Brookland Junior School
DT Curriculum Overview

Intent

Our aim at Brookland is to inspire pupils to be creative and imaginative whilst developing practical skills. Pupils can work together to follow a design and make process and evaluate their end product. Design and Technology is an inspiring, rigorous and practical subject. Design and Technology encourages children to learn to think critically and intervene creatively to solve problems both as individuals and as members of a team using the Brookland learning skills to underpin the process. Through the Whole School meeting, the children said,
'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 and its effectiveness and are encouraged to become innovators and risk-takers.

D&T allows pupils to solve problems, think creatively and develop ideas within a defined purpose for a tangible outcome. The school is committed to nurturing pupils' curiosity and creativity, as well as preparing them for living and working in a modern world where technology is rapidly changing and advancing. We intend that pupils can apply their learning to cross-curricular subjects, everyday life and recognise how Design Technology plays a part in our culture and community.

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:

Design:

- Finding out: 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 and 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. Select 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.

Key skills and key knowledge for DT have been mapped across the school to ensure progression between year groups and build on learning in 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. Design and technology lessons are also taught as a block so that children's learning is focused throughout each unit of work.

Further enrichment can be accessed through two cookery clubs after school using the mini kitchen available for cookery projects.

"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

We ensure the children:

• 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 and evaluate and test their ideas and products and the work of others promoting peer on peer support and evaluation.

• understand and apply the principles of nutrition and learn how to cook. Children will design and make a range of products. A good quality finish will be expected in all design and activities made appropriate to the age and ability of the child.

Children learn how to take risks, becoming resourceful, innovative, enterprising, resilient and capable global 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.

Key skills highlighted in yellow

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3		**Moving Books** Establish how a designer/illustrator has helped shape a product. Use techniques which require more accuracy to cut, shape, join and finish			**Photo Frames** Use knowledge of existing products to design their own functional product. Investigate and analyse existing products and those they have made, considering a wide range of factors.	**Healthy Sandwiches – Cooking and nutrition** 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.

		the work Use knowledge of techniques and the functional and aesthetic qualities of a wide range of materials to plan how to use them. Apply techniques to strengthen structures and explore their own ideas.			Apply techniques to strengthen structures and explore their own ideas.- Strengthening frames using corner braces. Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them. Evaluate their end product against their original design.	Use a wider variety of ingredients and techniques to prepare and combine ingredients safely.
Year 4	**Moving Monsters - Pneumatics** Safely measure, mark and cut, assemble and join with some accuracy Discover how mechanical systems such as pneumatic systems create movement.	**Buzzer Games:** Devise and use electrical systems in products. Consider how existing products and their own finished product might be improved and how well they meet the needs of the		**Greek Dips and flatbreads:** Consider what makes a healthy and balanced diet and that different foods and drinks provide different substances the body needs to be healthy. Research seasonality and the advantages of eating seasonal and locally produced food. Read and follow		**Money containers** Create designs using exploded diagrams Use knowledge of existing products to design a functional and appealing product for a particular purpose. Add detail to work using different types of stitch Discover how a designer has influenced the making of a particular feature.

	Create designs using annotated sketches, cross sectional diagrams	intended user. Make suitable choices from a wider range of tools and components and unfamiliar materials according to their functional properties.		recipes which involve several processes, skills and techniques.		
Year 5		**Moving Toys** Use research into existing products to inform the design of their own product. Make careful and precise measurements so that joins, holes and openings are in exactly the right place. Discover how to use more complex mechanical systems. Make detailed evaluations			**DT Bridges** Create prototypes to show ideas. Critique prototypes made against design criteria Build more complex 3D structures and apply their knowledge of strengthening techniques to make them stronger or more stable. Research and discuss various architects and engineers, discuss their processes and explain how these were used in the finished product. **Lego Robots** Apply their understanding of computing to program, monitor and control their	**Pizzeria – cooking and nutrition** Research the main food groups and the different nutrients that are important for health. Explain how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable. Select appropriate ingredients and use a wide range of techniques to combine them. Produce step by step plans to guide the making, demonstrating the knowledge and application of different materials, tools and techniques.

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

				problem solve during the making process.		

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. Strengthening frames using corner braces.	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. Use knowledge of techniques and the functional and aesthetic qualities of a wide range of materials to plan how to	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 a product	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. Use a wider variety of ingredients and techniques to prepare and combine

	use them.		ingredients safely.
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.**
Safely measure, mark and cut, assemble and join with some accuracy Discover how mechanical systems such as pneumatic systems create movement. Devise and use electrical systems in products. Add detail to work using different types of stitch	Create designs using annotated sketches, cross sectional diagrams Create designs using exploded diagrams Make suitable choices from a wider range of tools and components and unfamiliar materials according to their functional properties.	Consider how existing products and their own finished product might be improved and how well they meet the needs of the intended user. Use knowledge of existing products to design a functional and appealing product for a particular purpose. Discover how a designer has influenced the making of a particular feature.	Consider what makes a healthy and balanced diet and that different foods and drinks provide different substances the body needs to be healthy. Research seasonality and the advantages of eating seasonal and locally produced food. Read and follow recipes which involve several processes, skills and techniques.

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.**
Make careful and precise measurements so that joins, holes and openings are in exactly the right place. Discover how to use more complex mechanical systems. Apply their understanding of computing to program, monitor and control their products – investigating, modelling and design (see computing plans)	Produce step by step plans to guide the making, demonstrating the knowledge and application of different materials, tools and techniques. Build more complex 3D structures and apply their knowledge of strengthening techniques to make them stronger or more stable. Create prototypes to show ideas.	Critique prototypes made against design criteria Use research into existing products to inform the design of their own product. Make detailed evaluations about existing products and consider the views of others to improve the work. Research and discuss various architects and engineers, discuss their processes and explain how these were used in the finished product.	Research the main food groups and the different nutrients that are important for health. Explain how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable. Select appropriate ingredients and use a wide range of techniques to combine them.
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.**

Use technical knowledge of materials and techniques to refine and rework the product to improve its functional properties and aesthetic qualities. Apply their understanding of computing to program, monitor and control their products – design to solve problems (see computing plans) Use a range of materials to strengthen, stiffen and reinforce complex structures and can use them accurately and appropriately.	Use technical knowledge and accurate skills to problem solve during the making process. Communicate ideas through discussion, annotated sketches, prototypes and evaluate	Use knowledge of famous designs to further explain the effectiveness of existing products and products they have made. Use research into famous architects and designers to inform the design of their own innovative product Test products for effectiveness against the design criteria, critique and make evaluative comments with reference to famous designers.	Prepare and cook using a range of cooking techniques. Confidently plan a series of healthy meals based on the principles of a healthy and varied diet. Research, plan and prepare and cook a savoury dish, applying their knowledge of ingredients and technical skills. Use information on food labels to inform choices.