



Curriculum Content for Design & Technology

Aims and Vision: To inspire pupils to use 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. Pupils will draw on a number of cross-curricular disciplines such as mathematics, science, computing and art in order to achieve this. We will focus upon the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world; to build and apply a repertoire of knowledge, understanding and skills; to critique, evaluate and test their ideas and products and the work of others; and to understand and apply the principles of nutrition and learn how to cook.

Prior Learning	Materials, Construction and Mechanics	<ul style="list-style-type: none"> • Measure and mark out to nearest cm. • Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen). • Create products using winding mechanisms.
	Textiles	<ul style="list-style-type: none"> • Join textiles using running stitch. • Colour and decorate textiles using a number of techniques
	Food	<ul style="list-style-type: none"> • Cut ingredients safely and hygienically. • Assemble or cook ingredients.
	Electricals and Electronics	<ul style="list-style-type: none"> • Recognise if a battery operated device works or not.
	Computing	<ul style="list-style-type: none"> • Model designs using software.
	Design and Evaluate	<ul style="list-style-type: none"> • Design products that have a clear purpose and an intended user.
	Design throughout history	<ul style="list-style-type: none"> • Explore objects and designs to identify likes and dislikes of the designs. • Suggest improvements to existing designs. • Explore how products have been created.

Year 3 Topics/Context	Skills	Knowledge (Key facts for recall)	Vocabulary to be learnt
<i>Design and Evaluate</i>	<ul style="list-style-type: none"> • <i>Generate ideas by looking closely at existing products.</i> • <i>Explore whether existing products can be recycled or reused. (Link to Oracy)</i> • <i>Develop ideas through focussed discussion.</i> • <i>Design products that are functional and designed for purpose and a specific user (individual or group).</i> • <i>Create 2D design drawings with simple annotations.</i> 	<ul style="list-style-type: none"> • <i>Understand the need for designing and planning before the making process begins.</i> • <i>Begin to understand the importance of using recyclable materials where possible.</i> • <i>Understand the importance of testing and evaluating a product once it has been made.</i> 	<i>Design, evaluate, recycle, re-use, user, annotate, function, purpose, strengths, weaknesses, brief.</i>

	<ul style="list-style-type: none"> • <i>Explain strengths and weaknesses of existing products.</i> • <i>Test own product and explain its strengths and weaknesses and whether it meets the design brief.</i> 		
Design throughout history (Salt dough Christmas decorations)	<ul style="list-style-type: none"> • <i>Identify some of the great designers in all of the areas of study to generate ideas for designs.</i> • <i>Improve upon existing designs, giving reasons for choices.</i> • <i>(Book talk link in build up to DT project)</i> 	<ul style="list-style-type: none"> • <i>Begin to understand that all designs and products we use were developed by particular designers for particular needs. Understand the impact these designs have had within society and the wider world.</i> 	<i>Designers, inventors.</i>
Materials, Construction and Mechanics (Toy cars)	<ul style="list-style-type: none"> • Cut materials safely using tools provided. • Measure and mark out to the nearest centimetre. • Demonstrate a range of cutting and shaping techniques. • Demonstrate a range of joining techniques, such as gluing and nailing. • Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. • Create products using wheels or winding mechanisms. 	<ul style="list-style-type: none"> • Begin to learn the names of tools used for screwing, gluing, nailing and cutting. • Begin to learn the names of different materials used for construction and the differences between them. • Understand how to strengthen joints at a right angle. 	Glue-gun, nail, Hacksaw, G-Clamp, Bench hook. Hard wood, soft wood, steel, iron, aluminium, plastic. Triangular support.
Textiles (Tool pouch)	<ul style="list-style-type: none"> • Shape textiles using templates. • Join textiles using running stitch. • Decorate textiles using a number of techniques. 	<ul style="list-style-type: none"> • Begin to learn the names of tools and equipment used for cutting and joining textiles. • Understand the use of a running stitch. • Begin to understand the need for a seam allowance. 	Needle, thread, sew, stitch, textiles.
Food (Mountain Energy Bars) (Salt dough Christmas decorations)	<ul style="list-style-type: none"> • Cut, peel or grate ingredients safely and hygienically. • Measure or weigh using measuring cups or electronic scales. • Follow a recipe. • Assemble or cook ingredients. 	<ul style="list-style-type: none"> • Begin to understand differences between food groups and how to create meals/foods for specific purposes. • Begin to learn the names of equipment used for preparing and cooking food. 	Peel, grate, weigh, hygiene, scales, ingredients.
Electricals and Electronics (covered in 'Light Science topic')	<ul style="list-style-type: none"> • Diagnose faults in battery operated devices. (Link to Science) 	<ul style="list-style-type: none"> • Begin to understand what circuits are, how electricity flows and how batteries work. 	Faults, battery, circuit.
Computing	<ul style="list-style-type: none"> • Begin to use simple computer-aided design to develop and communicate their ideas. 	<ul style="list-style-type: none"> • Begin to understand the importance of computer-aided design in the modern world. 	Control, models, software.

Year 4 Topics/Context	Skills	Knowledge (Key facts for recall)	Vocabulary to be learnt
<i>Design and Evaluate</i>	<ul style="list-style-type: none"> • <i>Generate ideas by looking closely at existing products and deconstructing them (where appropriate).</i> • <i>Explore whether existing products can be recycled or reused.</i> • <i>Develop ideas through focussed discussion.</i> • <i>Design products that are functional and designed for purpose and a specific user (individual or group).</i> • <i>Create cross-sectional drawings of designs, with annotations.</i> • <i>Explain strengths and weaknesses of existing products.</i> • <i>Test own product and explain its strengths and weaknesses and whether it meets the design brief.</i> 	<ul style="list-style-type: none"> • <i>Understand the need for designing and planning before the making process begins.</i> • <i>Understand the importance of using recyclable materials where possible.</i> • <i>Understand the importance of testing and evaluating a product once it has been made.</i> 	<i>Design, evaluate, annotate, recycle, re-use, cross-sectional, function, purpose, user, strengths, weaknesses, brief.</i>
<i>Design throughout history (Roman Catapults)</i>	<ul style="list-style-type: none"> • <i>Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs.</i> • <i>Explore some of these products to understand how they work.</i> 	<ul style="list-style-type: none"> • <i>Understand that all designs and products we use were developed by particular designers for particular needs. Understand the impact these designs have had within society and the wider world.</i> 	<i>Designers, inventors, pioneers.</i>
Materials, Construction and Mechanics (Roman Catapults)	<ul style="list-style-type: none"> • Cut materials safely using tools provided, including cutting wood diagonally and cutting slots. • Use a hand-drill to cut holes. • Measure and mark out to the nearest centimetre. • Demonstrate a range of cutting and shaping techniques. • Demonstrate a range of joining techniques, such as gluing, nailing beginning to use screws. • Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. • Create products using levers, wheels and winding mechanisms. 	<ul style="list-style-type: none"> • Know the names of tools used for drilling, screwing, gluing, nailing and cutting. • Know the names of different materials used for construction and the differences between them. • Understand how to strengthen different types of joints. 	Hand-drill, Screw, glue-gun, nail, Hacksaw, G-Clamp, Bench hook. Hard wood, soft wood, steel, iron, aluminium, plastic. Triangular support.
Textiles (Easter Bags)	<ul style="list-style-type: none"> • Shape textiles using templates. • Join textiles using running stitch. • Colour and decorate textiles using a number of techniques. 	<ul style="list-style-type: none"> • Know the names of tools and equipment used for cutting and joining textiles. • Understand the use of a running stitch. • Understand the need for a seam allowance. 	Needle, thread, sew, stitch, textiles.

Food (Cookies)	<ul style="list-style-type: none"> • Cut, peel or grate ingredients safely and hygienically. • Measure or weigh using measuring cups or electronic scales. • Assemble or cook ingredients. 	<ul style="list-style-type: none"> • Understand differences between food groups and how to create meals/foods for specific purposes. • Know the names of equipment used for preparing and cooking food. 	Peel, grate, weigh, hygiene, scales, ingredients.
Electricals and Electronics (Lighthouse)	<ul style="list-style-type: none"> • Include a simple electrical circuit in a product with one outcome, e.g. light or sound. 	<ul style="list-style-type: none"> • Understand what circuits are, how electricity flows and how batteries work. 	Faults, battery, circuit.
Computing	<ul style="list-style-type: none"> • Use simple computer-aided design to develop and communicate their ideas. 	<ul style="list-style-type: none"> • Understand the importance of computer-aided design in the modern world. 	Control, models, software.

Year 5 Topics/Context	Skills	Knowledge (Key facts for recall)	Vocabulary to be learnt
<i>Design and Evaluate</i>	<ul style="list-style-type: none"> • <i>Generate ideas by looking closely at existing products and deconstructing them (where appropriate).</i> • <i>Explore how sustainable the materials in existing products are.</i> • <i>Develop ideas through focussed discussion.</i> • <i>Design products that are innovative, functional and designed for a specific user (individual or group).</i> • <i>Carry out research to identify the needs, wants, preferences and values of particular individuals and groups.</i> • <i>Create cross-sectional drawings of designs, with annotations and measurements.</i> • <i>Explain strengths and weaknesses of existing products, in relation to their purpose and audience.</i> • <i>Test own product and explain its strengths and weaknesses and whether it meets the design brief.</i> • <i>Begin to collect feedback from others about how to improve a product.</i> 	<ul style="list-style-type: none"> • <i>Understand the need for designing and planning before the making process begins.</i> • <i>Understand the importance of using sustainable materials where possible.</i> • <i>Understand the importance of testing and evaluating a product once it has been made.</i> 	<p><i>Design, evaluate, annotate, sustainable materials, user. Innovative, cross-sectional, function, purpose, strengths, weaknesses, brief.</i></p>
<i>Design throughout history (Christmas Cards)</i>	<ul style="list-style-type: none"> • <i>Combine elements of design from a range of inspirational designers throughout history and consider how to improve upon these existing products.</i> 	<ul style="list-style-type: none"> • <i>Understand that all designs and products we use were developed by particular designers for particular needs.</i> • <i>Understand the impact these designs have had within society and the wider world.</i> 	<p><i>Designers, inventors, pioneers, inspirational.</i></p>
Materials, Construction and Mechanics <i>(Cam Toys)</i>	<ul style="list-style-type: none"> • Cut materials accurately and safely by selecting appropriate tools. • Measure and mark out to the nearest millimetre. • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material. • Select appropriate materials and begin to choose most appropriate techniques for joining them. • Use a screwdriver to secure materials with accuracy. • Choose suitable techniques to construct products or to 	<ul style="list-style-type: none"> • Know the names of tools used for drilling, screwing, gluing, nailing and cutting. • Begin to know the names of different metals and plastics used for construction and the differences between them. • Understand how to strengthen different types of joints. 	<p>Hand-drill, Screw, glue-gun, nail, Hacksaw, G-Clamp, Bench hook. Hard wood, soft wood, , oak, teak, mahogany, pine, spruce, fir, deciduous, evergreen, steel, iron, aluminium, plastic.</p>

	<ul style="list-style-type: none"> repair items. Strengthen materials using suitable techniques. Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (LEVERS, PULLEYS ETC) Convert rotary motion to linear, using cams. 	<ul style="list-style-type: none"> Begin to understand the differences between hard wood and soft wood, and their properties. 	<p>Triangular support.</p> <p>Transfer, force, levers, pulleys, rotary motion, linear, cams.</p>
Textiles (Christmas Decorations)	<ul style="list-style-type: none"> Understand the need for a seam allowance. Join textiles by choosing appropriate stitching. Select the most appropriate techniques to decorate textiles. 	<ul style="list-style-type: none"> Know the names of tools and equipment used for cutting and joining textiles. Begin to understand the differences between different types of stitch and when each is most appropriate. (running stitch, back stitch, chain stitch.) Understand the need for a seam allowance. 	<p>Needle, thread, sew, stitch, textiles, running stitch, back stitch, chain stitch.</p>
Food (Anglo Saxon Biscuits)	<ul style="list-style-type: none"> Prepare ingredients hygienically using appropriate utensils. Measure ingredients to the nearest gram accurately. Follow a recipe. Assemble or cook ingredients (controlling the temp of the oven or hob). 	<ul style="list-style-type: none"> Understand differences between food groups and how to create meals/foods for specific purposes. Know the names of a range equipment and utensils used for preparing and cooking food. 	<p>Peel, grate, weigh, hygiene, scales, ingredients, spatula, hob, temperature, recipe</p>
Electricals and Electronics (Christmas Cards)	<ul style="list-style-type: none"> Create series and parallel circuits and include one or the other in a product to generate a light, sound or both. 	<ul style="list-style-type: none"> Understand what circuits are, how electricity flows and how batteries work. 	<p>Faults, battery, circuit, series, parallel.</p>
Computing	<ul style="list-style-type: none"> Use more advanced computer-aided design to develop and communicate their ideas. 	<ul style="list-style-type: none"> Understand the importance of computer-aided design in the modern world and its many applications. 	<p>Control, models, software, CAD, applications.</p>

Year 6 Topics/Context	Skills	Knowledge (Key facts for recall)	Vocabulary to be learnt
<i>Design and Evaluate</i>	<ul style="list-style-type: none"> • <i>Generate ideas by looking closely at existing products and deconstructing them (where appropriate).</i> • <i>Explore how sustainable the materials in existing products are.</i> • <i>Develop ideas through focussed discussion.</i> • <i>Design products that are innovative, functional and designed for a specific user (individual or group).</i> • <i>Carry out research, using surveys, interviews, questionnaires and web-based resources to identify the needs, wants, preferences and values of particular individuals and groups.</i> • <i>Create exploded diagrams of designs, with annotations and precise measurements.</i> • <i>Create a prototype of a design.</i> • <i>Explain strengths and weaknesses of existing products, in relation to their purpose and audience.</i> • <i>Test own product and explain its strengths and weaknesses and whether it meets the design brief.</i> • <i>Collect feedback from others about how to improve a product.</i> • <i>Explore the impact of well-known designers and inventors and they impact they have had on the world.</i> 	<ul style="list-style-type: none"> • <i>Understand the need for designing and planning before the making process begins.</i> • <i>Understand the importance of using sustainable materials where possible.</i> • <i>Understand the importance of testing and evaluating a product once it has been made.</i> 	<p><i>Design, evaluate, annotate, sustainable materials, user. Innovative, cross-sectional, Exploded diagram, prototype, function, purpose, strengths, weaknesses, brief.</i></p>
<i>Design throughout history</i> <i>(Book marks or Buzzer Game)</i>	<ul style="list-style-type: none"> • <i>Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.</i> • <i>Evaluate the design of these products to suggest improvements to the user experience.</i> 	<ul style="list-style-type: none"> • <i>Understand that all designs and products we use were developed by particular designers for particular needs.</i> • <i>Understand the impact these designs have had within society and the wider world.</i> 	<p><i>Designers, inventors, pioneers, inspirational.</i></p>
Materials, Construction and Mechanics <i>(Battle Of Britain Buzzer Game)</i>	<ul style="list-style-type: none"> • Cut materials with precision and refine the finish with appropriate tools. • Measure and mark out to the nearest millimetre. • Use a glue-gun safely under close supervision. • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material. • Select appropriate materials and most appropriate 	<ul style="list-style-type: none"> • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape. • Know the names of tools used for drilling, screwing, gluing, nailing and cutting. • Know the names of different metals and plastics used for construction and the 	<p>Sanding, sandpaper. Hand-drill, Screw, glue-gun, nail, Hacksaw, G-Clamp, Bench hook. Hard wood, soft wood, , oak, teak, mahogany,</p>

	<p>techniques for joining them.</p> <ul style="list-style-type: none"> • Use a screwdriver to secure materials with accuracy. • Choose suitable techniques to construct products or to repair items. • Strengthen materials using suitable techniques. • Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (LEVERS, CAMS, WHEELS, PULLEYS ETC) • Convert rotary motion to linear, using cams. 	<p>differences between them.</p> <ul style="list-style-type: none"> • Understand how to strengthen different types of joints. • Understand the differences between hard wood and soft wood, and their properties and be able to give examples of each. 	<p>pine, spruce, fir, deciduous, evergreen, steel, iron, aluminium, plastic.</p> <p>Triangular support.</p> <p>Transfer, force, levers, pulleys, rotary motion, linear, cams.</p>
<p>Textiles (Bayeux Tapestry Bookmarks)</p>	<ul style="list-style-type: none"> • Create objects that employ a seam allowance. • Join textiles with a combination of stitching techniques. • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles 	<ul style="list-style-type: none"> • Know the names of tools and equipment used for cutting and joining textiles. • Understand the differences between different types of stitch and when each is most appropriate. (running stitch, back stitch, chain stitch.) • Understand the need for a seam allowance. • Begin to understand the differences between different textiles materials and their properties, both structurally and visually. (Silk, wool, cotton, nylon, felt) 	<p>Needle, thread, sew, stitch, textiles, running stitch, back stitch, chain stitch, tactile, Silk, wool, cotton, nylon, felt</p>
<p>Food (Enterprise Week – Cakes)</p>	<ul style="list-style-type: none"> • Understand the importance of correct storage and handling of ingredients. • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. • Demonstrate a range of baking and cooking techniques. • Create and refine recipes, including ingredients, methods, cooking times and temperatures. 	<ul style="list-style-type: none"> • Understand differences between food groups and how to create meals/foods for specific purposes. • Know the names of a range equipment and utensils used for preparing and cooking food. 	<p>Peel, grate, weigh, hygiene, scales, ingredients, spatula, hob, temperature, recipe, baking, cooking, ratios, storage.</p>
<p>Electricals and Electronics (Battle Of Britain Buzzer Game)</p>	<ul style="list-style-type: none"> • Create circuits using electronics kits that employ a number of components. • Make own decisions on the type of circuit that best suits a given product brief. • 	<ul style="list-style-type: none"> • Understand what circuits are, how electricity flows and how batteries work. • Understand the difference between series and parallel circuits. 	<p>Faults, battery, circuit, series, parallel.</p>
<p>Computing</p>	<ul style="list-style-type: none"> • Use more advanced computer-aided design to develop and communicate their ideas. 	<ul style="list-style-type: none"> • Understand the importance of computer-aided design in the modern world and its many applications. 	<p>Control, models, software, CAD, applications.</p>