

Links to KS2	<p><b>Key prior knowledge and skills</b> Year 7 Pupils arrive to Warneford with a variety of different skills &amp; knowledge, depending on the experiences in their previous schools. There is an initial assessment by the class teacher, so that students can quickly built upon their knowledge where needed. ☑</p> <p>Across KS3, all students have 4 hours a fortnight and rotate across the different subjects within D &amp; T, spending approximately 12 weeks in each of the subject areas. Students have the opportunity to work in the specialist rooms and material areas each year. The Department has SOWs with clear assessment criteria in place which map out flight path progression for all students. Standardisation of assessment takes place to ensure robust quality assurance against grading criteria.</p>				
Intent	<p><b>Statement of Intent</b></p> <p>Design and Technology is an inspiring, rigorous and practical subject. It encourages children to learn to think and intervene creatively to solve problems both as individuals and as members of a team. At Warneford, we are committed to delivering a modern and engaging curriculum, providing a broad range of knowledge, skills, understanding and opportunities for all students using a wide variety of activities. We have high expectations of all our learners and lead by example, ensuring work is completed to the best of their ability, whilst allowing students to be creative and take risks in a safe and positive learning environment, encourage children to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. We aim to, wherever possible, link work to other disciplines such as mathematics, science, engineering, computing and art. The children are also given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness and are encouraged to become innovators and risk-takers.</p>				
Implementation Year 7	Timeline	Rotation 1 - Food and Nutrition	Rotation 2 - Textiles	Rotation 3 - Product Design	
	Year Overview	<p>In Year 7 students have 4 hours a fortnight and rotate across the different subjects within D &amp; T, spending approximately 12 weeks in each of the subject area. Students have the opportunity to work in the specialist rooms and material areas each year. Each year is planned to ensure that students make progress as all KS3 projects are mapped against their respective GCSE curriculums</p>			
	SOW	<p>Health and safety in the food rooms, healthy eating, food provenance, becoming independent learners in the food room <i>Practical skills: Variety hand skills, chopping, slicing, grating Rubbing in Making bread Shaping &amp; forming dough</i></p>	<p>Health and safety in the Textiles room, the different types of fibres and their provenance, how fibres are made into fabrics. <i>Practical skills include: pinning, tacking, sewing with the machine, measuring and colouring fabrics using transfer crayons and using an iron.</i></p>	<p>Health and safety in a workshop. Wooden storage, plastic pencil holder- working with hand tools and and machines, provenance and sustainability of wood and plastic. <i>Practical skills include: Introduction to working with hand tools and various machines, designing using CAD.</i></p>	
	Unit Focus	<p>In Year 7 students will build upon KS2 learning &amp; knowledge. To give a basic grounding of Health and safety and working in the Food rooms. To understand the provenance and where our food comes from, and to have an understanding of their properties and uses.</p> <p><b>Topics include:-</b>  Why we need food,  Introduction to nutrients  Eat well guide  Using cooker- methods heat transfer, conduction, convection &amp; radiation  Food commodities, milk, fish, meat, fruit, vegetables  Understand simple food investigation  Range recipes to link with eat well guide</p>	<p>In Year 7 we build upon their KS2 knowledge, making sure they are aware of health and safety and introduce different fibres, investigating where they come from and how they are made. They develop their sewing machine skills so pupils become independent for future years.</p> <p><b>Topics include:-</b>  To know where man made and natural fibres originate  To know that fibres can be made into fabric by knitting, weaving and bonding  To be able to weave a plain and a twill weave  To learn the main parts of the sewing machine  To be capable of threading and using the sewing machine with no help  To learn the 6R's and be able to give a textile example  To know the Fairtrade logo.</p>	<p>In Year 7 students build upon their KS2 knowledge of working with materials . We introduce workshop health and safety, developing new skills using a variety of traditional hand tools and machinery. Types of plastics, woods, softwood, hardwood, manufactured boards.</p> <p><b>Topics include:-</b>  To know how plastics are made- that natural and finite are resources used.  The types and provenance of timbers and their uses.  Identifying workshop hand tools and machinery.  Develop Orthographic drawing skills  Applying numeracy to the work.  CAD - to be able to confidently use 2D design. To appreciate how CAD and CAM can be used to make multiple products easily, cheaply etc.</p>	
Implementation Year 8	Year Overview	<p>In Year 8 students have 4 hours a fortnight and rotate across the different subjects within D &amp; T, spending approximately 12 weeks in each of the subject area. Students have the opportunity to work in the specialist rooms and material areas each year. Each year is planned to ensure that students make progress as all KS3 projects are mapped against their respective GCSE curriculums</p>			
	SOW	<p>To develop knowledge gained in Year 7 to explore nutrients in more depth, introduce why we choose foods for different social, moral and ethical reasons. To continue to develop practical skills. <i>Practical skills include: such as chopping, slicing, rubbing in, bread making.</i></p>	<p>Students will build upon the skills from year 7 and introduce new ways to embellish fabrics, to gain an appreciation of how textile items are made in industry. They develop an understanding of the social, moral and ethical views to the ways everyday clothes are made. <i>Practical skills include: Embellishing with embroidery, applique using Bondaweb, tacking, inserting a zip and creating straight stitch and zigzag stich. They are develop knowledge of using a pattern to create a 3D shape.</i></p>	<p>Students will build on their KS2 electronics and systems knowledge, by building a circuit for torch and develop new skills such as soldering, packaging and working with metal. <i>Practical skills include: soldering, 2D Design development, manufacture, creating NETs, working with metal</i></p>	
	Unit Focus	<p>To gain a deeper understanding of nutrients To understand what factors affect food choice, including moral. Social and environmental factors To look at primary-secondary processing of foods such as wheat To develop their understanding of what a control is, how to complete and write up.</p> <p><b>Topics include:-</b>  To know that Nutrients can be divided into - Macro and micro  To understand the different nutritional needs of different groups of people and that this depends on many factors  To appreciate some of the factors affecting food choice. Understanding the moral, ethical and environmental factors  To learn how cereals, bread, pasta is made  To be able to apply a simple formula to cost recipes  To explore the different allergens that can affect people such as coeliac disease  To be able to plan and complete a science experiments looking at the viscosity of sauces  Continue to develop practical skills by cooking a range of recipes</p>	<p>To learn different ways materials can be embellished. To develop and enhance sewing machine skills. To explore the Pop Art design movement and apply it to their designs.</p> <p><b>Topics include:-</b>  Naming embroidery stitches, creating a pencil case using a variety of techniques  Be able to use the sewing machine with no help  Explain what Smart Materials are and be able to give some examples,  Explain how to care for clothing by being able to identify different care label symbols  Explain what a material property is and be able to apply to different products</p>	<p>To follow a set of instructions clearly, Understand and apply knowledge of electrical systems. Explain how products can be manufactured in industry. Create a manufacturing flow chart. Select and use the correct symbols to draw a flow chart.</p> <p><b>Topics include:-</b>  To be able to identify different electrical components and their relevant symbols  To know the difference between an input, process and output  To draw on knowledge from science to identify series and parallel circuits  To know the difference between an AC and DC current  To understand the importance of jigs and templates when making in quantity.</p>	

Implementation Year 9	Year Overview	In Year 9, students spend approximately 12 weeks in 3 subject areas, the subject content is again mapped against their respective GCSE specification, this enables students to deepen their knowledge and skills further in preparation of GCSE.			
	SOW	The aim to prepare pupils for KS4 by building upon previous knowledge. During the scheme of work students will gain an understanding of the importance of correct temperature control, common food poisoning bacteria and how to reduce the risk of food poisoning and investigate chemical, mechanical and biological raising agents. They will also complete a science investigation. <i>Practical skills include -</i>	The aim is to prepare pupils for KS4 by building upon previous knowledge. During the scheme of work students will gain an understanding of graphic based materials and their uses in the wider world. They will develop practical skills required for GCSE and learn different ways graphic based materials can be used and explore ethical/Fairtrade products <i>Practical skills include -</i> <i>Generate design ideas and development using ICT</i> <i>Explore typography suitable for chocolate packaging.</i> <i>Produce prototype packaging using card, paper and nets.</i>	The aim to prepare pupils for KS4 by building upon previous knowledge. In this scheme of work they develop their knowledge of simple mechanisms learnt in KS2 science and introduce more complex mechanisms. They will have an understanding of how they work and where they might find them in everyday life. They will build on their practical skills by working with wood and card <i>Practical skills include - making a wooden clock or box using finger joints with a marquetry veneered face .</i>	
	Unit Focus	In Year 9 students further develop their skills in preparation for KS4. <b>Topics include:-</b> To know the main temperatures required to keep food safe To know the main sources of bacterial contamination To be able to name at least 3 different food poisoning bacteria To have an understanding of organic, free range, line caught foods To be able to explain the difference between chemical, mechanical and biological raising agents To conduct a Food science investigation looking at biological raising agents Develop practical skills by creating more technically advance recipes.	The aim to prepare pupils for KS4 by building upon previous knowledge. <b>Topics include:-</b> Research designer responsibilities both from an environmental and moral viewpoint. Generate design ideas for a client after research and development using ICT and drawing techniques. All designs must be communicated visually and through detailed annotation. Produce a detailed design specification that meets the needs of the client Explore typography suitable for chocolate packaging. Experiment with your design ideas developing and changing them if necessary to ensure that you have met the design specification. Produce prototype packaging using card, paper and nets	The aim to prepare pupils for KS4 by building upon previous knowledge. <b>Topics include:-</b> Explain the effect different mechanisms have on movements Describe the 4 types of motion and the 4 types of forces Explain the 3 classes of levers and 3 types of linkages To be able to label the different parts of a cam To know how gears work to speed up or slow down movement Demonstrate what is meant by an Orthographic & isometric drawing	
Implementation Year 10: Food Preparation & Nutrition	Year Overview	During Year 10 students cover all of the theory work and focus on building up practical skills by cooking high level dishes once a week in preparation for both NEAs in Year 11.			
	SOW	Year 10: Interwoven through the practical tasks: skills requirements Knife skills, preparation and techniques, cooking methods, sauces, set a mixture, raising agents, dough, judge and manipulate sensory qualities. The four units will be spread out over the 6 terms.			
	Unit Focus	Unit 1 - Nutrition. The relationship between diet and health. The nutritional needs and dietary needs of different people. Nutrition needs when selecting recipes for different groups of people. Energy balance and nutrients.	Unit 2 - Food. Food provenance including food sources, supply, processing and production. Food security, Technological developments, culinary traditions and factors influencing food choice.	Unit 3 - Cooking and food preparation. Including Food science, sensory properties and food safety	Unit 4 - Mini NEA 2 mock up. Students will be given a brief that they are to research and select a dish that they feel matches it. Students will then prepare, cook and present their chosen dish as an assessed practical. The final dish will be evaluated.
Implementation Year 11: Food Preparation & Nutrition	Year Overview	Year 11: Students will complete two pieces of coursework worth, in total, 50% of the final grade. NEA 1 coursework task is released on 1st September, NEA 2 is released on 1st November. Students will also sit their mock exam, final three hour practical and revise for their final written exam (worth 50% of the final grade).			
	SOW	NEA 1 (15% final grade). Students will demonstrate their Food Science knowledge through this piece of coursework.	NEA 2 (worth 35% final grade). Students will demonstrate their Food preparation and Nutrition skills through this piece of coursework. Mock exams and focused revision will also be completed during this time.	Revision for final written exam worth 50% of the final grade.	
	Unit Focus	The unit focus will vary each year depending on the brief given by the exam board. It will focus on an aspect of Food Science. The students will complete 3 food science investigations, analyse and evaluate against the brief.	The unit focus will vary each year depending on the brief given by the exam board. It will focus on an aspect of Food Nutrition. Students will research their chosen brief then plan, prepare, cook and present their final three dishes in their 3 hour practical exam. Students will then analyse and evaluate their practical exam against the brief.	Students will complete focused revision activities to aid them in preparation for their written exam.	
Year 10: Child Development	Year Overview	Year 10 will begin by completing LO1, which is an introduction to the course. They will then complete a piece of coursework, either R058 or R059, this will change each year so that they are completing the same piece of coursework as the current year 11s. Each piece of coursework is worth 30%. The coursework task completed in Year 10 will be submitted for awarding in the summer between Years 10 and 11. New tasks for R058 and R059 are released on the 1st June.			
	SOW	LO1: Introduction to Child Development course, structure and units. Reproduction and the roles and responsibilities of parenthood.	Completing coursework either R058 or R059.	LO2: Understanding antenatal care and preparation for birth	LO3: Understand postnatal checks, postnatal provision and conditions for development.  Begin completing the second piece of coursework either R058 or R059.

Implementation	Unit Focus	Factors affecting the decision to have children, preconceptional health, methods of contraception, reproduction systems.	R058 - Understanding the equipment and nutritional needs of a child 0-5 years old. R059 - Understanding the development of a child birth to 5 years old.	The roles of health professionals, routine checks in pregnancy, stages of labour, pain relief.	Postnatal checks, conditions for development, premature babies, need for approaches to discipline.	R058 - Understanding the equipment and nutritional needs of a child 0-5 years old. R059 - Understanding the development of a child birth to 5 years old.	
	Year Overview	Year 11 will continue to complete the coursework started in the summer of Year 10. Students will sit their mock exam before Christmas before returning to the final section of theory before beginning to revise for their final exam worth 40% of the final grade.					
	SOW	Finish completing the coursework started at the end of year 10, either R058 or R059. Students will revise for the mock exam.	LO4: Understand how to recognise, manage and prevent childhood diseases LO5: Know about child safety	Revision for final written exam worth 40% of the final grade.			
Implementation Year 11: Child Development	Unit Focus	R058 - Understanding the equipment and nutritional needs of a child 0-5 years old. R059 - Understanding the development of a child birth to 5 years old. Students will complete focused revision activities to aid them in preparation for their mock written exam.	LO4: Recognising and treating common illnesses, needs of an ill child, diet related illnesses. LO5: Creating a safe environment, safety labelling, common childhood accidents, social and internet safety.	Students will complete focused revision activities to aid them in preparation for their written exam.			
	Year Overview	During Year 10 there is a focus on the knowledge required for the written exam from September through to May, covering three sections of the specification - Core technical principles, Specialist technical principles, Designing and making principles, this is taught through a combination of practical and theory based lessons. We focus on woods, plastics and metals and use these materials to develop practical skills required for the NEA in Year 11.					
	SOW	3.1.1 New and emerging technologies	3.1.2 Energy generation and storage 3.1.3 Developments in new materials	3.1.4 Systems approach to designing 3.1.5 Mechanical devices 3.1.6 Materials and their working properties	3.2.1 Selection of materials or components 3.2.5 Using and working with materials	Design Strategies 3.3.4 Communication of ideas 3.3.5 Ecological and social footprint 3.2.3	AO1 Identify, investigate and outline design possibilities
Implementation Year 10: Product Design	Unit Focus	<b>Theory</b> - Introduction to course, core technical principles - <b>Practical</b> - back to basics - wood joints - Tools and machinery training/development.	<b>Theory</b> - Energy generation and storage, Developments in new materials <b>Practical</b> - Wooden safe project - templates, jigs, mould, gluing, clamping, scales of production. CAD - 2D Design/TinkerCAD	<b>Theory</b> - Design movements, mechanisms, systems, materials <b>Practical</b> - Vacuum formed clock, Design movement tea coaster.	<b>Theory</b> - Metals, communication of ideas <b>Practical</b> - Forming metal, pewter casting	<b>Theory</b> - mini NEA <b>Practical</b> -mini NEA planning, modelling and testing	The course work element of the GCSE worth 50% will commence at the start of June. <b>Section A - Identifying &amp; investigating design possibilities (Research section)</b>
	Year Overview	GCSE Product Design involve a practical design and make controlled task (NEAs), which is completed during Year 11. The GCSE comprises of 50% coursework and 50% exam and will focus on the content covered in Y10. The NEA 'Design contexts' are released on 1st June.					
	SOW	AO1 Identify, investigate and outline design possibilities AO2 Design and make prototypes that are fit for purpose	AO2 Design and make prototypes that are fit for purpose	AO2 Design and make prototypes that are fit for purpose AO3 Analyse and evaluate	AO3 Analyse and evaluate Revision for final written exam.		
Implementation Year 11: Product Design	Unit Focus	NEA B Producing a design brief & specification C Producing a design brief & specification	NEA D Developing design ideas (Developing final ideas, CAD and modelling) Students will complete focused revision activities to aid them in preparation for their written mock exam.	NEA E Developing design ideas (Making) F Analysing & evaluating	F Analysing & evaluating Students will complete focused revision activities to aid them in preparation for their written exam.		
	Year Overview						

<b>Impact</b>	<b>Assessment</b>	At <b>KS3</b> theory and practical elements are marked using appropriate GCSE mark schemes and students are given grades at KS3 based on ranking and percentage distributions. Practical work is assessed throughout the unit of work using KPI's and feedback is given using Verbal/WWW/HTI/MAC and peer-/self-assessed. Mid and end of unit assessments are teacher marked. Pre-assessment preparation is peer-/self-assessed .	During <b>Year 10</b> practical work is assessed using criteria from GCSE mark schemes and students are given feedback using WWW, HTI/MAC to improve their work. Mock exam assessments are teacher marked with WWW/HTI/MAC. Pre-assessment preparation is peer-/self-assessed with the same. After Mock Exams, QLA is used to inform DTT approach.	At <b>Year 11</b> the NEA is assessed in accordance with the terms and conditions of the exam board, using the appropriate GCSE mark scheme. Students are given a final mark for their NEA at the end of the course. Mock exam assessments are teacher marked with WWW/HTI/MAC. Pre-assessment preparation is peer-/self-assessed with the same. After Mock Exams, QLA is used to inform DTT approach.
	<b>Literacy and Numeracy links</b>	Students all have Glossaries of keywords at KS3 and KS4. Extensive scaffolding is provided to enable students to develop their writing and practical skills. Active reading skills are modelled & promoted. Numeracy is included throughout schemes of work at both KS3 and KS4 as it is fundamental to both the Food and Nutrition examination and DT GCSE.		
	<b>How It Is Used / Skills Set Developed / Outcomes</b>	Students will gain a broad & in depth knowledge of Design & Technology, Food and Nutrition and Child Development. Throughout the course they will develop their critical thinking skills and develop the ability to participate confidently and successfully in an increasingly technological, developing world. Students will gain awareness and learn from wider influences including historical, social, cultural, environmental and economic factors. Students will get the opportunity to work creatively when designing and making and apply technical and practical expertise.		
	<b>Careers in the Curriculum</b>	These transferable skills are valued by employers & are important in so many career paths. Many students go onto study at A'level, including Product Design, 3D design, Graphics, Textiles, Level 3 Food and Nutrition and Child Development. A wide range of careers welcome students that have studied these subjects, which are diverse, challenging and rewarding, which may include Architect, Product Designer, Graphic Designer, Nutritionist, Norton Nanny, Nurse to name a few.		