

Keevil CofE Academy

Design Technology Curriculum



“We presume children to achieve their very best.”

Keevil CofE Academy Mission Statement

We know that for children to achieve their best our curriculum needs to be designed in order to enable the maximum amount of learning, through the recall and understanding of knowledge and concepts. Therefore, our curriculum is organised as a progression which facilitates the re-visiting of learning through recurrent themes, such that it becomes embedded in children’s long term memory. We also understand the importance of children making connections between prior and new learning. The cyclical nature of our curriculum design, in which topics are returned to over the course of a child’s time with us, helps to enable this.

Our rationale for the teaching of history follows that detailed in the National Curriculum:

At Keevil, we strive to make Design and technology 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. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

We develop children with the following essential characteristics to help them embrace DT as a subject:

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
- Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- Critique, evaluate and test their ideas and products and the work of others, correcting and improving their work and giving constructive feedback.
- A desire to embrace challenging activities, including opportunities to undertake high-quality research across a range of different areas within the subject.
- A developing sense of curiosity about how other subjects impact Design Technology, building and developing their subject knowledge.

We ensure our DT Curriculum is rooted in the vision and ethos of the school, through ensuring that as well as delivering technical knowledge and skills lessons also develop the Keevil Characteristics:

To achieve good learning, the children, need to communicate well both listening and speaking.

Working in groups is and sharing resources is imperative within DT lessons. Therefore, teamwork and communication skills will be key. Children will also need to be diligent and have good problem solving skills when creating and making work, and show resilience when evaluating the success of their products.

Keevil C of E Academy Design Technology Knowledge and Skills Progression

Theme	EYFS	KS1	Lower KS2	Upper KS2
	Keevil Characteristics	Keevil Characteristics	Keevil Characteristics	Keevil Characteristics
	To achieve good learning the children need to communicate well both listening and speaking	Working in groups is and sharing resources is imperative within DT lessons. Therefore, teamwork and communications skills will be key. Children will also need to be diligent and have good problem solving skills when creating and making work.	Many DT tasks will involve working as a group and sharing resources. Therefore, children will need to be good communicators and work well in a team. The children will also need to work diligently in when designing and making products as well as good problem solving skills.	In DT lessons, the children will often be working in groups, designing products or conducting research. Therefore, good communication and teamwork is essential. Children will also need to be good at problem solving when designing and making their products. As well as this, children will need to be diligent in their learning in DT lessons.
	Vocabulary	Vocabulary	Vocabulary	Vocabulary
	The revision and introduction of key vocabulary is built into each lesson. This vocabulary is then included in display materials and additional resources to ensure that children are allowed opportunities to repeat and revise this knowledge.			
	Knowledge	Knowledge	Knowledge	Knowledge
Take inspiration from design throughout history		<ul style="list-style-type: none"> Explore objects and designs to identify likes and dislikes. Explore how products have been created. 	<ul style="list-style-type: none"> Disassemble products to understand how they work. Improve on existing designs, giving reasons for choices. Identify some of the great designers in different areas of study to generate ideas from their designs. 	<ul style="list-style-type: none"> Use knowledge of inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products to create their own innovative designs.
	Knowledge	Knowledge	Knowledge	Knowledge
Technical knowledge	<ul style="list-style-type: none"> To learn how to use a range of tools, e.g. scissors, hole punch, stapler, woodworking tools, rolling pins, pastry cutters. -Learn how everyday objects work by dismantling things. 	<ul style="list-style-type: none"> about the simple working characteristics of materials and components about the movement of simple mechanisms such as levers, sliders, wheels and axles how freestanding structures can be made stronger, stiffer and more stable that a 3-D textiles product can be assembled from two identical fabric shapes that food ingredients should be combined according to their sensory characteristics the correct technical vocabulary for the projects they are undertaking 	<ul style="list-style-type: none"> how mechanical systems such as levers and linkages or pneumatic systems create movement how simple electrical circuits and components can be used to create functional products how to program a computer to control their products how to make strong, stiff shell structures that a single fabric shape can be used to make a 3D textiles product that food ingredients can be fresh, pre-cooked and processed how to use learning from science to help design and make products that work how to use learning from mathematics to help design and make products that work 	<ul style="list-style-type: none"> how mechanical systems such as cams or pulleys or gears create movement how more complex electrical circuits and components can be used to create functional products how to program a computer to monitor changes in the environment and control their products how to reinforce and strengthen a 3D framework that a 3D textiles product can be made from a combination of fabric shapes that a recipe can be adapted by adding or substituting one or more ingredients how to use learning from science to help design and make products that work

			<ul style="list-style-type: none"> that materials have both functional properties and aesthetic qualities that materials can be combined and mixed to create more useful characteristics that mechanical and electrical systems have an input, process and output 	<ul style="list-style-type: none"> how to use learning from mathematics to help design and make products that work that materials have both functional properties and aesthetic qualities that materials can be combined and mixed to create more useful characteristics that mechanical and electrical systems have an input, process and output the correct technical vocabulary for the projects they are undertaking
Make	<ul style="list-style-type: none"> To show understanding of the need for safety when tackling new challenges and consider and manage some risks. To show understanding of how to transport and store equipment safely. 	<ul style="list-style-type: none"> plan by suggesting what to do next select from a range of tools and equipment, explaining their choices select from a range of materials and components according to their characteristics 	<ul style="list-style-type: none"> select tools and equipment suitable for the task explain their choice of tools and equipment in relation to the skills and techniques they will be using select materials and components suitable for the task explain their choice of materials and components according to functional properties and aesthetic qualities order the main stages of making 	<ul style="list-style-type: none"> select tools and equipment suitable for the task explain their choice of tools and equipment in relation to the skills and techniques they will be using select materials and components suitable for the task explain their choice of materials and components according to functional properties and aesthetic qualities produce appropriate lists of tools, equipment and materials that they need formulate step-by-step plans as a guide to making
Cooking	<ul style="list-style-type: none"> Children have basic hygiene awareness. 	<ul style="list-style-type: none"> that all food comes from plants or animals that food has to be farmed, grown elsewhere (e.g. home) or caught 	<ul style="list-style-type: none"> that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world 	<ul style="list-style-type: none"> that seasons may affect the food available how food is processed into ingredients that can be eaten or used in cooking
	Skills	Skills	Skills	Skills
Design	<ul style="list-style-type: none"> Begin to use the language of designing and making, e.g. join, build and shape. Learning about planning and adapting initial ideas to make them better. To construct with a purpose in mind, using a variety of resources. manipulate materials to achieve a planned effect use simple tools and techniques competently and appropriately select appropriate resources and adapt work where necessary select tools and techniques needed to shape, assemble and join materials I am using 	<ul style="list-style-type: none"> beginning to explore how products have been created design products that have a clear purpose and an intended user with support make simple diagrams to show a design develop design criteria with a group generate ideas by drawing on their own experiences use knowledge of existing products to help come up with ideas develop and communicate ideas by talking and drawing model ideas by exploring materials, components and construction kits and by making templates and mock-ups use information and communication technology, where appropriate, to develop and communicate their ideas 	<ul style="list-style-type: none"> show that a design meets a range of requirements put together a plan which shows the equipment and tools needed describe a design using an accurately labelled diagram generate realistic ideas, focusing on the needs of the user make design decisions that take account of the availability of resources generate ideas, considering the purposes for which they are designing make labelled drawings from different views showing specific features develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail 	<ul style="list-style-type: none"> come up with a range of ideas after collecting information take a user's view into account when designing produce a detailed step-by-step plan use cross sectional planning to show my design produce prototypes to show ideas share and clarify ideas through discussion model their ideas using prototypes and pattern pieces use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas use computer-aided design to develop and communicate their ideas generate innovative ideas, drawing on research

			<ul style="list-style-type: none"> • evaluate products and identify criteria that can be used for their own designs 	<ul style="list-style-type: none"> • make design decisions, taking account of constraints such as time, resources and cost
<h2>Make</h2>	<ul style="list-style-type: none"> • To learn to construct with a purpose in mind. • Selects tools and techniques needed to shape, assemble and join materials. • To explore what happens when they mix colours. • To experiment to create different textures. • To practise some appropriate safety measures without direct supervision. 	<ul style="list-style-type: none"> • cut safely using tools provided • begin to demonstrate a range of cutting and shaping techniques such as tearing, cutting and folding • begin to demonstrate a range of joining techniques such as gluing and combining materials to strengthen? • begin to join textiles using running stitch? • colour and decorate textiles using techniques such as dyeing or adding sequins? • begin to use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products • begin to create products using levers, wheels and winding mechanisms • begin to refine the design as work progresses? • begin to choose the right materials for making a product according to the properties needed • plan by suggesting what to do next • select from a range of tools and equipment, explaining their choices • select from a range of materials and components according to their characteristics • follow procedures for safety and hygiene • use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components • measure, mark out, cut and shape materials and components • assemble, join and combine materials and components • use finishing techniques, including those from art and design 	<ul style="list-style-type: none"> • design meets a range of requirements • put together a plan which shows the equipment and tools needed • describe a design using an accurately labelled diagram • select appropriate tools and techniques for making their product • measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques • join and combine materials and components accurately in temporary and permanent ways • weave • measure, tape or pin, cut and join fabric with some accuracy • use simple graphical communication techniques • apply a range of finishing techniques, including those from art and design, with some accuracy 	<ul style="list-style-type: none"> • come up with a range of ideas after collecting information • take a user's view into account when designing • produce a detailed step-by-step plan • use cross sectional planning to show a design • produce prototypes to show ideas • select appropriate tools, materials, components and techniques • assemble components make working models • use tools safely and accurately • construct products using permanent joining techniques • make modifications as they go along • pin, sew and stitch materials together create a product • achieve a quality product • Weigh and measure accurately (time, dry ingredients, liquids) • apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens • cut and join with accuracy to ensure a good-quality finish to the product • demonstrate resourcefulness when tackling practical problems • use techniques that involve a number of steps
<h2>Evaluate</h2>	<ul style="list-style-type: none"> • Begin to talk about changes made during the making process, e.g. making a decision to use a different joining method. 	<ul style="list-style-type: none"> • begin to explore objects to identify likes and dislikes of the designs • begin to suggest improvements to existing designs • evaluate my design or product against given design criteria • begin to show an understanding of how historical events or people have helped shape the technological world today • Investigate and analyse a range of existing products 	<ul style="list-style-type: none"> • look at products and talk about how they work • practise my evaluation skills by evaluating existing products? • evaluate my own products • suggest a change that could be made to improve a product? • refer to their design criteria as they design and make • use their design criteria to evaluate their completed products 	<ul style="list-style-type: none"> • test and evaluate my final product • evaluate the design to suggest improvements, considering the materials and methods that have been used • evaluate the appearance and function against the original criteria • practise my evaluation skills by evaluating existing products against criteria set? • explain why my finished product is going to be of good quality • explain how my product will appeal to the audience?

		<ul style="list-style-type: none"> • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • understand how key events and individuals in design and technology have helped shape the world • talk about their design ideas and what they are making • make simple judgements about their products and ideas against design criteria • suggest how their products could be improved 	<ul style="list-style-type: none"> • identify the strengths and areas for development in their ideas and products • consider the views of others, including intended users, to improve their work 	<ul style="list-style-type: none"> • Can I think about the aesthetic qualities of my work? • Can I think about the functionality of my work? • • critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make • evaluate their ideas and products against their original design specification
Cooking	<ul style="list-style-type: none"> • To begin to understand some of the tools, techniques and processes involved in food preparation. 	<ul style="list-style-type: none"> • begin to talk about how to be healthy • begin to show understanding of a varied diet • show some understanding about where different foods come from • cut, peel or grate ingredients safely and hygienically with some support • begin to measure or weigh using measuring cups or electronic scales • begin to assemble or cook ingredients • show some understanding of safety when cooking ingredients • how to name and sort foods into the five groups in The eatwell plate • that everyone should eat at least five portions of fruit and vegetables every day • how to prepare simple dishes safely and hygienically, without using a heat source • how to use techniques such as cutting, peeling and grating 	<ul style="list-style-type: none"> • choose the right ingredients for a product • Explain what to do to be hygienic and safe • use equipment safely • make sure that my product looks attractive • describe how my combined ingredients come together • that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate • that to be active and healthy, food and drink are needed to provide energy for the body • how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking 	<ul style="list-style-type: none"> • understand the importance of correct storage and handling of ingredients • begin to measure accurately and calculate ratios of ingredients to scale up or down from a recipe • begin to demonstrate a range of baking and cooking techniques • begin to create and refine recipes, including ingredients, methods, cooking times and temperatures • that recipes can be adapted to change the appearance, taste, texture and aroma • that different food and drink contain different substances – nutrients, water and fibre – that are needed for health • how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking
Opportunities to extend DT knowledge				
Giving children extra opportunities to create and make within class topics.				
	Links to most early learning goals Simple measures Developing cutting skills Mark making	Science – nutrition – healthy eating. Measures – length and weight Links to English texts Geography/ History – creating artefacts and models	Science – nutrition – healthy eating. Maths –angles, measure – length and weight, reading scales Links to English texts Geography/ History – creating artefacts and models	Science – nutrition – healthy eating – action of different foods as part of a healthy life style. Levers and pivots Maths –ratio, angles, measure Links to English texts Geography/ History – creating artefacts and models