

DESIGN & TECHNOLOGY / FOOD PREPARATION & NUTRITION GSA Curriculum Map 2019-20

Curriculum intent statement for Design and Technology and Food Preparation and Nutrition:

**We aim to develop students of Design and Technology who:**

- **Have a coherent framework of knowledge about past and present design, understanding it's impact on daily life and the world around them.**
- **Develop the skills needed to design and make prototypes that solve real and relevant contexts.**
- **Benefit from the opportunity to develop creative, technical and practical expertise.**

**We aim to develop students of Food Preparation and Nutrition who:**

- **Gain knowledge and understanding of the importance of healthy eating and the principles of nutrition.**
- **Build the skills to cook a wide range of predominantly savoury dishes.**
- **Benefit from the opportunity to explore flavours and textures whilst using a variety of techniques and processes.**

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Year 7 &amp; 8</b>						
<b>Topics</b>	FP&N - Healthy eating, nutrition & what makes me healthy.		WMP - Designer clock project.		EMS - Electronic board game / programming.	
<b>Skills</b>	Hygiene and safety. Use of basic tools and equipment. Knife skills. Presentation skills. Different types of raising agent and their uses. Making and shaping a dough. Safe handling of raw meat.		Focussed Practical Task's - Cutting, shaping and finishing wood, metal and plastic. Research skills - The work of others. Writing a specification. Designing. Manufacturing. Product analysis and evaluation.		Use of workshop tools. Soldering electronic components. Programming microcontrollers. Designing – Drawing skills. Research. Analysis and evaluation. Use of CAD and CAM.	
<b>Links</b>	NC: -Understand and apply the principles of nutrition and health. -Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet. -Become competent in a range of cooking techniques.		NC: -Analyse the work of past and present professionals. -Identify and solve their own design problems. -Develop and communicate design ideas -Select from and use specialist tools, techniques, processes, refine their ideas and products against a specification.		NC: -Develop and communicate design ideas. -Use specialist tools, and equipment. -Investigate new and emerging technologies. -Understand more advanced electrical and electronic systems. -Apply computing and use electronics to embed intelligence.	
<b>Year 7 &amp; 8</b>						
<b>Topics</b>	FP&N - The impact that food has on diet, cultures and the environment.		P&B - Packaging and popup book.		TEX - Container and door stop / book weight.	

<b>Skills</b>	Hygiene and safety. Use of basic tools and equipment. Knife skills. Presentation skills. Safe handling of raw meat and fish. Independence and following a recipe. Sauce making – Gelatinisation. Food science - Protein coagulation. Pasta making.	Mechanisms & types of motion. Product analysis. Research skills – The work of others. Vacuum forming / using a mould. 2D Design & laser cutting. Paper engineering. Designing. Drawing and presentation skills. Nets & tessellation.	How to use a sewing machine and overlocker. CAD & CAM in textiles. Pinning and tacking. Inserting a zip. Printing techniques. Applique. Seams. Working with patterns. Research skills – The work of others.
<b>Links</b>	NC: -Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet. -Become competent in a range of cooking techniques. -Understand the source, seasonality and characteristics of a broad range of ingredients.	NC: -Research and analyse the work of others -Create design ideas using annotated sketches -Develop design ideas using different design strategies such as modelling and prototyping. -Problem solving skills to create design solutions. -Use of specialist tools and equipment including CAD/CAM.	NC: -Generate creative ideas. -Develop design ideas using annotated sketches. -Use specialist tools and equipment. -Analyse the work of past professionals. -Understand developments in design and technology and its impact on the environment.

### Year 9

<b>Topics</b>	FP&N - Foods around the world.	WMP - Modelling & development pizza cutter.	EMS - Audio amp.	P&B - CAD / CAM and drawing skills.	TEX - Woven fabrics / decorative techniques.
<b>Skills</b>	Food spoilage. Food poisoning. Different cultures. Shaping and forming. Food presentation. Gelatinisation. Unleavened doughs. Cross contamination. Enriched doughs. Choux pastry. Making a sauce.	Iterative design. Ergonomics and anthropometrics. Templates and modelling. Prototyping and development. Product analysis. Designing for others. Using the lathe.	Use of CAD and CAM. Independent Soldering. Working to a brief and specification. Research. Generating design ideas. Evaluation.	2D Design. Sketch up. One- and two-point perspective. Orthographic presentation. Isometric and oblique. Photoshop.	Fabric construction. Embroidery. Tie dye. Batik. CAD / CAM isub. Printing. Pleating.
<b>Links</b>	NC: -cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet -become competent in a range of cooking techniques	NC -Analyse the work of past and present professionals. -Identify and solve their own design problems -select from and use a wider, more complex range of materials and components.	NC: -Develop and communicate design ideas -Use specialist tools, techniques and equipment. -Understand more advanced electrical and electronic systems.	NC: -Develop and communicate design ideas using different drawing techniques. -Analyse the work of past and present professionals. -Develop skills in CAD creating 3D models and design solutions.	NC: -Use specialist tools and equipment, including computer-aided manufacture. -Analyse the work of past and present professionals.

Year 10 Design and Technology				
Topics	Design Ventura project & theory knowledge.	Treat dispenser & theory knowledge.	Mini NEA & theory knowledge.	Start NEA worth 50% of GCSE 1st June.
Skills	Iterative design skills. Drawing skills. CAD skills. Communication & organisation. Independence.	Cutting and shaping. Using tools & equipment. Finishing skills. Designing skills. CAD/CAM skills.	Iterative design. Working with a client. Writing a design brief and a specification. Designing and developing. Prototyping. Testing and evaluating.	Investigation and research skills. Communication with a client. Iterative design and drawing skills. Development skills. Prototyping and modification skills. Evaluation skills.
Links	3.1 Section A – Core technical principles	3.2 Section B – Specialist technical principles	3.3 Section C – Designing and making principles	3.3 Section C – Designing and making principles

Year 10 Food Preparation & Nutrition						
Topics	Eatwell guide. Classification of nutrients. Macro and micro nutrients, fats, protein, carbohydrates. Nutritional analysis. Introduction to food investigation and understanding NEA 1. Dovetailing time plans.	Vitamins. Fibre. Minerals. Different dietary needs. Life stages. Meal planning. Product development.	Dietary needs based on religious groups. Investigating cooking methods. Why is food cooked and cooking methods.	Food spoilage. Micro-organisms and enzymes. Energy needs and balance. Micro-organisms in food production. Bacterial contamination and types of food poisoning. How bacteria grow and multiply. Factors effecting food choice.	Buying and storing food. Food labelling. Food provenance. Food production. Effects on the environment. Food science fact file.	Primary and secondary food production. Mock exam prep. Food science - emulsions and making a mayonnaise. Mini NEA 2.
Skills	Fresh pasta. Marinating meats. Use of the grill. Shaping and forming. Bread dough. Pastry - quiche. Meringue nests.	Deboning meat. Fajitas. Soup or salad Roux sauce task Whisked sponge (yule log competition).	Product for a specific target group. Breakfast-demonstrating the 3 methods of heat transfer Chicken roulade, mash and veg.	Lasagne - meat filling and a ragu sauce. Deboning meat dish. Meat based product - focusing on cross contamination. Product development.	Chocolate eclairs - choux pastry. Filleting a fish. Fish based product.	Free choice practical based on a given brief linked to NEA 2.
Links	AQA Food Preparation and Nutrition: Specification code 8585.					
	3.2. 3.3. 3.4. 3.5.	3.2. 3.3. 3.4. 3.5.	3.3. 3.4. 3.5.	3.2. 3.4. 3.5.	3.4. 3.5. 3.6.	3.3. 3.5. 3.6.

Year 11 Design and Technology			
Topics	NEA worth 50% of GCSE.		N/A.
Skills	<ul style="list-style-type: none"> <li>Identifying and investigating design possibilities</li> <li>Producing a design brief and specification</li> <li>Generating design ideas</li> <li>Developing design ideas</li> <li>Realising design ideas</li> <li>Analysing &amp; evaluating</li> </ul>		
Links	AQA Design and Technology: Specification code 8552. <ul style="list-style-type: none"> <li>AO1</li> <li>AO2</li> <li>AO3</li> </ul>		

Year 11 Food Preparation & Nutrition					
Topics	NEA 1 15%.	NEA 2 35%.	Exam revision 50%.	N/A.	N/A.
Skills	Researching. Investigating. Evaluating.	Research. Trialling dishes. Dish development. Planning. Evaluating.	Covering the AQA criteria.		
Links	AQA Food Preparation and Nutrition: Specification code 8585.				

- FPN – Food Preparation & Nutrition.
- WMP – Wood, Metal & Plastic.
- TEX – Textiles.
- P&B – Paper and Board.
- EMS – Electrical and Mechanical Systems.

NEA – Non-Examined Assessment.

Y7&8 Students rotate approximately every 12 weeks. They will complete a rotation of FNP in both Y7&8, then WMP, TEX, P&B and EMS across Y7&8.

Y9 Students rotate approximately every 7 weeks.

Year 12 Design & Technology: Product Design						
	Autumn 1		Autumn 2		Spring 1	
	Theory	NEA Prep		NEA Prep	Theory	NEA Prep

Topics	<ul style="list-style-type: none"> <li>Materials and their applications.</li> <li>Performance characteristics of Materials.</li> </ul>	<p>A series of small, skill based projects to provide students with the skills needed to complete the individual NEA plus Designing and making principals:-</p> <ul style="list-style-type: none"> <li>Design methods and processes.</li> <li>Design Theory.</li> <li>Enhancement of Materials.</li> <li>Forming, redistribution and addition processes - Paper and board forming processes.</li> <li>Use of adhesives and fixings.</li> <li>Jlgs and fixtures.</li> <li>Cad and Cam</li> </ul>	<ul style="list-style-type: none"> <li>Performance characteristics of Materials.</li> <li>Enhancement of Materials.</li> </ul>	<p>As Autumn 1 with:-</p> <ul style="list-style-type: none"> <li>Design processes.</li> <li>Forming, redistribution and addition processes - Polymer processes.</li> </ul>	<ul style="list-style-type: none"> <li>Forming, redistribution and addition process.</li> <li>The use of adhesives and fixings.</li> <li>The use of finishes.</li> </ul>	<p>As Autumn 1 and 2 with:-</p> <ul style="list-style-type: none"> <li>Critical analysis and Evaluation.</li> <li>Forming, redistribution and addition processes - Metal processes.</li> <li>Forming, redistribution and addition processes - temp and permanent joining methods.</li> </ul>
Skills	<ul style="list-style-type: none"> <li>Research, investigation, analysis and gaining understanding of topics..</li> <li>Application of knowledge to existing products and design proposals.</li> </ul>	<ul style="list-style-type: none"> <li>The use and application of a selection of Wood preservatives/finishes/and Coatings.</li> <li>The use and application of a selection of Metal Case hardening, hardening and tempering.</li> <li>The use and application of a selection of Die cutting, Laser cutting, creasing and bending in paper and board.</li> </ul>	<ul style="list-style-type: none"> <li>Research, investigation, analysis and gaining understanding of topics..</li> <li>Application of knowledge to existing products and design proposals.</li> </ul>	<ul style="list-style-type: none"> <li>The use and application of a selection of Vacuum forming / Thermoforming, calendering, line bending, laminating, injection moulding, blow moulding, rotational moulding, extrusion and compression moulding.</li> </ul>	<ul style="list-style-type: none"> <li>Research, investigation, analysis and gaining understanding of topics..</li> <li>Application of knowledge to existing products and design proposals.</li> </ul>	<ul style="list-style-type: none"> <li>The use and application of a selection of:- Press forming, spinning, cupping, deep drawing, forging, drop forging, bending, rolling, casting - sans, die, investment and low temperature.</li> <li>Metal inert gas, tungsten inert gas, spot and oxy-acetylene welding. Soldering, brazing, riveting, temporary - self tapping, machine screws and nuts and bolts.</li> </ul>
Links	Theory Units 3.1.1 / 3.1.2 /	Theory Units 3.2.1 / 3.2.2 / 3.1.3 / 3.1.4 / 3.1.7	Theory Units 3.1.2 / 3.1.3	Theory Units 3.2.4 / 3.1.4 /	Theory Units 3.1.4 / 3.1.4.5 / 3.1.5	Theory Units 3.2.5 / 3.1.4 /

### Year 12 Design & Technology: Product Design

	Spring 2		Summer 1		Summer 2	
	Theory	NEA Prep	Theory	Real NEA	Theory	Real NEA

Topics	<ul style="list-style-type: none"> <li>• Modern industrial and commercial practice.</li> <li>• Digital design and manufacture.</li> <li>•</li> </ul>	As Autumn 1/2 and spring 1 with:- <ul style="list-style-type: none"> <li>• Forming, redistribution and addition processes - Wood wasting processes.</li> <li>• Wood joining.</li> <li>• Metal finishes.</li> <li>• Wood finishes.</li> </ul>	<ul style="list-style-type: none"> <li>• The requirement for product design and development</li> <li>• Health and Safety.</li> <li>• Protecting designs and intellectual property.</li> </ul>	<ul style="list-style-type: none"> <li>• Start of real NEA portfolio</li> </ul>	<ul style="list-style-type: none"> <li>• Design for manufacturing, maintenance, repair and disposal.</li> <li>• Design Communication</li> <li>• Feasibility studies.</li> <li>• Enterprise and marketing in product development.</li> </ul>	<ul style="list-style-type: none"> <li>• Real NEA portfolio</li> </ul>
Skills	<ul style="list-style-type: none"> <li>• Research, investigation, analysis and gaining understanding of topics..</li> <li>• Application of knowledge to existing products and design proposals.</li> </ul>	<ul style="list-style-type: none"> <li>• The use and application of a selection of:- Milling, turning, flame cutting, plasma cutting, laser cutting and punch/stamping.</li> <li>• The use and application of a selection of :- Addition/fabrication processes. Traditional wood joints, component jointing.</li> <li>• Laminating, steam bending, machine processes.</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Research, investigation, analysis and gaining understanding of topics..</li> <li>• Application of knowledge to existing products and design proposals.</li> </ul>	<ul style="list-style-type: none"> <li>• AO1 Section A -identifying and investigating design possibilities.</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Research, investigation, analysis and gaining understanding of topics..</li> <li>• Application of knowledge to existing products and design proposals.</li> </ul>	<ul style="list-style-type: none"> <li>• AO2 Section c - Development of Design proposals.</li> </ul>
Links	Theory Units 3.1.6 / 3.1.7 /	Theory Units 3.1.4 /	Theory Units 3.1.8 / 3.1.9 / 3.1.10 /		Theory Units 3.1.11 / 3.1.12 / 3.1.13 /	

**Year 13 Design & Technology: Product Design**

	Autumn 1		Autumn 2		Spring 1	
	Theory	Real NEA	Theory	Real NEA	Theory	Real NEA
Topics	<ul style="list-style-type: none"> <li>• Technology/cultural changes and the impact on designers.</li> <li>• Product life Cycle.</li> <li>• Selecting tools, equipment and processes.</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Real NEA portfolio</li> </ul>	<ul style="list-style-type: none"> <li>• Accuracy in design and manufacture.</li> <li>• Responsible Design.</li> <li>• Design for manufacture and project management.</li> <li>• National and international standards</li> </ul>	<ul style="list-style-type: none"> <li>• Real NEA portfolio</li> </ul>	<ul style="list-style-type: none"> <li>• Real NEA portfolio</li> </ul>	<ul style="list-style-type: none"> <li>• Real NEA portfolio</li> </ul>
Skills	<ul style="list-style-type: none"> <li>• Research,</li> </ul>	<ul style="list-style-type: none"> <li>• AO2 Section c -</li> </ul>	<ul style="list-style-type: none"> <li>• Research,</li> </ul>	<ul style="list-style-type: none"> <li>• AO2 Section C -</li> </ul>	<ul style="list-style-type: none"> <li>• AO2 Section C - Development</li> </ul>	<ul style="list-style-type: none"> <li>• AO2 Section C - Development</li> </ul>

	investigation, analysis and gaining understanding of topics.. <ul style="list-style-type: none"> <li>• Application of knowledge to existing products and design proposals.</li> </ul>	Development of Design proposals - continued.	investigation, analysis and gaining understanding of topics.. <ul style="list-style-type: none"> <li>• Application of knowledge to existing products and design proposals.</li> </ul>	Development of Design prototypes	of Design prototypes	of Design prototypes
Links	Theory Units 3.2.3 / 3.2.3.4 / 3.2.6		Theory Units 3.2.7 / 3.2.8 / 3.2.9 / 3.2.10			

Year 13 Design & Technology: Product Design

Year 13 Design & Technology: Product Design						
	Spring 2		Summer 1		Summer 2	
	Theory	Real NEA	Theory		Theory	
Topics	<ul style="list-style-type: none"> <li>• Real NEA portfolio</li> <li>• Exam Prep - Exam technique.</li> <li>• Revision techniques.</li> </ul>	<ul style="list-style-type: none"> <li>• Real NEA portfolio</li> </ul>	<ul style="list-style-type: none"> <li>• Exam Prep - Exam revision.</li> </ul>	<ul style="list-style-type: none"> <li>• External Exams</li> </ul>		
Skills	<ul style="list-style-type: none"> <li>• A03 Section E - Analysing and Evaluation.</li> <li>• Understanding questions, what is asked for.</li> <li>• Point, evidence, example.</li> <li>• Reading questions.</li> <li>• Revision techniques</li> </ul>	<ul style="list-style-type: none"> <li>• A03 Section E - Analysing and Evaluation</li> </ul>	<ul style="list-style-type: none"> <li>• As spring 2</li> </ul>	<ul style="list-style-type: none"> <li>• External Exams</li> </ul>		
Links			All Theory sections			