

## Key Stage 4: Year 10 - Engineering

<p style="text-align: center;"><b>Overall Curriculum Goals</b></p> <p style="text-align: center;">To understand and be able to use the Iterative Design process</p> <p style="text-align: center;">To develop critical thinking skills to analyse why we use different materials for certain designs and understanding which would work the best.</p> <p style="text-align: center;">To understand how to realise design concepts with increased precision, accuracy and independence.</p> <p style="text-align: center;">To understand and develop basic skills with CAD/CAM</p> <p style="text-align: center;">To understand theory topics for the 3 main material areas</p> <p style="text-align: center;">To understand key elements of design history – people, designers and products.</p>					
Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
<p>Nightlight Project as a practice NEA project.</p> <p>To include; Context exploration from a given brief provided by the teacher. Initial research into the context; client interview, product analysis, Specification, rough design ideas.</p> <p>Unit 1 theory lessons (6 lessons and an assessment test)</p>	<p>Nightlight Project as a practice NEA project.</p> <p>To include; Producing a range of technical drawings, using the knowledge and understanding obtained in Year 9. Producing a range of card models to allow for analysis of the best design ideas.</p> <p>Unit 2 theory lessons (8 lessons and an assessment test)</p>	<p>Nightlight Project as a practice NEA project.</p> <p>To include; Soldering the nightlight circuit, building on the work completed in Year 9 with the speaker project. Beginning the manufacture of the nightlight using a range of materials and processes.</p> <p>Completing Unit 2 theory lessons and beginning Unit 3 (5 lessons and an assessment test)</p>	<p>Nightlight Project as a practice NEA project.</p> <p>To include; Soldering the nightlight circuit, building on the work completed in Year 9 with the speaker project. Continuing with the manufacture of the nightlight using a range of materials and processes.</p> <p>Completing Unit 3 theory lessons and beginning Unit 4 (5 lessons and an assessment test)</p>	<p>Nightlight Project as a practice NEA project.</p> <p>To include; Completing the manufacture of the nightlight using a range of materials and processes. Evaluating the final product and considering the improvements that could be made for the product.</p> <p>Completing Unit 4 theory lessons and beginning Unit 5d (3 lessons and an assessment test)</p>	<p>Beginning the NEA</p> <p>To include; Context exploration from a given starting point, provided by the exam board. Initial research into the context; client interview, product analysis, Specification, rough design ideas.</p> <p>Unit 6 theory lessons (4 lessons and an assessment test)</p>
Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas
<p>Problem, research, brief, specification, interview, client, analysis, ACCESSFM, feedback, primary and secondary research.</p> <p>Unit 1 theory – industry and enterprise, sustainability and the environment, people, culture and society, production techniques and systems, informing design decisions.</p>	<p>Isometric. Orthographic CAD/CAM Design Ideas Concept sketching Presentation drawing and rendering Design Development Prototype, 3D modelling</p> <p>Unit 2 theory – energy generation, energy storage, modern materials, smart materials, composite materials and technical textiles, systems approach to designing, electronic system processing, mechanical devices.</p>	<p>Prototype, 3D modelling. Final outcome Specific material names and processes as required by project outcomes, including laser cutting, vacuum former etc.</p> <p>Unit 3 theory – papers and boards, timbers, metals and alloys, polymers, textiles.</p>	<p>Prototype, 3D modelling. Final outcome. Specific material names and processes as required by project outcomes, including laser cutting, vacuum former etc.</p> <p>Unit 4 theory – forces and stresses, improving functionality, ecological and social footprint, the six R's, scales of production.</p>	<p>Design Development Prototype, 3D modelling. Final outcome. Evaluation, feedback, in-situ. Specific material names and processes as required by project outcomes</p> <p>Unit 5 theory – sources, origins and properties of polymers, working with polymers, manufacture and finishing.</p>	<p>Problem, research, brief, specification, interview, client, analysis, ACCESSFM, feedback, primary and secondary research.</p> <p>Unit 6 theory – Investigation, primary and secondary data, the work of others, design strategies, communication of design ideas.</p>
CIAG	CIAG	CIAG	CIAG	CIAG	CIAG
<p>Students are required to find a real client who can give them an insight into their needs and requirements, and also provide regular feedback. Theory topics above.</p>	<p>Tolerance, accuracy, template, construction lines, scale, CAD/CAM, offset, tutorial, technical, manufacturing. Theory topics above.</p>	<p>Learning and understanding health and safety. Learning how to use a wide range of industrial processes. Theory topics above.</p>	<p>Theory topics above.</p>	<p>Theory topics above.</p>	<p>Theory topics above.</p>

## Key Stage 4: Year 10 – Product Design

Overall Curriculum Goals					
<p>To understand and be able to use the Iterative Design process</p> <p>To develop critical thinking skills to analyse why we use different materials for certain designs and understanding which would work the best.</p> <p>To understand how to realise design concepts with increased precision, accuracy and independence.</p> <p>To understand and develop basic skills with CAD/CAM</p> <p>To understand theory topics for the 3 main material areas</p> <p>To understand key elements of design history – people, designers and products.</p>					
Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
<p>Nightlight Project as a practice NEA project.</p> <p>To include; Context exploration from a given brief provided by the teacher. Initial research into the context; client interview, product analysis, Specification, rough design ideas.</p> <p>Unit 1 theory lessons (6 lessons and an assessment test)</p>	<p>Nightlight Project as a practice NEA project.</p> <p>To include; Producing a range of technical drawings, using the knowledge and understanding obtained in Year 9. Producing a range of card models to allow for analysis of the best design ideas.</p> <p>Unit 2 theory lessons (8 lessons and an assessment test)</p>	<p>Nightlight Project as a practice NEA project.</p> <p>To include; Soldering the nightlight circuit, building on the work completed in Year 9 with the speaker project. Beginning the manufacture of the nightlight using a range of materials and processes.</p> <p>Completing Unit 2 theory lessons and beginning Unit 3 (5 lessons and an assessment test)</p>	<p>Nightlight Project as a practice NEA project.</p> <p>To include; Soldering the nightlight circuit, building on the work completed in Year 9 with the speaker project. Continuing with the manufacture of the nightlight using a range of materials and processes.</p> <p>Completing Unit 3 theory lessons and beginning Unit 4 (5 lessons and an assessment test)</p>	<p>Nightlight Project as a practice NEA project.</p> <p>To include; Completing the manufacture of the nightlight using a range of materials and processes. Evaluating the final product and considering the improvements that could be made for the product.</p> <p>Completing Unit 4 theory lessons and beginning Unit 5d (3 lessons and an assessment test)</p>	<p>Beginning the NEA</p> <p>To include; Context exploration from a given starting point, provided by the exam board. Initial research into the context; client interview, product analysis, Specification, rough design ideas.</p> <p>Unit 6 theory lessons (4 lessons and an assessment test)</p>
Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas
<p>Problem, research, brief, specification, interview, client, analysis, ACCESSFM, feedback, primary and secondary research.</p> <p>Unit 1 theory – industry and enterprise, sustainability and the environment, people, culture and society, production techniques and systems, informing design decisions.</p>	<p>Isometric. Orthographic CAD/CAM Design Ideas Concept sketching Presentation drawing and rendering Design Development Prototype, 3D modelling</p> <p>Unit 2 theory – energy generation, energy storage, modern materials, smart materials, composite materials and technical textiles, systems approach to designing, electronic system processing, mechanical devices.</p>	<p>Prototype, 3D modelling. Final outcome Specific material names and processes as required by project outcomes, including laser cutting, vacuum former etc.</p> <p>Unit 3 theory – papers and boards, timbers, metals and alloys, polymers, textiles.</p>	<p>Prototype, 3D modelling. Final outcome. Specific material names and processes as required by project outcomes, including laser cutting, vacuum former etc.</p> <p>Unit 4 theory – forces and stresses, improving functionality, ecological and social footprint, the six R's, scales of production.</p>	<p>Design Development Prototype, 3D modelling. Final outcome. Evaluation, feedback, in-situ. Specific material names and processes as required by project outcomes</p> <p>Unit 5 theory – sources, origins and properties of polymers, working with polymers, manufacture and finishing.</p>	<p>Problem, research, brief, specification, interview, client, analysis, ACCESSFM, feedback, primary and secondary research.</p> <p>Unit 6 theory – Investigation, primary and secondary data, the work of others, design strategies, communication of design ideas.</p>
CIAG	CIAG	CIAG	CIAG	CIAG	CIAG
<p>Students are required to find a real client who can give them an insight into their needs and requirements, and also provide regular feedback. Theory topics above.</p>	<p>Tolerance, accuracy, template, construction lines, scale, CAD/CAM, offset, tutorial, technical, manufacturing. Theory topics above.</p>	<p>Learning and understanding health and safety. Learning how to use a wide range of industrial processes. Theory topics above.</p>	<p>Theory topics above.</p>	<p>Theory topics above.</p>	<p>Theory topics above.</p>

## Key Stage 4: Year 10 - Construction

Overall Curriculum Goals					
<ul style="list-style-type: none"> <li>To gain and develop high levels of wood joinery skills and brick work skills used in real life scenarios.</li> <li>To understand how to interpret and use technical source information to aid their practical work.               <ul style="list-style-type: none"> <li>To understand how to identify tools required for wood joinery and brick work.                   <ul style="list-style-type: none"> <li>To calculate materials required for wood joinery and brick work.</li> </ul> </li> </ul> </li> <li>To understand and demonstrate appropriate Health and Safety measures used both in school and in the industry to minimise risks.               <ul style="list-style-type: none"> <li>To understand theory topics for Safety and Security in Construction</li> </ul> </li> </ul>					
Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Corner halving and hinge rebate practice.	Unit 2 – Joinery NEA book work: - Interpreting a brief - Plan a sequence of work, including technical drawings, timescales, plan of manufacture and H&S.  Unit 2 – Joinery NEA practical: - Measure, mark and cut outer frame.	Unit 2 – Joinery NEA book work: - Identifying tools required for the task. - Calculating materials required for the task.  Unit 2 – Joinery NEA practical: - Measure, mark and cut corner halving joints. - Assemble outer and inner frame. - Chisel hinge rebates.	Unit 2 – Joinery NEA book work: - Setting a success criteria. - Report on joinery practical.  Unit 2 – Joinery NEA practical: - Attach hinges. - Measure, mark, cut, sand and assemble inner frame plywood panel. - Measure, mark, cut, sand and assemble beading. - Attach sliding bolt. - Finish to a high quality	Unit 2 - Brick work NEA book work: - Interpreting a brief - Plan a sequence of work, including timescales, plan of manufacture and H&S.  Unit 2 – Brick work practical - Spreading and buttering. - Working to the line.  Unit 1 theory (3 lessons) – HSE, RIDDOR, COSHH	Unit 2 – Brick work NEA book work: - Identifying tools required for the task. - Calculating materials required for the task.  Unit 2 – Brickwork practical: - Jointing.  Unit 1 theory (3 lessons, revision sheets and then an assessment test) – PPE, Manual Handling, Working from Heights, Asbestos, Safety signs, Role of HSE, Risk Assessments.
Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas
- Practical wood joinery skills: - Measure, mark & cut - Steel rule, try-square & sharp pencil. - Tenon saw & bench hook. - Halving joint - Assembly - High quality finish.  - Chisel rebate - Accuracy - Assembling hinges - Pilot holes - Screw fixings - Alignment	- Brief - Specification - Technical drawing - Scale - Timescales - Plan a sequence of work - H&S - Tolerance Practical joinery skills: - Measure, mark & cut - Steel rule, try-square & sharp pencil. - Tenon saw & bench hook. - Halving joint. - Chisel	-Tools/Equipment: - Characteristics - Qualities - Limitations  Standard Conventions: -Area. - Perimeter - Time - Cost - Material Allowance  - Practical wood joinery skills: - Measure, mark & cut - Steel rule, try-square & sharp pencil. - Halving joint - Chisel - Assembly - Chisel rebate. - High quality finish.	Success Criteria Explicit Implicit Tolerance Quality Timescale  - Practical wood joinery skills: - Assembly - Sash clamps - vices - Band clamps - Pressure points - High quality finish	- Arris - Back (of a wall) - Bed (joint) Bolster chisel Brick hammer Buttering a brick Corner block Course Stretcher bond Face Feathering Lump hammer Mortar Perp joint Plasticizer Plumb Plumb joints Rolling (mortar) Spirit level Trowel  - HSE, RIDDOR, COSHH	Jointing Jointing Iron Pointing Sighting (it up)  - PPE, Manual Handling, Working from Heights, Asbestos, Safety signs, Role of HSE, Risk Assessments
CIAG	CIAG	CIAG	CIAG	CIAG	CIAG
	Interpreting real world source information	Using and interpreting real world cost sheets.		Theory topics above.	Students visit a building site.

## Key Stage 4: Year 10 – Food

Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
<p><b>Understanding</b> the characteristics of food through <b>Focusing on the Commodity</b>: (Fruit and vegetables, including potatoes (fresh, frozen, dried, canned and juiced)</p> <p><b>Practical Cookery</b> and the study of nutrition, Provenance, Choice, Safety &amp; Science</p>	<p><b>Understanding</b> the characteristics of food through <b>Focusing on the Commodity</b>: Cereals (inc.flours, breakfast cereals, bread and pasta</p> <p><b>Practical Cookery</b> and the study of : nutrition, Provenance, Choice, Safety and Science</p>	<p><b>Understanding</b> the characteristics of food through Practical Cookery: <b>Focusing on the Commodity</b>: Meat, fish, poultry, eggs</p> <p><b>Practical Cookery</b> and the study of : nutrition, Provenance, Choice, Safety and Science</p>	<p><b>Understanding</b> the characteristics of food through Practical Cookery <b>Focusing on the Commodity</b>: Milk, cheese, yoghurt</p> <p><b>Practical Cookery</b> and the study of : nutrition, Provenance, Choice, Safety and Science</p>	<p><b>Understanding</b> the characteristics of food through Practical Cookery. <b>Focusing on the Commodity</b>: Butter, oils, margarine, sugar and syrup</p> <p><b>Practical Cookery</b> through the study of : nutrition, Provenance, Choice, Safety and Science .</p>	<p>Understanding the dietary requirements of a client considering nutrition, Provenance, Choice, Safety and Science .</p> <p><b>Practical Cookery</b> through the study of nutrition, Provenance, Choice, Safety and Science .</p>
Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas
<p><b>Nutrition</b> Re-introduction to Nutrients and Eatwell Guide. water and fat soluble vitamins, Excess and deficiency and role of antioxidants how cooking impacts on nutritional properties. DRV, RDI and the needs of children, teenagers, adults and the elderly and related diseases</p> <p><b>Provenance</b> - Grown food, Seasonal, Organic, conventional, free range farming. Genetically modified foods. Primary and secondary processing</p> <p><b>Choice</b> - Lifestyle &amp; consumer choice, e.g physical activity level PAL), Sensory testing and analysis</p> <p>Carry out a sensory analysis</p> <p><b>Food Science</b>: dextrinisation, caramelisation, enzymic browning and oxidation</p> <p><b>Food safety</b> – Personal, food and kitchen hygiene principles, micro-organisms, moulds, yeasts and bacteria. <b>Practical skills</b> Knife skills and cutting techniques, finishing</p> <p>Preparing Fruit and vegetables and demonstrate enzymic browning</p> <p><b>USE OF EQUIPMENT</b>- use of a blender, finishing techniques</p> <p><b>Practical Work</b></p> <ol style="list-style-type: none"> <li>1. Fresh Fruit Salad with stock syrup</li> <li>2. Cauliflower cheese – Starch sauce</li> <li>3. Pineapple upside down cake chemical raising agent.</li> <li>4. Choice of - Veg soup, Carrot soup, Mushroom soup, Sweet potato and lentil soup, Tomato soup</li> <li>5. Experiment</li> </ol>	<p><b>Nutrition</b> function of Starch/ sugars Dietary Fibre, carbohydrates reference value (DRV) of Carbs Function and main sources,excess and deficiency <b>Modify recipe</b> increase Fibre Planning for and Coeliac disease,</p> <p><b>Provenance</b> Grown food, primary and secondary processing of flour into bread</p> <p><b>Choice</b>Allergies, coeliac</p> <p><b>Food Science</b>- Gluten formation, Fermentation, Gelatinisation <b>Raising agents</b> chemical , biological, mechanical Steam and used bicarbonate of soda</p> <p><b>Food Safety</b>- Revisit Personal, food and kitchen hygiene</p> <p><b>Practical Skills</b></p> <p>Revisit skill 5 – electric mixer</p> <p>Skill 8 – sauce making, (Starch based ) using a pasta machine</p> <p>Proving bread using high Fibre flour</p> <p><b>demonstrate</b> ,finishing techniques</p> <p>Sensory analysis.</p> <p><b>Practical Work</b></p> <ol style="list-style-type: none"> <li>1. Basic Bread dough</li> <li>2. Pizza</li> <li>2. Brown bread half and half dough.</li> <li>3. Shaped and proved bread plaited.</li> <li>4. Spinach and ricotta ravioli (own pasta)]</li> <li>5. Samosa, making own pastry.</li> </ol>	<p><b>Nutrition</b> -low and high biological value protein, main source of iron Protein complementation/ alternatives</p> <p>Functionsj main sources,excess and deficiency. DRV of proteins</p> <p><b>Modify recipes</b> for vegetarian . vegan diets, Iron and vitamins</p> <p><b>Provenance</b> - Caught and reared foods, seasonal, organic, conventional, free range farming. Genetically modified foods. Primary and secondary processing, sustainable fishing</p> <p><b>Food Science</b>- 3 methods of denaturing proteins, coagulation, foam formation and aeration</p> <p><b>Choice</b> - Religion and food choice, ethical and moral beliefs</p> <p><b>Food safety</b> - High risk foods, temperature and storage, food safety principles</p> <p>Timeplan and sensory analysis</p> <p><b>Homework project</b></p> <p>Continue Mock NEA 2 -</p> <p>Nutritional requirements, whilst considering a different cuisine</p> <p><b>Plan and carry out research</b></p> <p><b>Develop research skills</b> primary, secondary</p> <p><b>Practical work</b></p> <ol style="list-style-type: none"> <li>1. Portioning a chicken</li> <li>2. Chicken Goujous enrobing</li> <li>3. Chicken curry, Thighs</li> <li>4. Filleting a fish en papillote</li> <li>5. Experiment</li> </ol>	<p><b>Nutrition</b> main sources, minerals, excess and deficiency. DRV of proteins ,balanced meal for people with lactose intolerance,</p> <p>Nutritional analysis dietary needs, BMR, diet related illness</p> <p>(Rickets &amp; Osteoporosis) I</p> <p><b>Provenance</b> – Pasturisation, UHT, sterilisation, Secondary processing of milk</p> <p>Food waste, environment, carbon footprint and food miles</p> <p><b>Choice</b> Food legislation, packaging, market influence, nutritional labels</p> <p><b>Sensory analysis</b> – testing methods</p> <p><b>Food Science</b>- I know and can explain the use of gelatin to set a chilled mixture (custard, cheesecake)</p> <p><b>Food safety</b> micro-organisms in food production, fridge, freezer temperature for storage, danger-zone, <b>Practical Skills</b>- setting a mixture custard, cheesecake</p> <p><b>Homework project</b></p> <p>Continue Mock NEA 2 -</p> <p><b>Explain how findings</b> will influence investigation.and</p> <p><b>Present research</b></p> <p><b>Plan relevant</b> -Technical task</p> <p><b>Practical work</b></p> <ol style="list-style-type: none"> <li>1 Panna Cotta</li> <li>2. Crème Caramel</li> <li>3. Quiche – own shortcrust pastry</li> <li>5. Meringue</li> <li>6. Experiment.</li> </ol>	<p><b>Nutrition</b> - Saturated &amp; un-saturated fats Sources, function, excess and deficiency of Fats. DRV of fats. Factors contributing to diet related diseases</p> <p><b>Provenance</b> – <b>Technical development</b> cholesterol lowering spreads, fortified foods, aspects of additives, colourings, stabilisers, flavourings and preservatives</p> <p><b>Sustainability</b>: climate change, global warming, fair trade, weather and food commodities, GM food, food waste</p> <p><b>Food Science</b>- shortening e.g pastry making, emulsification, plasticity of fats.</p> <p><b>Choice</b> <b>Revisit</b> the 10 factors influencing food choice (lifestyle &amp; consumer choice, e.g physical activity level PAL)</p> <p><b>Food safety</b> -<b>Know the food safety</b> principles when buying and storing food</p> <p><b>List</b> the optimum freezing temperature</p> <p>State the temperature range at which food should be chilled</p> <p><b>State</b> the ‘danger zone’ range of temperatures</p> <p><b>Practical work</b></p> <ol style="list-style-type: none"> <li>1. Shortcrust pastry</li> <li>2. Fruit pie</li> <li>2. Rough Puff pastry</li> <li>3. Apple tartin,</li> <li>4. Food processor for pastry</li> <li>5. Technical skill – high skill</li> </ol> <p><b>Homework project</b></p> <p>Continue Mock NEA 2 -</p> <p><b>Explain how findings</b> will influence investigation.</p> <p><b>Present research</b></p> <p><b>Plan relevant</b> -Technical task</p>	<p><b>Select recipes</b> to consider different dietary needs and dietary related diseases</p> <p><b>Current guidelines</b> for a healthy diet</p> <p>Research dietary needs of teenagers, adults &amp; the elderly, lactose intolerance, vegetarians, vegans, coeliac</p> <p><b>Select recipes</b> which consider different dietary needs)</p> <p>Research BMR and carry out nutritional analysis.</p> <p>list the percentage of recommended energy sources from Macronutrients <b>Carry out a nutritional</b> analysis using computer software</p> <p><b>Explain the factors</b> to obesity and diet related diseases</p> <p><b>Know</b> the definition of ‘a cuisine’</p> <p>List the different characteristics, distinctive features and cooking methods of at least 2 world cuisines</p> <p>Adapt traditional recipes and modify them –</p> <p><b>Homework project</b></p> <p>Continue Mock NEA 2 -</p> <p><b>Select suitable final dishes</b> to make for <b>Justify reasons for choice</b> of final dishes</p> <p><b>Sequence</b> making activities with effective dovetailing of tasks.</p> <p><b>Execute</b> a range of technical skills</p> <p><b>Demonstrate</b> a range of appropriate finishing techniques</p> <p><b>Demonstrate</b> organisational skills</p> <p>Evaluate and hand in portfolio</p> <p><b>Practical work</b></p> <ol style="list-style-type: none"> <li>1. Profiteroles, piping skills</li> <li>2. Technical skills</li> <li>3. Technical skills</li> <li>4. Main dish</li> </ol>
CIAG	CIAG	CIAG	CIAG	CIAG	CIAG
<p>Careers in Public Health <b>Clinical nutritional dietetics</b></p> <p>Food industry</p> <p><b>Lecturing teaching</b>, Sports and <b>Public health nutrition</b></p> <p>Food Scientist, <b>Welfare officer</b></p>		<p><b>A qualification in Food and Nutrition can lead to:</b></p> <p><b>or embark in further study in the catering industry or a qualification in the following careers</b></p>		<p>Films showing the famed industry when teaching provenance</p> <p>Films showing foods scientists</p> <p>Films on Provenance and farming industry</p> <p>BNF films on nutrition and food scientists</p>	<p>Films showing the food industry</p> <p>Power point slides giving students information on routes into jobs</p>

## Key Stage 4: Year 11 - Engineering

<p style="text-align: center;"><b>Overall Curriculum Goals</b></p> <p style="text-align: center;">To understand and be able to use the Iterative Design process</p> <p style="text-align: center;">To develop critical thinking skills to analyse why we use different materials for certain designs and understanding which would work the best.</p> <p style="text-align: center;">To understand how to realise design concepts with increased precision, accuracy and independence.</p> <p style="text-align: center;">To understand and develop basic skills with CAD/CAM</p> <p style="text-align: center;">To understand theory topics for the 3 main material areas</p> <p style="text-align: center;">To understand key elements of design history – people, designers and products.</p>					
Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
<p>Context-driven NEA coursework.</p> <p>To include; modelling, final design idea, client evaluation. Development and testing of all possible materials, processes and finishes.</p> <p>Manufacturing specification and final design idea, client evaluation.</p> <p>Unit 7 theory lessons (5 lessons and an assessment test)</p>	<p>Context-driven NEA coursework.</p> <p>To include; Practical work, working towards the completion of a final prototype, using a wide range of processes, building on work completed since Year 7.</p>	<p>Context-driven NEA coursework.</p> <p>To include; Completion of the final prototype, and the wide range of processes this requires. Final evaluation and product in-situ, potential methods of industrial production.</p>	<p>Theory work.</p> <p>To include; preparing students for the exam, by recapping on theory topics from Units 1-7, and working through exam technique using past paper examples.</p>	<p>Theory work</p> <p>To include; preparing students for the exam, by recapping on theory topics from Units 1-7, and working through exam technique using past paper examples.</p>	
Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas
<p>Isometric. Orthographic CAD/CAM Design Ideas Concept sketching Presentation drawing and rendering Design Development Prototype, 3D modelling</p> <p>Unit 7 theory – selection of material and components, tolerances, material management, tools, equipment techniques and finishes, surface treatments and finishes.</p>	<p>Prototype, 3D modelling. Final outcome Specific material names and processes as required by project outcomes, including laser cutting, vacuum former etc.</p>	<p>Prototype, 3D modelling. Final outcome Specific material names and processes as required by project outcomes, including laser cutting, vacuum former etc.</p>	<p>The vocabulary this half term will be consolidating all the vocabulary met across years 10 and 11.</p>	<p>The vocabulary this half term will be consolidating all the vocabulary met across years 10 and 11.</p>	
CIAG	CIAG	CIAG	CIAG	CIAG	CIAG
<p>Students are required to find a real client who can give them an insight into their needs and requirements, and also provide regular feedback.</p>	<p>Students are required to find a real client who can give them an insight into their needs and requirements, and also provide regular feedback.</p>	<p>Students are required to find a real client who can give them an insight into their needs and requirements, and also provide regular feedback.</p>			

## Key Stage 4: Year 11 – Product Design

<p style="text-align: center;"><b>Overall Curriculum Goals</b></p> <p style="text-align: center;">To understand and be able to use the Iterative Design process</p> <p style="text-align: center;">To develop critical thinking skills to analyse why we use different materials for certain designs and understanding which would work the best.</p> <p style="text-align: center;">To understand how to realise design concepts with increased precision, accuracy and independence.</p> <p style="text-align: center;">To understand and develop basic skills with CAD/CAM</p> <p style="text-align: center;">To understand theory topics for the 3 main material areas</p> <p style="text-align: center;">To understand key elements of design history – people, designers and products.</p>					
Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
<p>Context-driven NEA coursework.</p> <p>To include; modelling, final design idea, client evaluation. Development and testing of all possible materials, processes and finishes.</p> <p>Manufacturing specification and final design idea, client evaluation.</p> <p>Unit 7 theory lessons (5 lessons and an assessment test)</p>	<p>Context-driven NEA coursework.</p> <p>To include; Practical work, working towards the completion of a final prototype, using a wide range of processes, building on work completed since Year 7.</p>	<p>Context-driven NEA coursework.</p> <p>To include; Completion of the final prototype, and the wide range of processes this requires. Final evaluation and product in-situ, potential methods of industrial production.</p>	<p>Theory work.</p> <p>To include; preparing students for the exam, by recapping on theory topics from Units 1-7, and working through exam technique using past paper examples.</p>	<p>Theory work</p> <p>To include; preparing students for the exam, by recapping on theory topics from Units 1-7, and working through exam technique using past paper examples.</p>	
Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas
<p>Isometric. Orthographic CAD/CAM</p> <p>Design Ideas</p> <p>Concept sketching</p> <p>Presentation drawing and rendering</p> <p>Design Development</p> <p>Prototype, 3D modelling</p> <p>Unit 7 theory – selection of material and components, tolerances, material management, tools, equipment techniques and finishes, surface treatments and finishes.</p>	<p>Prototype, 3D modelling.</p> <p>Final outcome</p> <p>Specific material names and processes as required by project outcomes, including laser cutting, vacuum former etc.</p>	<p>Prototype, 3D modelling.</p> <p>Final outcome</p> <p>Specific material names and processes as required by project outcomes, including laser cutting, vacuum former etc.</p>	<p>The vocabulary this half term will be consolidating all the vocabulary met across years 10 and 11.</p>	<p>The vocabulary this half term will be consolidating all the vocabulary met across years 10 and 11.</p>	
CIAG	CIAG	CIAG	CIAG	CIAG	CIAG
<p>Students are required to find a real client who can give them an insight into their needs and requirements, and also provide regular feedback.</p>	<p>Students are required to find a real client who can give them an insight into their needs and requirements, and also provide regular feedback.</p>	<p>Students are required to find a real client who can give them an insight into their needs and requirements, and also provide regular feedback.</p>			

## Key Stage 4: Year 11 - Construction

Overall Curriculum Goals					
<ul style="list-style-type: none"> <li>• To gain and develop high levels of brick work skills and painting/ decorating used in real life scenarios.</li> <li>• To understand how to interpret and use technical source information to aid their practical work.               <ul style="list-style-type: none"> <li>• To understand how to identify tools required for painting/ decorating.</li> <li>• To calculate materials required for painting/ decorating.</li> </ul> </li> <li>• To understand and demonstrate appropriate Health and Safety measures used both in school and in the industry to minimise risks.               <ul style="list-style-type: none"> <li>• To understand theory topics for Planning Construction Projects.</li> </ul> </li> </ul>					
Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Unit 2 – Brick work – book work: - Setting a success criteria. - Report on P&D practical.  Unit 2 – brick work practical: - Finalise the last course of bricks.  Unit 3 – theory – Job roles in construction, who is responsible for H&S, Processes used in the Build Environment, Calculating resources required for the built environment.	Unit 2 – P&D – book work: - Interpreting a brief - Plan a sequence of work, including timescales, plan of manufacture and H&S. - Identifying tools required for the task. <u>Unit 2 – P&amp;D practical:</u> -Mask off and complete the first two coats of paint. <u>Unit 3 – theory –</u> Factors that effect the projects success, Interpreting source information, Planning phase in the built environment and using project planning tools.	Unit 2 – P&D- book work: - Calculating materials required for the task. - Setting a success criteria. - Report on P&D practical.  Unit 2 – P&D practical: - Complete the last coat of paint. - Assess and improve quality.	Theory work.  To include; preparing students for the exam, by recapping on theory topics from Units 1 and 3, and working through exam technique using past paper examples.	Theory work.  To include; preparing students for the exam, by recapping on theory topics from Units 1 and 3, and working through exam technique using past paper examples.	
Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas
- Health & Safety (H&S) -Personal Protective Equipment (PPE) - Brief - Specification - Scale - Technical drawing - Measure, mark & cut - Steel rule, try-square & sharp pencil - Tenon saw & bench hook - Waste - Mitre joint - Combination square - Assembly using band clamps or sash clamps - High quality finish  Unit 3 – -Clients team, contractor team, statutory personnel. -Project planning, calculating resources, plant, labour, materials.	- Brief - Specification - Timescales - Plan a sequence of work - Tolerance Tools/Equipment: - Characteristics - Qualities - Limitations <u>Painting/ decorating skills:</u> - Cutting in. - Masking off. - Synthetic brush. - Fat edge. - Sagging (drips). - Tramlines.  <u>Unit 3 –</u> -Internal and external factors effecting the projects success. -Sequencing and apportion time to the handover, planning and construction. -Setting project tolerances.	Standard Conventions: -Area. - Perimeter - Time - Cost - Material Allowance.  Success Criteria Explicit Implicit Tolerance Quality Timescale  Evaluation/ Reports.  Painting/ decorating skills: - Knot stopper. - Key the wood. - Fine coat. - Multiple coats.	The vocabulary this half term will be consolidating all the vocabulary met across years 10 and 11.	The vocabulary this half term will be consolidating all the vocabulary met across years 10 and 11.	
CIAG	CIAG	CIAG	CIAG	CIAG	CIAG
	Interpreting real world source information.	Using and interpreting real world cost sheets.			

## Key Stage 4: Year 11 - Food

Overall Curriculum Goals					
<p>To understand and be able to use primary and secondary research skills            To develop critical thinking skills to analyse the functional characteristics of food commodities            To investigate functional characteristic of food commodities related to a hypothesis or prediction.            To develop thorough understanding of nutrition, food provenance, choice, hygiene, safety, science and the working characteristics of food materials.            To execute a range of technical practical preparation skills independently within a given time period            To justify reasons for choice with reference to skills, ingredients, nutrition, cooking methods, costs, provenance, sensory properties and portion size            To demonstrate organisational, planning and evaluation skills</p>					
Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
<p><b>Context-driven NEA 1 coursework.</b></p> <p><b>To include:</b> Research, Development, Hypothesis, Prediction, investigation of working characteristics of food, Testing, Recording Evidence, Analysis</p>	<p><b>Context-driven NEA 2 coursework.</b></p> <p><b>To include:</b> Research, Planning, analysis and evaluation, selecting suitable dishes, Demonstrating understanding of high-level technical skill, suitable finishing</p>	<p><b>Context-driven NEA 2 coursework.</b></p> <p><b>To include:</b> Justification of Choices, recording evidence, Planning through dovetailing, sequencing and timing. Making suitable dishes within a three hour -period. Assessment and evaluation</p>	<p><b>Context-driven NEA 2 coursework.</b></p> <p><b>To include:</b> Justification of Choices, recording evidence, Planning through dovetailing, sequencing and timing. Making suitable dishes within a three hour -period. Assessment and evaluation</p>	<p>Theory work.</p> <p>To include; preparing students for the exam, by recapping on theory topics and working through exam technique using past paper examples.</p>	
Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas	Key Vocabulary/Concepts/Ideas
<p><b>Understand</b> the requirements of the food investigation  <b>Research</b>, plan and carry out an investigation into the working characteristics, functional and chemical properties of ingredients.  <b>Develop</b> research, analysis and evaluation skills and explain findings  <b>Write a hypothesis or prediction</b>  <b>Plan relevant and appropriate</b> investigations.  <b>Carry out a range</b> of practical investigations.  <b>Identify essential controls</b>  <b>Record results from investigation</b> using charts, graphs, tables, sensory.  <b>Testing and annotated</b> photographs. <b>Explain</b> results.  <b>Analyse and interpret the results</b>  <b>Link the results to research</b>  <b>Write a conclusion</b> to the hypothesis/prediction with reasons and justifications.  <b>Explain how results</b> how results can be applied food preparation and cooking</p>	<p><b>Plan and carry out</b> research into chosen life stage, dietary group or culinary tradition.  <b>Develop research skills</b> -gather and use primary and secondary sources <b>Develop analysis and evaluation</b> skills <b>Explain how findings</b> will influence practical investigations.  <b>Present research</b> concise portfolio.  <b>Understand the assessment</b> criteria for the technical demonstration.  <b>Plan</b> appropriate practical activities.  <b>Select a range</b> suitable dishes to trial  <b>Justify suitable</b> technical skill.  <b>Record evidence</b> of technical skills.  <b>Make and</b> showcasing technical skill,  <b>Demonstrate</b> understanding of ingredients and making processes.  <b>Show independence</b> and accuracy.  <b>Work safely and hygienically</b>  <b>Present dishes with</b> a good level of <b>technical skill</b> and with a suitable level of finish and decoration for serving.</p>	<p><b>Understand the assessment</b> criteria.  <b>Make a dishes</b> showcasing technical skill.  <b>.Demonstrate</b> understanding of ingredients and making processes.  <b>Work independence</b> and accuracy.  <b>Work safely and hygienically</b>  <b>Carry out sensory</b> analysis  <b>Evaluate and determine</b> the final menu  <b>Select suitable final dishes</b> to make for the three-hour making session..  <b>Justify reasons for choice</b> size.  <b>Sequence</b> with effective dovetailing of tasks.            technical skills ,finishing techniques, organisational skills and time management.  <b>Demonstrate</b> personal, food ,kitchen hygiene and safety.  <b>Garnish</b> and decorate final dishes n            Complete portfolio of evidence</p>	<p><b>Understand the assessment</b> criteria.  <b>Make a dishes</b> showcasing technical skill.  <b>.Demonstrate</b> understanding of ingredients and making processes. <b>Work independence</b> and accuracy.  <b>Work safely and hygienically</b>  <b>Carry out sensory</b> analysis  <b>Evaluate and determine</b> the final menu  <b>Select suitable final dishes</b> to make for the three-hour making session..  <b>Justify reasons for choice</b> size.  <b>Sequence</b> with effective dovetailing of tasks.            technical skills ,finishing techniques, organisational skills and time management.  <b>Demonstrate</b> personal, food ,kitchen hygiene and safety.  <b>Garnish</b> and decorate final dishes n            Complete portfolio of evidence</p>	<p>The vocabulary this half term will be consolidating all the vocabulary met across years 10 and 11.</p>	
CIAG	CIAG	CIAG	CIAG	CIAG	CIAG
<p><b>A qualification in food and nutrition</b> in can embark on :            As a food Scientist</p>	<p><b>A qualification in food and nutrition</b> students embark on :            Careers in Public Health.</p>	<p><b>A qualification in food and nutrition</b> in can embark on further study in:            The catering industry or working in a restaurant</p>			