



Intent for the Year 8 Design and Technology Curriculum 2021-2022

'All children will experience a well-balanced and comprehensive curriculum that enhances informed, intellectual, developmental and moral character. As a result, this will improve life chances, inter-personal relationships, social mobility and preparedness for employment. Our curriculum will encourage everyone to have a positive impact on society.'

Design and Technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others needs, wants and values. Design and Technology curriculum allows students to gain a greater understanding of the technological/creative world of design having greater understanding for how products work, prepared and made. Design and technology is one of the very few opportunities for pupils to partake in a technical, practical education. It plays an important role in providing young people with a hands-on creative experience and develops a practical identity and a capability for innovation. The subject provides opportunities for collaboration, team working and communication skills that are essential for future employment. We have recognised the need to reform the subject and align it with modern design thinking and industrial practices while maintaining strands of the National Curriculum

In Year 8 we encourage students to deepen their existing knowledge from year 7 and continue to make the links which were formed from the National curriculum and expand on knowledge. The aim of this year is to 'build' upon students learning experiences and bring them back inline with their predicted path which were set before the pandemic- this will be supported again through The department's 6 principles Tool box:

1. Problem solving-the multidisciplinary approach

2. User centred design

3. Communication

4. Application of skill

5. Knowledge of materials / nutrients

6. Industrial culture and careers

Character Education will be an additional tool in our Tool box and very much at the forefront of our delivery of the curriculum. Activities will strive to encourage students to be independent learners, by taking responsibility for their own actions. Students will be introduced to a range of tools, materials, working techniques and projects early on so they are equipped to deal with the challenges that Design and Technology pose and how these are related to the real world applications. The lessons are delivered through specific context - projects form small focussed tasks which require students to build on listening skills, communication, team work, reflection, and how to deal with mistakes. Much of what we have been covering in DT for many years now is Enquiry based learning providing a vehicle to developing a sense of the world and their responsibility within it.

Implementation:

Design and technology is part of the Creative Faculty along with Art, Drama and Music. Pupils will rotate on a carousel system spending approximately 10 weeks with each subject area. The length of time that students spend with each subject area differs however within design technology students will receive 2 hours a week in year 8. Within design and



technology pupils will also rotate within our own carousel focusing on Food, Engineering, STEM/Skills and Textiles modules. Design and technology's intent is to combine practical and technological skills with creative thinking to design and make products and systems that meet human needs. We have integrated a key stage by key stage curriculum where students will have unrivaled opportunities to understand the relevance of, and apply mathematical, scientific, design and computing concepts to the made world(STEM). They learn to use current technologies and consider the impact of future technological developments. They learn to think creatively to improve quality of life, solving problems as individuals and members of a team. Students in Year 8 will carry out project based tasks using a range of strategies, Designing, making, evaluating and interleaving. Technical knowledge is either offered as part of a collective or taught as stand alone areas.

Curriculum adaptations as a result of the pandemic:

In relation to the pandemic students have missed out on all applications of skills, including CAD/CAM due to not being able to access the specialist workshops and food rooms. We have therefore focussed this year on the revival of skills associated with design, make, evaluate and technical knowledge. Longer module rotations throughout the year will allow more time to cover more areas and enable us to reduce the gap in the highlighted areas. All details of which can be identified below.

Term	Enquiry/Topic/Unit: <i>What is going to be taught?</i>	Key Outcomes: <i>What will students have achieved by completing this scheme of learning?</i>	Character Education: <i>How does this topic link to a sense of Self, Others and the World, in terms of Character Education?</i>	Assessment: <i>Will there be formative and/or summative testing? What role will interleaving play? How will this be marked?</i>	Vocabulary: <i>What are the key words for this topic/unit that students must know?</i>	Home-Learning: <i>What homework will be set and why (e.g. consolidate/extend)? How will this be marked?</i>
1-6 Crea tive Caro usel lastin g 10w eeks	Year 8– Food 2 - Skills challenge Cooking and Nutrition Where food comes from CNA3 CNA4 Cooking and Nutrition	<ul style="list-style-type: none"> that food is produced, processed and sold in different ways, e.g. conventional and organic farming, fair trade that people choose different types of food and that this may be influenced by availability, season, need, cost, where the food is produced, culture and religion the importance of a healthy and varied diet as depicted in the 	<p>We will be focussing on 6 character traits: Resilient, Responsibility, Confident, Creative, Curious and Reflective</p> <p>At the end of each term students sit an Assessment- and the feedback policy is designed to develop a sense of reflection.</p> <p>At the end of the module students also reflect on the</p>	<p>Summative: Mid & End of Topic Assessment.</p> <p>Formative: Carried out in line with feedback policy</p> <p>*verbal feedback</p> <p>*Whole class feedback</p> <p>*Peer/self-assessment</p> <p>At the start of all lessons staff will recap each lesson leading into the next to shape interleaving. Assessments occur twice in a term amid way check and</p>	<p>See SOW for more specific key vocabulary</p> <p>Savoury Routines Health Weighing Measuring Accuracy Hob Independent Organisation</p>	<p>Select and prepare ingredients for practical lesson</p> <p>Weighing and measuring throughout the term</p> <p>1 week per module cleaning and washing up routine at home</p> <p>2 hours per module split as necessary</p>



	<p>Food preparation, cooking and nutrition</p> <p>CNB1 CNB2 CNB3 CNB7 CNB8 CNB9 CNB10 CNB12 CNB13 CNB14 CNB15 CNB16 CNB17</p>	<p>Eatwell Guide and eight tips for healthy eating</p> <ul style="list-style-type: none">● that food provides energy and nutrients in different amounts; that they have important functions in the body; and that people require different amounts during their life● how to taste and cook a broader range of ingredients and healthy recipes, accounting for a range of needs, wants and values● how to use a broader range of preparation techniques and methods when cooking, e.g. stir-frying, steaming, blending● how to modify recipes and cook dishes that promote current healthy eating messages● the principles of cleaning, preventing cross-contamination, chilling, cooking food thoroughly and reheating food until it is steaming hot● how to store, prepare and cook food safely and hygienically● how to select and prepare ingredients● how to use utensils and electrical equipment	<p>project to understand which areas of the 9 character traits they have used which has allowed them to complete/ assist in the challenge.</p>	<p>a formal one driven at the end of the rotation focusing on core knowledge for the specific module. They will sit a 25 minute assessment near the end of term</p>		
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<p>Year 8 – <u>STEM Skills challenge - Casting</u></p> <p>Designing DA Understanding contexts, users and purposes DA2, DA9</p> <p>Designing DB Generating, developing, modelling and communicating ideas DB2, DB4, DB5, DB7, DB9</p> <p>Making MA Planning MA4, MA5</p> <p>Making MB Practical skills and techniques MB5, MB7, MB11</p>	<ul style="list-style-type: none"> ● use research including the study of different cultures, to identify and understand user need ● take creative risks when making design decisions ● produce models of their ideas using CAM to test out their ideas ● use CAD and related software packages to validate their designs in advance of manufacture ● use specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations ● use a variety of approaches, for example biomimicry and user-centred design, to generate 	<p>Enquiry based learning provides a vehicle to developing a sense of the world and their responsibility within it.</p> <p>We will be focussing on 6 character traits: Resilient, Responsibility, Confident, Creative, Curious and Reflective</p> <p>At the end of each term students sit an Assessment- and the feedback policy is designed to develop a sense of reflection.</p> <p>At the end of the module students also reflect on the project to understand which areas of the 9</p>	<p>Summative: Mid & End of Topic Assessment.</p> <p>Formative: Carried out in line with feedback policy</p> <p>*verbal feedback *Whole class feedback *Peer/self-assessment</p> <p>At the start of all lessons staff will recap each lesson leading into the next to shape interleaving. Assessments occur twice in a term amid way check and a formal one driven at the end of the rotation focusing on core knowledge for the specific module. They will sit a 25 minute assessment near the end of term</p>	<p>See SOW for key vocabulary - however below are just a selection of recurring DT words and Phrases students should know at the end of KS3</p> <p>Problem solving Measuring Techniques Safety with tools Processes casting CAD/CAM 2 D Design Cutting, drilling, sanding, filing, joining, finishing Hacksaws (including junior hacksaws) Fret saw & blades Files</p>	<p>See separate Homework sheet for year 8</p> <p>Each term has a focus to extend learning and engagement with real world applications some of which are national competition based and will include inter-house competitions</p>	



	<p>Year 8 – Engineering - Sweet Dispenser</p> <p>Designing DA Understanding contexts, users and purposes DA7 ,DA8, DA10</p> <p>Making MA Planning MA1, MA2, MA7, MA8</p> <p>Making MB Practical skills and techniques MB1, MB7, MB8 MB9, MB11</p> <p>Evaluating EA Own ideas and products EA1, EA2, EA5</p> <p>Technical Knowledge Making products work TK8, TK7</p>	<ul style="list-style-type: none"> • We are repeating this module with year 8's as they missed out in year 7 to develop detailed design specifications to guide their thinking • work confidently within a range of relevant domestic, local and industrial contexts, such as the home, health, leisure, culture, engineering, manufacturing, construction, food, energy, agriculture and fashion • consider the influence of a range of lifestyle factors and consumer choices when designing products • consider additional factors such as ergonomics, anthropometrics or dietary needs • produce ordered sequences and schedules for manufacturing products they design, detailing resources required • produce costings using spreadsheets for products they design and make 	<p>We will be focussing on 6 character traits: Resilient, Responsibility, Confident, Creative, Curious and Reflective</p> <p>At the end of each term students sit an Assessment- and the feedback policy is designed to develop a sense of reflection.</p> <p>At the end of the module students also reflect on the project to understand which areas of the 9 character traits they have used which has allowed them to complete/ assist in the challenge.</p>	<p>Summative: Mid & End of Topic Assessment.</p> <p>Formative: Carried out in line with feedback policy</p> <ul style="list-style-type: none"> *verbal feedback *Whole class feedback *Peer/self-assessment <p>At the start of all lessons staff will recap each lesson leading into the next to shape interleaving. Assessments occur twice in a term amid way check and a formal one driven at the end of the rotation focusing on core knowledge for the specific module. They will sit a 25 minute assessment near the end of term</p>	<p>See SOW for key vocabulary</p> <p>Problem solving</p> <p>Measuring Techniques</p> <p>Safety with tools</p> <p>Processes -</p> <p>Cutting, drilling, sanding, filing, joining, finishing</p> <p>Ergonomics</p> <p>Assembling products</p> <p>Manipulating timber</p> <p>Finishing timber</p> <p>Softwood</p> <p>Hardwood</p> <p>MDF</p> <p>Plywood</p> <p>Acrylic sheet</p> <p>Dowel</p> <p>PVA</p> <p>Varnish/wax</p> <p>Stains</p>	<p>See separate Homework sheet for year 8</p> <p>Each term has a focus to extend learning and engagement with real world applications some of which are national competition based and will include inter-house competitions</p>



		<ul style="list-style-type: none">● select appropriately from specialist tools, techniques, processes, equipment and machinery, including computer-aided manufacture● select appropriately from a wider, more complex range of materials, components and ingredients, taking into account their properties such as water resistance and stiffness● make use of specialist equipment to mark out materials● follow procedures for safety and hygiene and understand the process of risk assessment● use a wider, more complex range of materials, components and ingredients, taking into account their properties● use a broad range of manufacturing techniques including handcraft skills and machinery to manufacture products precisely● apply a range of finishing techniques, including those from art and design, to a broad range				
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- of materials including textiles, metals, polymers and woods
- evaluate their products against their original specification and identify ways of improving them
 - actively involve others in the testing of their products
 - test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups
 - how to classify materials by structure e.g. hard woods, soft woods, ferrous and non-ferrous, thermoplastic and thermosetting plastics
 - about the physical properties of materials e.g. grain, brittleness, flexibility, elasticity, malleability and thermal
 - how to make adjustments to the settings of equipment and machinery such as sewing machines and drilling machines
 - use learning from mathematics to help design and make products that work



		<ul style="list-style-type: none"> understand the performance of structural elements to achieve functioning solutions 				
<p>Year 8 – Textiles -Skills challengeEnquiry/Topic/Unit:</p> <p>Sculpture Pop Art Junk Food – Introduction into Textiles & to get familiar with the tools & environment</p> <p>Art Elements - Colour, Form, Shape, Three-dimensional, Value</p> <p>Design Principles - Contrast, Balance, Emphasis, Unity and Variety</p> <p>Art Textiles Denim Urban Landscapes – Inspired by cities across the world, students create a Textiles collage of their</p>	<p>Key Outcomes:</p> <ul style="list-style-type: none"> Introduction to sewing machines & to get familiar with the tools and environment Students will be inspired by cities around the world, they will create a Textiles collage of their chosen city entirely out of Denim. They will be inspired by Denim Artist Ian Berry. Students will create a portrait of an influential person within the BLM movement in the style of Victoria Villisana 	<p>Character Education:</p> <p>It gives students curiosity, confidence, resilience and reflectivity to use sewing machines and really challenge themselves to start working independently and to be able to problem solve throughout the project.</p> <p>It gives students curiosity, creativity and reflectivity to explore a new culture and really challenge themselves to start working independently and to be able to differentiate different cultures through architecture.</p> <p>It gives students creativity, confidence, resilience and reflectivity to be able to free motion embroidery with sewing machines and really</p>	<p>The students have an assessment sheet in their sketchbooks with Success Criteria for each project, which allows for constructive and positive comments, Grade, Attitude for Learning and Targets to be set.</p> <p>Summative;</p> <p>Students' work in sketchbooks is assessed at the end of each project.</p> <p>It takes into account all classwork and coincides with the completion of a Home Learning activity that is set for a 3 - 4 week period.</p> <p>There is an emphasis on Home Learning so that the students are aware that the project is as important as the work completed in class. This will allow students to practice and prepare for the</p>	<p>Techniques:</p> <ul style="list-style-type: none"> ✓ Health & Safety ✓ Observational Drawing (Colouring Pencil) ✓ Gridding Method ✓ Pattern Cutting ✓ Sewing Machine Introduction ✓ Hand Embroidery (Blanket Stitch) ✓ Construction/Stuffing 	<p>Each project has a 3 - 4 week Home Learning project that corresponds to the theme of the project. These are marked at the end of the rotation and contribute to the overall assessment of each student in a 'portfolio' style marking of work that is subject appropriate and feeds into the expectations and marking scheme at KS4</p>	



	<p>chosen city entirely out of denim</p> <p>Art Elements - Value, Line, Shape, Space and Texture</p> <p>Design Principles - Contrast, Two-Dimensional, Proportion, Balance and Unity</p> <p>Art Textiles BLM Portraits – Students will create a portrait of a influential person within the BLM movement in the style of Victoria Villisana</p> <p>Art Elements - Line, Space, and Texture</p> <p>Design Principles - Balance, Repetition, Pattern, White Space, Variety and Emphasis</p>		<p>challenge themselves to start working independently and to be able to problem solve throughout the project. They will be cementing the knowledge that they have learnt throughout the year.</p>	<p>high quality expectations of GCSE.</p> <p>Whole school assessment; Students are assessed during Winter Term and Summer Term. This will involve students to complete an exercise that sits within the scheme of work.</p> <p>The level, percentage mark and 'attitude to learning' are entered into Arbor after every rotational group.</p>	<p>✓ 2 Point Perspective Drawing (Biro Pen)</p> <p>✓ Photo Editing/Photography</p> <p>✓ Appliqué/Collage</p> <p>✓ Sewing Machine (more independently)</p> <p>✓ Pattern Cutting</p> <p>✓ Tonal Range</p> <p>✓ Hand Embroidery (French Knots)</p> <p>✓ Image transfer onto fabric</p> <p>✓ Double sided tape image transfer</p> <p>✓ Observ</p>	
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					ational Drawing (Pencil) ✓ Stencilli ng & Fabric Sprays ✓ Free Motion Embroidery ✓ Hand Embroidery Mark Making(Lazy Daisy, Fringe, French Knots, Satin Stitch)	
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Impact:

At this stage before they embark on year 8 we want students to have built up a repertoire of practical skills for their 'Tool box' whilst understanding a range of material knowledge and technical vocab some of which are mentioned above. They will understand the importance of problem solving, making connections between skills acquired and the world of work and relate these to actual real life examples in the world. Through the use of the case studies students can make real world connections to life beyond the classroom. The Students are able to build on previous experience learnt in year 7. Students can develop confidence, resilience and have more freedom to extend creativity in



the modules. Through the diverse curriculum students learn about a wide range of issues relating to Design and Technology and begin to make connections with real world applications and the positive and negative aspects that can arise through designing, planning and manufacturing products. Students will have covered an initial understanding of how this Design and Technology fits into real world applications. In Year 8 at this stage we want students to build up a connection between skills acquired and world of work and relate these to actual real life. Through the use of the case studies/ modules and video links students can begin to make their own opinions about what the next steps they would need to take in the real world to get into a range of career opportunities. The Careers covered here hope to inspire the students when considering options for next steps and their future careers and to make those all-important connections.