



Curriculum for Core Design and Technology – Year 7

Intent: Our vision for Design Technology is of a creative, rigorous subject. and Teaching and learning the technical knowledge and practical skills to make products in a range of materials. Design Technology students will learn a variety of design methods including CAD and be exposed to CAM methods of manufacture such as laser cutters and 3D printers. Students are taught to design using innovation and wherever possible address ‘real life’ design problems. This exciting and modern curriculum will help prepare students for the world they live in.

Implementation: A well sequenced and logical curriculum that builds knowledge and skills over time. Assessment centred around the KS3 curriculum Principles of Knowledge, design, make and evaluate. Students will rotate around the different areas of design technology, to ensure they are exposed to a broad technology experience.

KS2 FOUNDATIONS: Students prior knowledge of the DT curriculum will be vast depending on the primary school attended. Food will complete a short baseline test to find out students’ prior knowledge of cooking. In other areas of DT students will be given the opportunity to build on any prior knowledge of materials and their properties.

BASELINE TESTING: STUDENTS WILL BE GIVEN A BASELINE TEST, WITH QUESTIONS TO TEST THEIR KNOWLEDGE, DESIGN, MAKE AND EVALUATION SKILLS BASED ON WHAT THEY SHOULD HAVE LEARNT FROM KS2.

Lesson structure: Students will follow a structured DT program, having 2 lessons per fortnight. One lesson will follow a structured DT curriculum and the other lesson will follow a food and textiles program.

Year 7 Design Technology	Topics/Units to be taught Each unit below is taught over a block. Students experience a rotation system through the projects.	Making skills to be developed (health and safety)	Learning habits	Assessment	Prepares the way for....	Wider Curriculum Links (other curriculum areas, industry, big characters, real life, trips, guest speakers)
Key rack and Keyring overview:	Intent: Students are to design and make a key rack that will sit at a 90 degree angle. Students will accompany this with a pewter cast keyring which will produce using CAD/CAM.					
1 lesson per fortnight at 100 minutes 9 – 10 lessons	<p>Knowledge:</p> <ul style="list-style-type: none"> Core materials – Natural timbers Core materials – Metals Wastage Surface preparation and finishes <p>Design:</p> <ul style="list-style-type: none"> Communication of designs using isometric perspective Communication of designs using 2D software (CAD) <p>Make:</p> <ul style="list-style-type: none"> Dowell joint Pewter mould from MDF <p>Evaluate:</p> <ul style="list-style-type: none"> Peer feedback to aid development Evaluation of outcome <p style="background-color: #90EE90; display: inline-block;">CHALLENGE TASK: Manufacturing specification</p>	<ul style="list-style-type: none"> Marking out Scroll saw/ coping saw Tenon saw and bench hook Drilling Sanding/ Sanding machine 2D design Laser cutter Pewter casting Filing 	<p>All 5 habits can be earned across the DT projects.</p> <p>Students have a sticker on the front of their folders with the habits on. Teachers tick off the habits when students achieve them. If all 5 are achieved within the year, they get a special Art and design badge.</p> <ul style="list-style-type: none"> Resilience Collaboration Ambition Creativity Independence 	<p>This unit has three formal assessment areas:</p> <ul style="list-style-type: none"> A02a Design ideas A02e – Making skills End of unit test on knowledge <p>Throughout the project, students will be given verbal feedback on their progress.</p> <p>At assessment points students will receive a highlighted success criteria. Green is achieved and red is next steps. Students will feedback from a teacher led question which identifies common mistakes. Written in green pen.</p> <p>The end of unit test is a gauge of knowledge acquired within that unit.</p>	<ul style="list-style-type: none"> Improved workshop knowledge and understanding of working practically. Improved Knowledge, understanding and practice of Health and Safety. Improved Independence 	<ul style="list-style-type: none"> English – Written explanations of work. Self/peer assessment. Maths- Using measurement with precision and with tolerance. 2D design scale
BBC Microbit overview:	Intent: To use gain an understanding of programming through flowcharts and use of Microbits to programme a night light					
1 lesson per fortnight at 100 minutes 4 lessons	<p>Knowledge:</p> <ul style="list-style-type: none"> Inputs, processes and outputs Algorithms Pseudocode Programming using flowcharts <p>Design: A program using blocks in order to make outputs work</p> <p>Evaluate:</p>	<ul style="list-style-type: none"> Programming using blocks Problem solving Downloading using USB cables 	<p>All 5 habits can be earned across the DT projects.</p> <p>Students have a sticker on the front of their folders with the habits on. Teachers tick off the habits when students achieve them. If all 5 are</p>	<p>This unit has three formal assessment areas:</p> <ul style="list-style-type: none"> A02a – Design a program using blocks A03f – Analysing programs through testing and making improvements 	<ul style="list-style-type: none"> Understanding the basics of programming and how some devices can work based on programs. 	<ul style="list-style-type: none"> Self/peer assessment Computing – Algorithms and pseudocode Science – Inputs/ process and outputs

	<ul style="list-style-type: none"> Testing programs and changing them according to how well they performed <p>CHALLENGE TASK: Making a buggy move using the Microbit additional buggy.</p>		<p>achieved within the year, they get a special Art and design badge.</p> <ul style="list-style-type: none"> Resilience Collaboration Ambition Creativity Independence 	<p>➤ End of unit test on knowledge</p> <p>Throughout the project, students will be given verbal feedback on their progress.</p> <p>At assessment points students will receive a highlighted success criteria. Green is achieved and red is next steps. Students will feedback from a teacher led question which identifies common mistakes. Written in green pen.</p> <p>The end of unit test is a gauge of knowledge acquired within that unit.</p>		
Crazy creature	Intent: Students are to use Polymorph to create a keyring and design and make the packaging to accompany this.					
<p>1 lesson per fortnight at 100 minutes</p> <p>7 – 8 lessons</p>	<p>Knowledge:</p> <ul style="list-style-type: none"> Alessi Phillippe Starck Smart materials Modern Materials Papers and boards Blister packaging Composites <p>Design:</p> <ul style="list-style-type: none"> Designing packaging nets with appropriate packaging symbols. <p>Make:</p> <ul style="list-style-type: none"> Polymorph creature with appropriate packaging <p>Evaluate:</p> <ul style="list-style-type: none"> Evaluate outcome against the specification and suggest improvements <p>CHALLENGE TASK: Vacuum forming</p>	<ul style="list-style-type: none"> Polymorph heating up Craft knives and safety rules Hot glue gun <p>Vacuum forming</p>	<p>All 5 habits can be earned across the DT projects.</p> <p>Students have a sticker on the front of their folders with the habits on. Teachers tick off the habits when students achieve them. If all 5 are achieved within the year, they get a special Art and design badge.</p> <ul style="list-style-type: none"> Resilience Collaboration Ambition Creativity Independence 	<p>This unit has 3 formal assessment areas:</p> <ul style="list-style-type: none"> ➤ A01 – Research and investigate ➤ A02a – Design and develop ➤ A03 – Evaluate <p>Throughout the project, students will be given verbal feedback on their progress.</p> <p>At assessment points students will receive a highlighted success criteria. Green is achieved and red is next steps. Students will feedback from a teacher led question which identifies common mistakes. Written in green pen.</p> <p>The end of unit test is a gauge of knowledge acquired within that unit.</p>	<ul style="list-style-type: none"> Understanding on smart materials and composites and technical textiles Knowledge on papers and boards <p>NEA practice pages</p>	<ul style="list-style-type: none"> English – Written explanations of work. Self/peer assessment. Maths- Using measurement with precision and with tolerance. <p>Maths - Nets</p>
Graffiti pencil case	Intent: To use applique as a decorative technique. Use sewing machine skills to design and make a pencil case with a zip.					
<p>1 lesson per fortnight at 100 minutes</p> <p>6 lessons spring term only</p>	<p>Knowledge:</p> <ul style="list-style-type: none"> Natural and synthetics fibres Blended fabrics Applique seams Typography <p>Design: To design lettering using graffiti as</p> <p>Make:</p> <ul style="list-style-type: none"> A cushion with a pattern and applique lettering. Sample patches of applique and seams. <p>Evaluate:</p> <ul style="list-style-type: none"> Evaluation against the specification that students wrote <p>CHALLENGE TASK: Various tasks to complete</p>	<ul style="list-style-type: none"> Sewing machine safety and changing the bobbin Hand stitching with needles Using the laser cutter safely and with the current setting Using the printer including loading the sublimation paper correctly. 	<p>All 5 habits can be earned across the DT projects.</p> <p>Students have a sticker on the front of their folders with the habits on. Teachers tick off the habits when students achieve them. If all 5 are achieved within the year, they get a special Art and design badge.</p> <ul style="list-style-type: none"> Resilience Collaboration Ambition Creativity Independence 	<p>This unit has three formal assessment areas:</p> <ul style="list-style-type: none"> ➤ A02e – Making skills ➤ A03f – Evaluating against a specification ➤ End of unit test on knowledge <p>Throughout the project, students will be given verbal feedback on their progress.</p> <p>At assessment points students will receive a highlighted success criteria. Green is achieved and red is next steps. Students will feedback from a teacher led question which identifies common mistakes. Written in green pen.</p>	<ul style="list-style-type: none"> Improved sewing machine knowledge and understanding of working practically. Embroidery practice and different stitched Improved Knowledge, understanding and practice of Health and Safety. Improved Independence Seam practice 	<ul style="list-style-type: none"> English – Written explanations of work. Self/peer assessment. Maths- Using measurement with precision and with tolerance. Tessellation Graphics - Typography

				The end of unit test is a gauge of knowledge acquired within that unit.		
Food	Intent: To use skills and equipment to make a range of healthy dishes across the project.					
<p>1 lesson per fortnight at 100 minutes</p> <p>Autumn and summer terms</p> <p>14 lessons</p>	<p>Knowledge:</p> <ul style="list-style-type: none"> Principles of nutrition and health The Eatwell guide Effects of poor diet and health <p>Make:</p> <ul style="list-style-type: none"> Cook a repertoire of predominantly savoury dishes Cook healthy and balanced dishes <p>Evaluate:</p> <ul style="list-style-type: none"> Sensory evaluations <p>CHALLENGE TASK/S: Several throughout the unit</p>	<ul style="list-style-type: none"> Fine motor skills Using ovens safely Being safe in the classroom/Kitchen Use of Knives correctly. (Chopping skills) <p>Extension: Using various kitchen equipment with precision and independence</p>	<p>All 5 habits can be earned across the DT projects.</p> <p>Students have a sticker on the front of their folders with the habits on. Teachers tick off the habits when students achieve them. If all 5 are achieved within the year, they get a special Art and design badge.</p> <ul style="list-style-type: none"> Resilience Collaboration Ambition Creativity Independence 	<p>This unit has three formal assessment areas:</p> <ul style="list-style-type: none"> A02d Making skills (Score based pizza only) A03f Evaluating using sensory analysis and suggesting where improvements to the dish is needed End of unit test on knowledge <p>Throughout the project, students will be given verbal feedback on their progress.</p> <p>At assessment points students will receive a highlighted success criteria. Green is achieved and red is next steps. Students will feedback from a teacher led question which identifies common mistakes. Written in green pen.</p> <p>The end of unit test is a gauge of knowledge acquired within that unit.</p>	<ul style="list-style-type: none"> Improved kitchen knowledge and understanding. Improved knowledge and understanding of practical skills/precision. Improved Knowledge, understanding and practice of Health and Safety. Improved Independence. 	<ul style="list-style-type: none"> Science - in food Geography - Seasonality of Food Maths - calculating recipes English -reading of text