



“Design is not just what it looks like and feels like. Design is how it works.” Steve Jobs, Co-founder Apple Inc

Intent

Our Design Technology curriculum has been carefully planned and designed to encompass the content of the National Curriculum and ensure that it reflects and is distinct to our locality.

- Pupils’ design technology education begins in the early years and builds year on year, developing pupils’ expertise.
- Curriculum plans have been constructed effectively to ensure that pupils know more, remember more and are able to do more.
- Golden Threads, based on the four key strands as well as cooking and nutrition have been identified for each year group and underpin the key knowledge and concepts taught through our curriculum.
- Key knowledge has been mapped out from the early years to the end of KS2 to ensure that that the curriculum is coherently sequenced and there is clear progression.
- The organisation of the curriculum builds knowledge so that pupils can draw on it in future learning.
- Vocabulary has been identified and outlined clearly so that this can be taught explicitly within lessons.
- Clearly defined end points have been identified to ensure that pupils build upon prior learning and develop their knowledge of key concepts.
- Pupils commit knowledge to their long-term memory through recalling and repeated practice outlined in plans.

Implementation

Within and beyond our classrooms we provide a range of opportunities and implement a range of teaching methods to ensure that over the course of study, teaching is designed to help learners to remember in the long term the content they have been taught and to integrate new knowledge into larger concepts.

- Knowledge organisers which outline knowledge (including vocabulary) all children must master and apply in lessons are introduced at the start and referred to throughout a unit of study.
- A well sequenced cycle of lessons carefully plans for progression and depth concentrating on design technology knowledge and skills suited to the age group.
- Lessons follow a consistent structure of: retrieval, explanation, application and assessment which may include such features as questioning, modelling, individual, partner, group or whole class activities.
- Enrichment activities/visits are carefully used where appropriate to ensure pupils are able to practise and apply their knowledge and skills.
- Our inclusive approach is demonstrated through the way in which tasks and activities are adapted to ensure that all pupils are able to access the curriculum.
- Through retrieval, teachers make sure that pupils can draw on what they already know so that they can remember more.
- Key vocabulary is explicitly taught to enable pupils to develop their range of design technology vocabulary and understanding.
- Assessment for learning strategies are used at the start, during and at the end of lessons to assess pupils’ learning and identify any gaps or misconceptions.

Impact

- Our Design Curriculum is high quality, well thought out and is planned to demonstrate progression. If children are keeping up with the curriculum, they are deemed to be making good or better progress. In addition, we measure the impact of our curriculum through the following methods:
 - Pre and post unit assessments
 - Assessment against ‘End of Year Expectations’ with clearly identified end points. These are then passed to the receiving teacher to ensure any gaps can be addressed when a key concept is revisited.



GOLDEN THREADS	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Designing	<u>EAD: Creating with materials</u> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used.	Understanding Contexts, Users and Purposes Across KS1 pupils should: <ul style="list-style-type: none"> work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment state what products they are designing and making say whether their products are for themselves or other users describe what their products are for say how their products will work say how they will make their products suitable for their intended users use simple design criteria to help develop their ideas 		Understanding Contexts, Users and Purposes Across KS2 pupils should: <ul style="list-style-type: none"> work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment describe the purpose of their products indicate the design features of their products that will appeal to intended users explain how particular parts of their products work In early KS2 pupils should also: <ul style="list-style-type: none"> gather information about the needs and wants of individuals and groups develop their own design criteria and use these to inform their ideas In late KS2 pupils should also: <ul style="list-style-type: none"> carry out research, using surveys, interviews, questionnaires and web-based resources identify the needs, wants, preferences and values of individuals and groups develop a simple design specification to guide their thinking 			
		Generating, Developing, Modelling and Communicating Ideas Across KS1 pupils should: <ul style="list-style-type: none"> 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 		Generating, Developing, Modelling and Communicating Ideas Across KS2 pupils should: <ul style="list-style-type: none"> 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 In early KS2 pupils should also: <ul style="list-style-type: none"> generate realistic ideas, focusing on the needs of the user make design decisions that take account of the availability of resources In late KS2 pupils should also: <ul style="list-style-type: none"> generate innovative ideas, drawing on research make design decisions, taking account of constraints such as time, resources and cost 			
Making	<u>EAD: Creating with materials</u> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations,	Planning Across KS1 pupils should: <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 		Planning Across KS2 pupils should: <ul style="list-style-type: none"> select tools and equipment suitable for the task explain their choice of tools and equipment in relation to 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 In early KS2 pupils should also: <ul style="list-style-type: none"> order the main stages of making In late KS2 pupils should also: <ul style="list-style-type: none"> produce appropriate lists of tools, equipment and materials that they need formulate step-by-step plans as a guide to making 			



	<p>explaining the process they have used.</p> <p><u>PD: Fine motor</u> Use a range of small tools, including scissors, paintbrushes and cutlery.</p>	<p>Practical Skills and Techniques Across KS1 pupils should:</p> <ul style="list-style-type: none"> • 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 	<p>Practical Skills and Techniques Across KS2 pupils should:</p> <ul style="list-style-type: none"> • follow procedures for safety and hygiene • use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components <p>In early KS2 pupils should also:</p> <ul style="list-style-type: none"> • measure, mark out, cut and shape materials and components with some accuracy • assemble, join and combine materials and components with some accuracy • apply a range of finishing techniques, including those from art and design, with some accuracy <p>In late KS2 pupils should also:</p> <ul style="list-style-type: none"> • accurately measure, mark out, cut and shape materials and components • accurately assemble, join and combine materials and components • accurately apply a range of finishing techniques, including those from art and design • use techniques that involve a number of steps • demonstrate resourcefulness when tackling practical problems
<p>Evaluating Products</p>	<p><u>EAD: Creating with materials</u> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used.</p>	<p>Own Ideas and Products Across KS1 pupils should:</p> <ul style="list-style-type: none"> • 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 	<p>Own Ideas and Products Across KS2 pupils should:</p> <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 <p>In early KS2 pupils should also:</p> <ul style="list-style-type: none"> • refer to their design criteria as they design and make • use their design criteria to evaluate their completed products <p>In late KS2 pupils should also:</p> <ul style="list-style-type: none"> • 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
		<p>Existing Products Across KS1 pupils should explore:</p> <ul style="list-style-type: none"> • what products are • who products are for • what products are for • how products work • how products are used • where products might be used • what materials products are made from • what they like and dislike about products 	<p>Existing Products Across KS2 pupils should investigate and analyse:</p> <ul style="list-style-type: none"> • how well products have been designed • how well products have been made • why materials have been chosen • what methods of construction have been used • how well products work • how well products achieve their purposes • how well products meet user needs and wants <p>In early KS2 pupils should also investigate and analyse:</p> <ul style="list-style-type: none"> • who designed and made the products • where products were designed and made • when products were designed and made • whether products can be recycled or reused <p>In late KS2 pupils should also investigate and analyse:</p> <ul style="list-style-type: none"> • how much products cost to make • how innovative products are • how sustainable the materials in products are • what impact products have beyond their intended purpose



			<p>Key Events and Individuals Across KS2 pupils should know:</p> <ul style="list-style-type: none"> about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products
<p>Technical Knowledge</p>	<p><u>EAD: Creating with materials</u> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used.</p>	<p>Making Products Work Across KS1 pupils should know:</p> <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 	<p>Making Products Work Across KS2 pupils should know:</p> <ul style="list-style-type: none"> 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 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 <p>In early KS2 pupils should also know:</p> <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 <p>In late KS2 pupils should also know:</p> <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
		<p>Food Preparation, Cooking and Nutrition Across KS1 pupils should know:</p> <ul style="list-style-type: none"> 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 and peeling 	<p>Food Preparation, Cooking and Nutrition Across KS2 pupils should know:</p> <ul style="list-style-type: none"> 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 <p>In early KS2 pupils should also know:</p> <ul style="list-style-type: none"> 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 <p>In late KS2 pupils should also know:</p> <ul style="list-style-type: none"> 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



KS1	Autumn Term Mechanisms – Buggy/Carriage	Spring Term Vegetable and Protein Wrap	Summer Term Hand Puppet
Prior Knowledge (Retrieval)	<p>EYFS/Year 1 Talk about simple mechanisms they have made before. Y1 – boat</p> <p>Design</p> <ul style="list-style-type: none"> Identify the function and purpose of their mechanism/structure. (What did they make? What did it need to be able to do?) Identify that mock ups are part of the design process. (How did they know that their design would work?) <p>Make</p> <ul style="list-style-type: none"> Identify materials they might use to build a mechanism. (What did they use to make their boat?) Identify tools they might use to build a mechanism. (What did they use to make their boat?) Identify that a plan is needed before beginning to build a structure/mechanism. (What do they need to do with all their ideas before they begin to make a mechanism?) Identify simple finishing techniques to improve the appearance of a mechanism. (How did they make their boat look better?) <p>Evaluate</p> <ul style="list-style-type: none"> Identify why they need to evaluate existing products and their own? (Existing products – to get ideas/ own product – to know what went well and what did not) <p>Vocabulary</p> <ul style="list-style-type: none"> Check the children understand and can use the term structure. 	<p>EYFS/Year 1 Talk about food they have made before. EYFS and Y1 – Fruit salad.</p> <ul style="list-style-type: none"> Describe that all food comes from plants and animals. Identify a range of fruit and vegetables. Identify if it possible to make something to eat without a heat source? Identify simple hygiene rules. Describe how to use tools to cut peel and grate and equipment safely knives and scissors. 	<p>Learning outside of school Talk about when they have made something out of fabric/textiles before.</p> <p>Design</p> <ul style="list-style-type: none"> Identify the function and purpose of their product. (What did they make? What was it for?) Identify that mock ups are part of the design process. (Did they need to practise first?) <p>Make</p> <ul style="list-style-type: none"> Identify materials they used/might use to make a textile product. Identify tools they used/might use to make a textile product. Identify that a plan is needed before beginning to make a product. (What do they need to do with all their ideas before they begin to make it?) <p>Evaluate</p> <ul style="list-style-type: none"> Identify why they need to evaluate existing products and their own? (Existing products – to get ideas/ own product – to know what went well and what did not)
Y2	<p>D & T Element - Mechanisms STEM – Buggy/carriages <u>Knowledge and Skills to be developed:</u> Designing Identify simple criteria for the intended user and purpose of their product.</p>	<p>D & T Element – Food and nutrition Vegetable and protein wrap <u>Knowledge and Skills to be developed:</u> Designing Identify simple criteria for the intended user and purpose of their product.</p>	<p>D & T Element - Textiles Hand puppet <u>Knowledge and Skills to be developed:</u> Designing Identify simple criteria for the intended user and purpose of their product.</p>



	<p>Make simple drawings and label materials and parts, describing what the purpose of their product is and how it will work. Create templates and mock-ups based on their own designs.</p> <p>Making Create a simple step by step plan. Select from a range of tools and equipment explaining their choices. Saws, bench hook and scissors Select from and use a range of materials and components according to their characteristics. Measure, mark, cut and shape a range of materials and components. Assemble, join and combine materials in order to make a product. Use finishing techniques to improve the appearance of their product.</p> <p>Evaluating Explore and evaluate a range of existing products. Make simple judgements about their products and ideas against design criteria. Suggest how their products could be improved.</p> <p>Technical Knowledge Explore and use mechanisms in their products. Wheels and axles Build freestanding structures applying knowledge of how to make the structure stronger, stiffer and more stable.</p>	<p>Make simple drawings and label materials and parts, describing what the purpose of their product is and how it will work.</p> <p>Making Create a simple step by step plan. Select from a range of tools and equipment explaining their choices. Knives, scissors and spoons. Select from and use a range of materials and components according to their characteristics- range of vegetables Measure, mark, cut and shape a range of materials and components. Assemble, join and combine materials in order to make a product. Use finishing techniques to improve the appearance of their product.</p> <p>Evaluating Explore and evaluate a range of existing products. Make simple judgements about their products and ideas against design criteria. Suggest how their products could be improved.</p> <p>Technical Knowledge Use the correct technical vocabulary for the projects they are undertaking, such as- slicing, cutting, peeling Know how to combine ingredients according to their sensory characteristics.</p> <p>Cooking and Nutrition Describe that all food comes from plants and animals. Identify that food has to be farmed, grown elsewhere or caught. Name and sort foods into the 5 groups in the Eatwell plate: Fruit and vegetables</p> <p>Carbohydrates</p> <p>Protein</p> <p>Dairy and other alternatives</p> <p>Oil and spreads Prepare a simple dish safely and hygienically, without using a heat source. Cut, grate, peel, fold and roll</p> <p>Links with Science</p>	<p>Make simple drawings and label materials and parts, describing what the purpose of their product is and how it will work. Create templates and mock-ups based on their own designs.</p> <p>Making Create a simple step by step plan. Select from a range of tools and equipment explaining their choices. Scissors, needles and threads. Select from and use a range of materials and components according to their characteristics. Measure, mark, cut and shape a range of materials and components, threads and fabric Assemble, join and combine materials in order to make a product. Threading a needle, tying a knot and a running stitch. Use finishing techniques to improve the appearance of their product.</p> <p>Evaluating Explore and evaluate a range of existing products. Make simple judgements about their products and ideas against design criteria. Suggest how their products could be improved.</p> <p>Technical Knowledge Use the correct technical vocabulary for the projects they are undertaking, such as- threading the needle, needle, thread, fastening, joining, identical shapes, running stitch.</p>
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Future Learning	Pneumatic systems/Mini Treehouses (Y3) <ul style="list-style-type: none"> Create own design criteria Draw annotated sketches Create a plan – ordering the main stages of making Select a wider range of materials/tools and be able to explain choices. Assemble materials with accuracy. Describe how mechanical systems create movement. 	Pizza (Y3) <ul style="list-style-type: none"> Identify that food is grown, reared and caught in the UK, Europe and the wider world. Identify that a healthy diet is made up from a variety and balance of different food and drink, (Eatwell plate). 	Christmas Stockings (Y4) <ul style="list-style-type: none"> Making a Christmas stocking, joining materials using blanket stitch, overcast stitch, threading a needle and tying a knot. Using simple electrical circuits and components to create electrical system with an input and input process. Draw annotated sketches and cross-sectional drawings to communicate design ideas. Model their ideas using prototypes and pattern pieces.
Design Vocabulary	Design, product, design criteria, drawings, labels, mock-up, purpose, user, audience, materials, parts, develop, communicate, sketch, suitable, strength, decorate, stable	Design, product, design criteria, drawings, labels, mock-up, purpose, user, audience, materials, food groups, develop, communicate, sketch, suitable, ingredients	Design, product, design criteria, drawings, labels, mock-up, purpose, user, audience, materials, parts, develop, communicate, fabric, sketch, suitable, strength, decorate
Make Vocabulary	Bench hook, saws, sawing, wooden dowel, wheel, axle, chassis, body, tools, components, measure, mark, assemble, join, strong, stable, techniques, decorate, finish	knives, chopping board, scissors, spoons, make, ingredients, fruit and vegetables, protein, carbohydrates, components, assemble, combine	Needle, thread, template, mock up, function, make, fastenings, join/joining, techniques, running stitch, assembling, features, components, threading, decorate, finish
Evaluate Vocabulary	Evaluate, finished product, quality, improve	Evaluate, finished product, quality, improve	Evaluate, finished product, quality, improve
Technical Knowledge Vocabulary	Mechanism, moving parts, buggy/carriage, vehicle, wheels, axles, axel holder, chassis, body, sawing	Protein, fruit and vegetables, carbohydrates, dairy, oil and spreads, nutrition, hygiene, healthy, slicing, cutting, peeling, grate, fold, roll, balanced diet, bridge grip, claw grip	Threading, needle, thread, fastening, joining, identical, shapes
Quality texts	See Inside – How Things Work, Conrad Mason	Sam's Sandwich. David Pelham	
Enrichment activities (e.g. visits/ visitors into schools)	York Railway Museum	Fun Filled Food Journey - LA	Puppet Show – Lee Threadgold?
National Curriculum	Design <ul style="list-style-type: none"> design purposeful, functional, appealing products for themselves and other users based on design criteria generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology Make <ul style="list-style-type: none"> select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] 	Design <ul style="list-style-type: none"> design purposeful, functional, appealing products for themselves and other users based on design criteria generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology Make <ul style="list-style-type: none"> select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] 	Design <ul style="list-style-type: none"> design purposeful, functional, appealing products for themselves and other users based on design criteria generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology Make <ul style="list-style-type: none"> select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]



	<ul style="list-style-type: none"> select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics <p>Evaluate</p> <ul style="list-style-type: none"> explore and evaluate a range of existing products evaluate their ideas and products against design criteria <p>Technical knowledge</p> <ul style="list-style-type: none"> build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. 	<ul style="list-style-type: none"> select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics <p>Evaluate</p> <ul style="list-style-type: none"> evaluate their ideas and products against design criteria <p>Knowledge</p> <ul style="list-style-type: none"> use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from. 	<ul style="list-style-type: none"> select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics <p>Evaluate</p> <ul style="list-style-type: none"> explore and evaluate a range of existing products evaluate their ideas and products against design criteria
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