: S2 - Vitamins Safe knife handling (claw & bridge): Fresh fruit salad. (oxidisation/enzymic browning) S4, S6 - Safe use of the Grill: Pizza Toast (Eatwell plate) S2, S4, S6, S7- Safe use of the oven: Muffins (carbohydrates)</p> <p>3.2.1.1 Protein: Why we need it, where found. LBV & HBVs. H/W Burger ingredients.</p> <p>3.2.1.1/ 3.6.1.2 Alternative proteins: Quorn: what it is, how its made and the nutritional and environmental advantages.</p> <p>3.2.3.3/ 3.5.3 Sensory analysis: Quorn v meat</p> <p>3.2.1.1 Vegetarians & Vegans, Kahoot quiz. Design a Vegetarian dish. H/W Bring ingredients for yegetarian or vegan meal.</p>	<p>Food In Year 8 students learn about a healthy lifestyle through the Eat well plate and hydration.</p> <p>3.2.2.1 Basic Nutrition recap – Macro and micro nutrients. Role of Fibre – poo practical. 3.2.1.1/3.3.2 /3.5.3 Functional and chemical properties of food Protein denaturation – the affect of acid - marinating. H/W Chicken Fajita ingredients.</p> <p>3.2.3.Factors affecting food choice –sensory analysis: Full sugar v low sugar, full fat v low fat.</p> <p>3.3.2.5 Raising Agents: Biological, chemical, physical – Yeast experiment. Kahoot quiz. H/W Quick bread – bring 50p</p> <p>3.2.1.2 Fats & Oils – Function and the affect on the environment, Design a Twitter campaign.</p> <p>3.5.1.1 Factors which influence food choice – Brainstorm all factors then look at Costings in more detail. Design a meal for a family of 4 that costs under £5 to make. H/W Bring ingredients for your low cost meal.</p> <p>Practical: S9 - Chicken Fajitas S1, S4, S7, S10. S11 – Bread S1, S2 Meal on a budget</p> <p>3.2.3.1 How food impacts our heath – good mood food, exam stress. Group task – producing a list of Foods that Harm, Foods that Heal. H/W Make a dish that contains foods that heal.</p> <p>3.2.2.3 Hydration and the role that water plays on our bodies, in particular the digestive system and the affects of dehydration. Kahoot quiz.</p> <p>3.6.1.2 Seasonality of Food and the benefits of eating foods when they are in season. Visit to the Patch. H/W Savoury plait ingredients using a seasonal vegetable.</p> <p>3.6.1.1 Responsible Farming and the effects that the food industry has on the environment, and what is being done in the UK to help.</p> <p>3.2.3.1 The impact of a poor diet – diet related illnesses and eating disorders.</p> <p>3.2.3.2 Energy needs – PAL, BMR, calories and consequences on an</p>	SUMMER	<p>GCSE Design & Technology In order to make effective design choices students will need a breadth of core technical knowledge and understanding that consists of:</p> <p>Materials</p> <ul style="list-style-type: none"> Paper & Boards Timbers Metals & Alloys Polymers Textiles <p>Links to: Classification of the types and properties of a range of materials. Physical properties of materials related to use and knowledge applied when designing and making. Scientific vocabulary eg metals/non-metals and physical and chemical differences between them eg types and properties across a range of materials. Using materials eg composition of some important alloys eg selection of an alloy for enhanced durability in a particular design situation.</p> <p>Assessment: Materials Assessment Test Paper – 1 hour</p>	<p>GCSE Design & Technology Prepare for Controlled assessment task to start on 1st June.</p> <ul style="list-style-type: none"> Controlled Assessment <p>4.4.4.1 Section A: Identifying and investigating design possibilities (10 marks) By analysing the contextual challenge students will identify design possibilities, investigate client needs and wants and factors including economic and social challenges. Students should also use the work of others (past and/or present) to help them form ideas. Research should be concise and relate to their contextual challenge. Students are also advised to use a range of research techniques (primary/secondary) in order to draw accurate conclusions. Students should be encouraged to investigate throughout their project to help inform decisions.</p> <p>Links to: Analysing responses to user questionnaires. Frequency tables and information on design decisions. Presentation of client survey responses. Percentiles ranges used in anthropometrics and/or ergonomics. Comparative chart of performance criteria as for existing products to help evaluate them.</p> <p>Assessment: Formal NEA Assessment – Section A</p>	<p>GCSE Design & Technology</p> <ul style="list-style-type: none"> Controlled Assessment <p>4.4.4.6 Section F: Analysing and evaluating (20 marks) Within this iterative design process students are expected to continuously analyse and evaluate their work, using their decisions to improve outcomes. This should include defining requirements, analysing the design brief and specifications along with the testing and evaluating of ideas produced during the generation and development stages. Their final prototype(s) will also undergo a range of tests on which the final evaluation will be formulated. This should include market testing and a detailed analysis of the prototype(s).</p> <p>Final Revision and Exam Preparation</p> <p>Assessment: Final NEA submission Exams</p>
			SUMMER	<p>GCSE Food Preparation & Nutrition <i>Summer 1</i></p> <p>3.2.1 Food, nutrition & health: DRCs/RDIs Different life stages. Antioxidants Micronutrients – Iron, calcium, Vitamin C, Fluoride.</p> <p>3.2.3.3 How to carry out nutritional analysis NEA2 Task: Nutritional analysis & how to modify dishes to meet a consumers needs.</p> <p>3.2.3.2 Design a dish suitable for a teenager. Percentage of nutrients needed and sources of nutrients. Assessment: Mock written exam. Practical: Superfood salads – antioxidant vitamins (S2/3) Suitable dish for a teenager demonstrating portion size, nutrition and PAL level. (S1)</p> <p><i>Summer 2</i></p> <p>3.2.3.2 NEA1: Comparing products made by different methods of cooking – Oven, fry, microwave, water based. Conduct sensory evaluations to identify how the different methods affect the colour, flavour, texture, smell and overall palatability of the products. Analyse the affect on the nutritional composition: Chicken, Fish, vegetables, Fruit. Research, hypothesis, test theory and evaluate with conclusions. Practicals: Baking (S4) Dry heat (S6) Microwave (S5) Water, dry heat and fat based using the hob (S6)</p>	<p>GCSE Food Preparation & Nutrition <i>Summer 1</i></p> <p>3.5.1.3: How labelling & marketing influences choice. Labelling by law & non-mandatory information. Nutritional information. Marketing – BOGOF, media, POS.</p> <p>3.6.1.2 Environmental issues regarding packaging. Design your own food product packaging.</p> <p>3.2.2 Minerals: Calcium, Iron, Sodium, Flouride, Iodine, Phosphorous.</p> <p>3.6.2.1 Milk: Nutritional composition and function. Milk: Types, processing Pasteurised, sterilised, UHT, secondary processing – cheese, yoghurt. Sensory testing. H/W Bring ingredients for an iron-rich dish.</p> <p>Practicals – make a high iron dish Make butter. (S1)</p> <p><i>Summer 2</i></p> <p>Fish: Varieties: White, Oily. Nutritional composition. Sustainability. What to look for when purchasing fish. 3.4.2.2 Storage, preparation, cooking. 3.6.1.2 Sustainability.</p> <p>3.3.2.5 Raising agents – physical, chemical, biological. Co2 Production and chemical reactions. H/W Bread Choux pastry – then whipped cream (2 lessons) Muffins Practicals: Fish cakes, fish pie (S1,2,4,5,6,7) Bread making, whipped cream, choux pastry, muffins.(S11)</p>	<p>GCSE Food Preparation & Nutrition Final Revision and Exam Preparation Exams</p>

	<p>3.2.1.2 Fats & Oils – Function and the affect on the environment. 3.2.3.3 / 3.5.3 Sensory Testing: Healthy v Unhealthy. 3.6.1.1 Responsible farming & schemes. Visit to the Patch. Design a poster. H/W Bring £1 for Crumble ingredients.</p> <p>Practical: S1, S4, S7 - Homemade burgers - Protein S1, S4, S7, S11 - Cheese Scones – Alternative protein S1, S4, S6, S7 - Fruit Crumble – Tinned fruit Assessment: 30 minute Formal Assessment and summative booklet and practical assessment.</p>	<p>imbalance. H/W Free choice practical ingredients.</p> <p>Practical: Various skills – A dish that contains foods that contain antioxidants to heal the body. S1, S2, S3, S4, S6, S7, S10 – A seasonally inspired pastry plait (ready made pastry). Various skills - A dish of their choice showcasing what they have learnt this term (Final practical in KS3).</p> <p>Assessment: 30 minute Formal Assessment and summative booklet and practical assessment.</p>		<p>Level 1 Certificate Motor Vehicle Studies (Motorcycle pathway) Fuel & Exhaust Systems</p> <ul style="list-style-type: none"> The main components of fuel systems, petrol fuel systems, diesel fuel systems, the main components of an exhaust system. <p>Assessment: unit worksheets with unit test Oral, visual, functional, measurements.</p> <p>Skills: identify potential health and safety hazards and risks. Follow approved workplace procedures. Identify the major components of the fuel system.</p>	<p>Level 1 Certificate Motor Vehicle Studies (Motorcycle pathway) Vehicle Electrical Systems</p> <ul style="list-style-type: none"> Battery, fuses, wiring, switches, relays, motors, alternators, lighting components, removing and replacing electrical system components, soldering a terminal <p>Assessment: unit worksheets with unit test Oral, visual, functional, measurements.</p> <p>Skills: examine electrical systems. Demonstrate basic removal, repair and fitting techniques.</p>	<p>Level 1 Certificate Motor Vehicle Studies (Motorcycle pathway) Course Finish – Revision for Other subjects</p>
				<p>Level 1 Certificate Practical Horticulture Care for a planted areas</p> <ul style="list-style-type: none"> Know how to care for a planted area & Be able to care for a planted area <p>Assessment: unit worksheets with unit test. Oral, visual, functional, measurements.</p> <p>Skills: The learner will be able to learn skills such as planting out, preparing ground, pruning, using a mower, maintaining turf or watering.</p>	<p>Level 1 Certificate Practical Horticulture Identifying weeds</p> <ul style="list-style-type: none"> Know weed species Principles of identifying the presence of, and controlling common pests and diseases Know how to identify common pests and diseases, Know how to control common pests and diseases & Know how to work safely <p>Links to:</p> <p>Assessment: unit worksheets with unit test. Oral, visual, functional, measurements.</p> <p>Skills: The first element is about recognizing the presence of common pests and diseases within the cropping area. Pests will include insects, for example. Diseases may be fungal, viral or bacterial.</p>	<p>Level 1 Certificate Practical Horticulture Course Finish – Revision for Other subjects</p>