

Wollaston School: 2019/20 Curriculum Map for Design Technology

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***Curriculum Aim & Scope:** We study a range of design contexts across all material bases. This allows students to consider their own and others' needs, wants and values. At Key Stage 3 this is to ensure that all students acquire a broad range of skills and develop subject knowledge and a range of key life skills. Learning incorporates a range of subjects across the curriculum as well as focuses on industry, culture, environmental, moral and social issues. This is refined further as students move into KS4. Our students learn to take risks and develop their resilience when designing and realising products.*

KS3	KS3		
	Food and Nutrition -	Product Design -	Textiles –
Year 7	<p>Learning/Skills: Peeling, chopping, rubbing –in and combining ingredients, the foundations of nutrition and healthy eating. Functions of ingredients. Key technical language.</p> <p>Assessment: Theory and practical assessment (Apple Crumble, Jam Tarts and DMT Pizza)</p> <p>NC links:</p> <ul style="list-style-type: none"> • using utensils and electrical equipment • Show understanding of health and nutrition (balanced diet) • use a ingredients, taking into account their properties • test and evaluate • understand basic ingredients • cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet 	<p>Learning/Skills: Technical Drawing, Scale Drawing, understanding of timbers & aluminium, Fine motor skills – using a range of tools for hand manufacturing skills, introduction to 2D-Design, Estimating surface area, Rendering, Analysis, Evaluation. Key technical language.</p> <p>Assessment: Theory and practical assessment.</p> <p>NC links:</p> <ul style="list-style-type: none"> • identify and solve their own design problems and understand how to reformulate problems given to them • Use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture • understand and use the properties of materials and the performance of structural elements to achieve functioning solutions • test, evaluate and refine their ideas • understanding of manufacturing and construction • use computer based tools 	<p>Learning/Skills Understanding and applying health and safety in the classroom. Speed and control of the sewing machine. Inserting a zip. Developing skills of a design brief and design specification. Key technical language.</p> <p>Assessment: Theory and practical assessment</p> <p>NC links:</p> <ul style="list-style-type: none"> • develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations • Use a range of materials, components • use research and exploration to identify and understand user needs • test, evaluate products against a specification, taking into account the views of intended users and other interested groups • understanding of manufacturing and construction

<p>Year 8</p>	<p>Learnings/Skills: To build on existing knowledge of nutrition and examine and produce dishes from a range of commodities. Meat preparation, use of standard components like flour. Key technical language.</p> <p>Assessment: Theory and practical assessment (Yeast Based Pizza, Pasta Bake and Quiche).</p> <p>NC links:</p> <ul style="list-style-type: none"> • Understand and apply the principles of nutrition and health • Develop a range of cooking techniques • understand the protein and link to recipes and practical • use ingredients, taking into account their properties • cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet • build on a range of cooking techniques 	<p>Learning/Skills: Isometric Drawing, Scale Modelling, understanding of timbers & acrylic, CAM Manufacturing skills, 2D-Design, Calculating Material costs, Shade & Shadow, Analysis, Evaluation. Key technical language.</p> <p>Assessment: Theory and practical assessment</p> <p>NC links:</p> <ul style="list-style-type: none"> • Select from a range of specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture • understand and use the properties of materials and the performance of structural elements to achieve functioning solutions • identify and solve their own design problems and understand how to reformulate problems given to them • develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools 	<p>Learning/Skills: Understand fabric properties and characteristics, product analysis, technical surface decoration skills. Measuring and modelling, basic pattern making. Investigating smart materials. Manufacturing and finishing techniques. Key technical language.</p> <p>Assessment: Theory and practical assessment</p> <p>NC links:</p> <ul style="list-style-type: none"> • investigate new and emerging technologies • develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools • understand and use the properties of materials and the performance of structural elements to achieve functioning solutions • select a range of tool, materials, components • identify design problems and understand how to reformulate problems given to them
<p>Year 9</p>	<p>Learning/Skills: Higher order making skills and start to develop their food science knowledge for preparation for GCSE (9-1). Key technical language</p> <p>Assessment: Theory and practical assessment (High Protein/Low Fat Dish, Lemon Meringue Pie and Cuisine 1 Practical)</p> <p>NC links:</p>	<p>Learning/Skills: Isometric Drawing, Scale Modelling, understanding of timbers & acrylic, CAM Manufacturing skills, 2D-Design, Calculating Material costs, Shade & Shadow, Analysis, Evaluation. Key technical language.</p> <p>Assessment: Theory and practical assessment</p> <p>NC links:</p>	<p>Learning/Skills: Fibres and Fabrics investigation, product analysis, practical skills, designing and development, advanced sewing machine skills. Independent paper pattern making. Key technical language.</p> <p>Assessment: Theory and practical assessment</p> <p>NC links:</p>

	<ul style="list-style-type: none"> • 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 • Prepare ingredients independently and with skill, considering properties learnt across KS3 • Adapting and using own recipes • Select from a range of specialist tools, techniques, processes, equipment. • competent in a range of cooking techniques 	<ul style="list-style-type: none"> • Select from a range of specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture • understand and use the properties of materials and the performance of structural elements to achieve functioning solutions • identify and solve their own design problems and understand how to reformulate problems given to them • develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools • understand how more advanced mechanical systems used in their products enable changes in movement and force 	<ul style="list-style-type: none"> • use research and exploration, such as the study of different cultures, to identify and understand user needs • identify and solve their own design problems and understand how to reformulate problems given to them • develop on understanding of specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations • independently select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture (where appropriate) • use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses
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Design Technology (Product Design)	Autumn 1 -	Autumn 2 -	Spring 1 –	Spring 2 -	Summer 1 –	Summer 2 -
Year 10 AQA	<p>Learning/Skills: Timbers: Sources, Conversion, Seasoning, Properties, Faults, Stock Forms Project: Design Process, Product Analysis, User Profile, Design Brief & Specification, Idea Sketching Sketching: 2D Sketching, Oblique, Perspective Assessment: Product Analysis, Timbers Test</p>	<p>Learning/Skills: Timber: Surface Treatments, Joining Techniques Project: Rendering, Thick & Thin Lines, TM Questionnaires, Idea Modelling Sketching: Isometric, Orthographic & Exploded Drawing Theory: Anthropometrics & Ergonomics, Graphs, Bar Charts & Pictograms, Data Analysis Development: Modelling Techniques, Innovation,</p>	<p>Learning/Skills: Timber: Dowels, Hinges & Knockdown fittings, Joint Construction Project: Development drawing, Designing for Manufacture, Technical Drawings, Cutting Lists Theory: Energy Generation & Storage Assessment: Timbers Joining Test, Mortice & Tenon Joint Construction</p>	<p>Learning/Skills: Timber: Wood Joint Testing & Analysis, Jigs, Templates & Patterns, Tolerance & QC Project: Production plan, Practical (Marking out, cutting, shaping, joining) Materials: Metals, Plastics, Textiles, Papers & Boards Theory: Companies, New Materials Assessment: Timbers Wood Joints Test, Materials Polymers HW</p>	<p>Learning/Skills: Project: Finishing, User Testing, Evaluation Theory: New & Emerging Technologies, Enterprise, Technology Push / Market Pull, Designers, Production Techniques (CAD, CAM, JIT, TQM), Planned Obsolescence, Forces & Stresses, Design Strategies Assessment: The Work of Designers (HW), Mock Examination</p>	<p>NEA (Non Examination Assessment): Introduction, Analysis of Task, User/Client Profile, Moodboard, Impact on Society, Brief, Specification Assessment: User/Client Profile, Existing Products, Brief & Specification</p>

		Functionality, Aesthetics, Marketability Assessment: Iso - Ortho Exercises, Drawing Skills Test, Product Analysis Sheet				
Year 11 AQA	NEA: Research Plan, Design Sketches, Design Detailing, Research Assessment: Research Plan, Design Ideas	NEA: Development, Presentation Drawing, Technical Drawings Assessment: Mock Exam, Development	NEA: Cutting List, Production plan, Practical Theory: Impact on Production, Impact on Industry, Computer Based Tools Assessment: Production Plan, Impact on Industry worksheet	NEA: Practical cont., Testing, Evaluation, LCA Theory: Mechanical Systems, Electronic Systems Assessment: NEA Final Grade, Mechanical Systems worksheet	Examination	NA

Vehicle Engineering	Autumn 1 -	Autumn 2 -	Spring 1 –	Spring 2 -	Summer 1 –	Summer 2 -
Year 10	L1CAM01 & L1CAM02 L2CAM01 & L2CAM02 H&S, Tools & Equipment, Brakes Assessment: Mock Entry test	L1CAM01 & L1CAM02 L2CAM01 & L2CAM02 Suspension Assessment: Practical 1	L1CAM01 & L1CAM02 L2CAM01 & L2CAM02 Electrical Assessment: Practical 2	L1CAM01 & L1CAM02 L2CAM01 & L2CAM02 Fittings Assessment: Practical 3	L1CAM01 & L1CAM02 L2CAM01 & L2CAM02 Tyres Assessment: Practical 4	L1CAM01 & L1CAM02 L2CAM01 & L2CAM02 Engines Work Experience – 2 weeks Assessment: Practical 5
Year 11	ET113/213 – Major Project ET130/230 - Continued Assessment: ET112/212 Mock	ET113/213 – Major Project ET130/230 - Continued Assessment: ET112/212 Online	ET115/PSD06 – Working in Engineering environment ET130/230 - Continued Assessment: ET116/216 Mock	Optional Modules C/W sign off ET130/230 - Continued Assessment: ET116/216 Online	Optional Modules C/W sign off Assessment: ET114/214 Online	

Design Technology (Textiles)	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 10	<p>Learning/Skills: THEORY: Knowledge of textiles and technical understanding including sustainability, sources, manufacturing, processes and environmental impact.</p> <p>PROJECT: Writing a brief, product analysis and specification writing. Exploring the work of other fashion designers.</p> <p>Assessment: Textiles core test Brief and task analysis Mood boards – Work of others</p>	<p>Learning/Skills: THEORY: Gathering of information, questionnaires, testing fabrics, treatments and finishes.</p> <p>PROJECT: Mini NEA designing and developing skirt/shorts project based on designer of their choice. Sketching and presentation of fashion illustrations. Modelling/pattern making.</p> <p>Assessment: Core Timbers Homework Investigation/product analysis. Design ideas</p>	<p>Learning/Skills: THEORY: People and cultures, tolerances, systems and production, planning for manufacture.</p> <p>PROJECT: Mini NEA manufacturing, decoration and construction. Fastenings, fabrics selection including stabilising and shaping materials. Technical drawings.</p> <p>Assessment: Core Plastics and polymers Development of final product. Final Design.</p>	<p>Learning/Skills: THEORY: scale of production, technical textiles, tools and equipment</p> <p>PROJECT: Mini NEA Production plan. Practical/construction of final product.</p> <p>Assessment: Core Paper and boards Planning.</p>	<p>Learning/Skills: THEORY: finishing techniques, modification, testing.</p> <p>PROJECT: Finishing, user testing, modifications</p> <p>Assessment: Core metals and alloys Final practical piece. Evaluation and modifications. Mock Examination</p>	<p>NEA (Non Examination Assessment): Introduction, Analysis of Task, User/Client Profile, Research pages, Impact on Society, Brief, Specification</p> <p>Assessment: User/Client Profile, Existing Products, Brief & Specification</p>
Year 11	<p>Core Paper and Boards NEA: research includes researching a given context. Analysing existing products for improvement/change. Creating and analysing a mood board. Targeting a client/target market and a client profile. Shop profile to identify need for development. Creating a questionnaire with results, data and analysis. Additional related research which</p>	<p>Core Social, Morals, Ethics and Cultural study. NEA: initial ideas and development. Includes ideas and experimenting with technical sampling and modelling. Toile making client feedback further research</p>	Assessment: Final NEA	Assessment: Final NEA	EXAMINATION	

	<p>Students will complete a mock internal assessment</p> <p>Nutrients, nutritional needs of specific groups of people.</p> <p>Unsatisfactory nutritional intake.</p> <p>Assessment: Time plan, Comparison activity</p>	<p>Students will complete a mock internal assessment. Students will learn the impact of cooking methods on nutritional value. Menu planning – meeting the customers’ needs. Environmental issues.</p> <p>Assessment: Mock controlled assessment, Mock practical.</p>	<p>Students will start the ‘live’ internal assessment.</p> <p>Assessment: External controlled assessment</p>	<p>Students will continue the live internal assessment.</p> <p>Assessment: Food practical exam</p>	<p>Students will complete their assessment. They have to resit will start revision lessons.</p>	<p>Resits</p> <p>Assessment: External Exam (Resit paper)</p>
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