



Brookland Junior School

DT Curriculum Overview

Intent

At Brookland Junior School we intend to build a Design Technology curriculum which is inspiring, challenging and practical. We want our children to use creativity and imagination, to design and make products that solve real and relevant problems within a range of contexts, considering their own and others' needs, wants and values. We intend for all children to acquire appropriate subject knowledge, skills and understanding as set out in the National Curriculum. It is our aim to create strong cross curricular links with other subjects, such as Mathematics, Science, Computing and Art. We want Design and Technology to prepare our children, to give them the opportunities, responsibilities, and experiences they need to be successful in later life.

'We feel the learning skills needed in DT are teamwork, quality, listening, evaluate and determination. However, resilience is really important in order to succeed'. The children are also given opportunities to reflect upon and evaluate past and present design technology, its uses effectiveness and are encouraged to become innovators and risk-takers.

Implementation

Through a variety of creative and practical activities, we teach the knowledge, understanding and skills needed to engage in a process of designing, making and evaluating. The children design and create products that consider function and purpose and which are relevant to a range of sectors (for example, the home, school, culture, enterprise, industry, environment and climate change).

When designing and making, the children are taught to:

- Research: use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Understand how key events and individuals in design and technology have helped shape the world.
- Skills: learning about the designed and made world and how things work and learning to design and make functional products for particular purposes and users.
- Planning: generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional diagrams, prototypes, pattern pieces and computer-aided design.
- Make: select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing, as well as chopping and slicing) accurately. Hand pick from and use a wider range of materials, ingredients and components, including construction materials, textiles and ingredients, according to their functional properties, aesthetic qualities and, where appropriate, taste.
- Evaluate: investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

DT has been carefully mapped across the school to ensure broad and balanced coverage and to establish relevant links to other curriculum subjects and our own locality. In order to maximise on time, lessons are taught as a block so that children’s learning is focused throughout each unit of work. Further enrichment can be accessed through a lunchtime club and two cookery clubs after school using the mini kitchen available for cookery projects.

Learner’s key skills and knowledge for DT have been mapped across the school to ensure progression between year groups and build on learning from KS1. The context for the children’s work in Design and Technology is also well considered and children learn about real life structures and the purpose of specific examples, as well as developing their skills throughout the programme of study.

“DT is design, creating and making. Design is found in fashion, it always has a purpose. It is used in games and toys. Everything has been designed.”

Impact

At Brookland Junior School, our children will have the knowledge and skills necessary to move confidently to the next step of their learning journey. They will have and use the correct subject vocabulary to understand and communicate their learning in DT and express their ideas. Through the solving of relevant problems, our children will understand the importance of design in solving some of the world's problems such as climate change and plastic pollution and how good design can prevent some issues from arising in the first place. By following our clear design and making sequence, our children will build resilience in problem solving and develop the ability to think creatively. They will be challenged to develop original ideas as well as to build on the ideas of others when working collaboratively.

Key skills highlighted in yellow

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3		<p>Moving Page (Moving Mechanism) Establish how a designer/illustrator has helped shape a product.</p> <p>Use techniques which require more accuracy to cut, shape, join and finish the work</p> <p>Use knowledge of techniques</p>			<p>Photo Frames (Stable Structure)</p> <p>Use knowledge of existing products to design their own functional product.</p> <p>Investigate and analyse existing products and those they have made, considering a wide range of factors.</p> <p>Apply techniques to strengthen structures and explore their own ideas.- Strengthening frames</p>	<p>Healthy Sandwiches - Cooking and nutrition (Food and Nutrition)</p> <p>Talk about different food groups and name a food from each group.</p> <p>Consider how food has been grown, farmed or caught in Europe and the wider world.</p> <p>Use a wider variety of ingredients and techniques to prepare and combine</p>

		<p>and the functional and aesthetic qualities of a wide range of materials to plan how to use them.</p> <p>Apply techniques to strengthen structures and explore their own ideas.</p>			<p>using corner braces.</p> <p>Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them.</p> <p>Evaluate their end product against their original design.</p>	<p>ingredients safely.</p>
<p>Year 4</p>	<p>Light Tower: (Stable Structure) Devise and use electrical systems in products.</p> <p>Consider how existing products and their own finished product might be improved and how well they meet the needs of the intended user.</p> <p>Make suitable</p>	<p>Monsters Dragon - (Moving Mechanism)</p> <p>Safely measure, mark and cut, assemble and join with some accuracy</p> <p>Discover how mechanical systems such as pneumatic systems create movement. Create designs using annotated sketches, cross</p>				<p>Crepe making: (Food and Nutrition)</p> <p>Consider what makes a healthy and balanced diet and that different foods and drinks provide different substances the body needs to be healthy.</p> <p>Research seasonality and the advantages of eating seasonal and locally produced food.</p> <p>Read and follow recipes which involve several processes, skills and techniques.</p>

	<p>choices from a wider range of tools and components and unfamiliar materials according to their functional properties to create a stable structure.</p>	<p>sectional diagrams</p>				
<p>Year 5</p>		<p>Moving Habitat</p> <p>(Moving Mechanism)</p> <p>Use research into existing products to inform the design of their own product.</p> <p>Make careful and precise measurements so that joins, holes and openings are in exactly the right place.</p> <p>Discover how to use more complex mechanical systems.</p>			<p>DT Bridges</p> <p>(Stable Structure)</p> <p>Create prototypes to show ideas.</p> <p>Critique prototypes made against design criteria</p> <p>Build more complex 3D structures and apply their knowledge of strengthening techniques to make them stronger or more stable.</p> <p>Research and discuss various architects and engineers, discuss their processes and explain how these were used in the finished product.</p> <p>Lego Robots</p> <p>(Technology)</p>	<p>Pizzeria - (Cooking and Nutrition)</p> <p>Research the main food groups and the different nutrients that are important for health.</p> <p>Explain how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable.</p> <p>Select appropriate ingredients and use a wide range of techniques to combine them.</p> <p>Produce step by step plans to guide the making, demonstrating the knowledge and application of different materials, tools and techniques.</p>

		<p>Make detailed evaluations about existing products and consider the views of others to improve the work.</p>			<p>Apply their understanding of computing to program, monitor and control their products - investigating, modelling and design (see computing plans)</p>	
<p>Year 6</p>		<p>Design a meal that is based on the WW2 rationing experience.</p> <p>(Food and Nutrition)</p> <p>Prepare and cook using a range of cooking techniques.</p> <p>Confidently plan a meal with rationed ingredients that is also healthy. Use information on food labels to inform choices.</p> <p>Research, plan and prepare and cook a savoury dish, applying their</p>	<p>Fairgrounds</p> <p>Lego Robots</p> <p>(Moving Mechanism – Technology)</p> <p>Apply their understanding of computing to program, monitor and control their products - design to solve problems (see computing plans)</p> <p>Test products for effectiveness against the design criteria, Critique and make evaluative comments with reference to famous designers.</p>	<p>Houses with Flood defences or withstand earthquakes?</p> <p>(Stable Structure)</p> <p>Communicate ideas through discussion, annotated sketches, prototypes and evaluate</p> <p>Use research into famous architects and designers to inform the design of their own innovative product</p> <p>Use a range of materials to strengthen, stiffen and reinforce complex structures and can use them accurately and</p>		

		knowledge of ingredients and technical skills.		appropriately. Use technical knowledge of materials and accurate skills to problem solve during the making process.		
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AIMS/INTENT From the National Curriculum

- A. Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
- B. 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.
- C. Critique, evaluate and test their ideas and products and the work of others.
- D. Understand and apply the principles of nutrition and learn how to cook.

KEY SKILL THREADS FOR YEAR 3			
Technical Knowledge Creative, technical and practical expertise for everyday tasks and technological world	Design and Make Build and apply a repertoire of knowledge, understanding and skills in order to design and make	Evaluate Critique, evaluate and test prototypes and products	Cook Understand and apply the principles of nutrition and learn how to cook.
Use techniques which require more accuracy to cut, shape, join and finish the work. Apply techniques to strengthen structures and explore their own ideas.	Use knowledge of existing products to design their own functional product. Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them.	Investigate and analyse existing products and those they have made, considering a wide range of factors Evaluate their end product against their original design. Establish how a designer has helped shape	Talk about different food groups and name a food from each group. Consider how food has been grown, farmed or caught in Europe and the wider world.

Strengthening frames using corner braces.	Use knowledge of techniques and the functional and aesthetic qualities of a wide range of materials to plan how to use them.	a product	Use a wider variety of ingredients and techniques to prepare and combine ingredients safely.
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KEY SKILL THREADS FOR YEAR 4

Technical Knowledge Creative, technical and practical expertise for everyday tasks and technological world	Design and Make Build and apply a repertoire of knowledge, understanding and skills in order to design and make	Evaluate Critique, evaluate and test prototypes and products	Cook Understand and apply the principles of nutrition and learn how to cook.
<p>Safely measure, mark and cut, assemble and join with some accuracy</p> <p>Discover how mechanical systems such as pneumatic systems create movement.</p> <p>Devise and use electrical systems in products.</p> <p>Add detail to work using different types of stitch</p>	<p>Create designs using annotated sketches, cross sectional diagrams</p> <p>Create designs using exploded diagrams</p> <p>Make suitable choices from a wider range of tools and components and unfamiliar materials according to their functional properties.</p>	<p>Consider how existing products and their own finished product might be improved and how well they meet the needs of the intended user.</p> <p>Use knowledge of existing products to design a functional and appealing product for a particular purpose.</p> <p>Discover how a designer has influenced the making of a particular feature.</p>	<p>Consider what makes a healthy and balanced diet and that different foods and drinks provide different substances the body needs to be healthy.</p> <p>Research seasonality and the advantages of eating seasonal and locally produced food.</p> <p>Read and follow recipes which involve several processes, skills and techniques.</p>

KEY SKILL THREADS FOR YEAR 5

Technical Knowledge Creative, technical and practical expertise for everyday tasks and technological world	Design and Make Build and apply a repertoire of knowledge, understanding and skills in order to design and make	Evaluate Critique, evaluate and test prototypes and products	Cook Understand and apply the principles of nutrition and learn how to cook.
<p>Make careful and precise measurements so that joins, holes and openings are in exactly the right place.</p> <p>Discover how to use more complex mechanical systems.</p> <p>Apply their understanding of</p>	<p>Produce step by step plans to guide the making, demonstrating the knowledge and application of different materials, tools and techniques.</p> <p>Build more complex 3D structures and apply their knowledge of strengthening techniques to make</p>	<p>Critique prototypes made against design criteria</p> <p>Use research into existing products to inform the design of their own product.</p> <p>Make detailed evaluations about existing products and consider the views of others to improve the work.</p>	<p>Research the main food groups and the different nutrients that are important for health.</p> <p>Explain how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable.</p>

computing to program, monitor and control their products – investigating, modelling and design (see computing plans)	them stronger or more stable. Create prototypes to show ideas.	Research and discuss various architects and engineers, discuss their processes and explain how these were used in the finished product.	Select appropriate ingredients and use a wide range of techniques to combine them.
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KEY SKILL THREADS FOR YEAR 6			
Technical Knowledge Creative, technical and practical expertise for everyday tasks and technological world	Design and make Build and apply a repertoire of knowledge, understanding and skills in order to design and make	Evaluate Critique, evaluate and test prototypes and products	Cook Understand and apply the principles of nutrition and learn how to cook.
<p>Use technical knowledge of materials and techniques to refine and rework the product to improve its functional properties and aesthetic qualities.</p> <p>Apply their understanding of computing to program, monitor and control their products – design to solve problems (see computing plans)</p> <p>Use a range of materials to strengthen, stiffen and reinforce complex structures and can use them accurately and appropriately.</p>	<p>Use technical knowledge and accurate skills to problem solve during the making process.</p> <p>Communicate ideas through discussion, annotated sketches, prototypes and evaluate</p>	<p>Use knowledge of famous designs to further explain the effectiveness of existing products and products they have made.</p> <p>Use research into famous architects and designers to inform the design of their own innovative product</p> <p>Test products for effectiveness against the design criteria, critique and make evaluative comments with reference to famous designers.</p>	<p>Prepare and cook using a range of cooking techniques.</p> <p>Confidently plan a series of healthy meals based on the principles of a healthy and varied diet.</p> <p>Research, plan and prepare and cook a savoury dish, applying their knowledge of ingredients and technical skills.</p> <p>Use information on food labels to inform choices.</p>