

Design and Technology

Intent

At The Vine Schools, our Design and Technology (D&T) curriculum is designed to inspire creativity, imagination, and innovation in our learners, equipping them with the skills to design and make products that solve real-world problems. We aim to cultivate confident and capable citizens who are resourceful, enterprising, and innovative, encouraging them to reflect on and evaluate the impact of design and technology on society and daily life.

Our D&T curriculum is broad, drawing on key disciplines such as mathematics, science, engineering, computing, and art, to enable learners to understand the interdisciplinary nature of design. We aim for all pupils to develop essential skills that will allow them to take risks and confidently approach challenges. We also promote an awareness of the historical, cultural, and technological developments that have shaped the world around us.

We aspire to foster a love for D&T, where children explore and develop their ideas, gain a deep understanding of design processes, and appreciate the contributions of great designers, engineers, and inventors. Through creative, hands-on experiences, pupils will gain confidence in drafting design concepts, building prototypes, and testing their ideas, all while building their personal, social, and emotional development through collaboration and self-reflection. Our curriculum also highlights the importance of sustainability and ethical design, providing opportunities for pupils to consider the environmental and societal impact of their creations.

Implementation

Our D&T curriculum is delivered progressively, following the objectives outlined in the National Curriculum for EYFS, Key Stage 1, and Key Stage 2. This ensures that pupils meet their end-of-key-stage attainment targets while continuously building on their skills and knowledge.

We use the Kapow Primary Design Technology scheme, which provides a structured and sequenced approach to teaching D&T. Each unit consists of five to six lessons, typically alternating with Art over the three terms. The lessons are designed to cover all aspects of the design process: **design, make, and evaluate**. Pupils learn about each of these stages, applying technical knowledge and gaining contextual, historical, and technical understanding along the way.

Throughout their primary education, pupils revisit six key areas within D&T:

- **Cooking and Nutrition:** This covers skills such as food preparation, seasonality, diet, and food origins.
- **Textiles:** Pupils will explore techniques and materials in fabric and design.
- **Mechanisms:** Focusing on understanding and designing moving parts.
- **Structures:** Building an understanding of materials and how structures are designed.
- **Electrical Systems (KS2 only):** Understanding and creating electrical circuits and systems.
- **Digital World (KS2 only):** Introducing pupils to the use of computing and digital technologies in design.

Lessons incorporate both practical tasks and theoretical understanding, ensuring that children engage in hands-on activities while building their knowledge. Learning is recorded in individual D&T books and through collaborative class projects, ensuring pupils can reflect on their designs and developments. Throughout the units, children are encouraged to work independently, in pairs, small groups, or as a whole class, fostering collaboration and a sense of shared creativity.

We also place great emphasis on developing subject-specific vocabulary, which is reinforced throughout all key stages. Teachers and pupils alike use this vocabulary to articulate and analyse their design work with confidence. The curriculum is inclusive, ensuring differentiated instruction that supports the needs of all children, regardless of their abilities. Children are encouraged to continually test, evaluate, and improve their designs, helping to build resilience and problem-solving skills.

Impact

The impact of our Design and Technology curriculum at The Vine Schools is seen through the high level of engagement and enjoyment in the subject. Pupils are able to articulate their learning through self-reflection and peer feedback, demonstrating confidence in evaluating their own work and the work of others. The development of technical skills, creativity, and problem-solving abilities is evident in pupils' progress over time, as they are able to apply these skills across the curriculum and beyond.

By the time children leave The Vine Schools, they will have a strong foundation in D&T, equipped with the knowledge and skills to design, make, and evaluate products creatively and critically. Our pupils will have gained a deep understanding of the world of design and technology, with the ability to think innovatively and responsibly. They will have experienced the process of taking an idea from concept to finished product, with an appreciation of how design shapes the world around them.

The impact of our curriculum is also monitored through pupil voice, formative and summative assessments, and regular feedback from both staff and pupils. Teachers track progress through a detailed tracking grid, assessing both the knowledge and skills gained through each unit. Children's work is showcased around the school, with displays of completed projects and the development of design concepts, allowing pupils to take pride in their work and see the value of their creative expression.

We also monitor the success of our curriculum through the ongoing professional development of staff, ensuring teachers are confident in delivering the curriculum and have the support they need to continuously improve. The positive attitudes towards D&T that are nurtured in our school will provide children with the foundation for success in their future education and beyond, making them appreciative of the role of design and technology in shaping the world.

EYFS

The DT curriculum traces its origins back to the learning experiences in the EYFS, influencing various objectives within this integrated curriculum. Notably, its impact is most pronounced in the domains of 'Technology,' 'Expressive Arts and Design,' and 'Creating with materials.'

Expressive Arts and Design

Fostering children's artistic and cultural awareness is instrumental in nurturing their imagination and creativity. Regular exposure to the arts is vital, providing children with opportunities to explore and experiment with a diverse array of media and materials. The quality and diversity of their artistic encounters significantly contribute to developing their comprehension, self-expression, vocabulary, and communication skills through the arts. The frequency, repetition, and depth of these experiences play a fundamental role in their advancement in interpreting, responding to, and appreciating what they hear, observe, and engage with.

Early Learning Goal

ELG: Creating with Materials

Children at the expected level of development will:

- 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;

Curriculum Overview

Year Group	Structures	Mechanisms	Textiles	Cooking and Nutrition	Electrical Systems	Digital World
KS1 Year A	Constructing a windmill	Wheels and Axles	Pouches			
KS1 Year B		Moving book story	Puppets	Fruits and vegetables		
KS2 Year A	Bridges	Pneumatic Toys			Electric poster	
KS2 Year B	Playgrounds	Make a pop up book		What could be healthier?		

KS2 Year C			Fastenings		Steady hand games	Monitoring devices
KS2 Year D			Make do and mend	Adapting a recipe		Navigating the world.

..

National Curriculum

Key stage 1 - National Curriculum Design and Technology subject content	Strands	KS1 Year A	KS1 Year B
Pupils should be taught to:			
Design purposeful, functional, appealing products for themselves and other users based on design criteria	Design	Constructing a windmill Wheels and Axles	Moving book story Puppets
Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	Design	Constructing a windmill Wheels and Axles	Moving book story Puppets
Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]	Make	Constructing a windmill	Moving book story
Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	Make	Constructing a windmill	Moving book story Puppets
Explore and evaluate a range of existing products	Evaluate	Wheels and Axles	Puppets
Evaluate their ideas and products against design criteria	Evaluate	Wheels and Axles	Moving book story Puppets
Build structures, exploring how they can be made stronger, stiffer and more stable	Technical Knowledge	Constructing a windmill	
Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Technical Knowledge	Wheels and Axles	Moving book story
Use basic principles of a healthy and varied diet to prepare dishes	Cooking and Nutrition		Fruit and Vegetables
Understand where food comes from	Cooking and Nutrition	Fruit and Vegetables	

Key stage 2 - National Curriculum Design and technology subject content	Strands	KS2 Year A	KS2 Year B	KS2 Year C	KS2 Year D
Pupils should be taught to:					
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	Design	Pneumatic Toys	Playgrounds	Fastenings Steady hand games	Make do and mend Navigating the world.

Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design	Design	Bridges Electric poster	Playgrounds	Fastenings Steady hand games	Make do and mend Navigating the world.
Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	Make	Pneumatic Toys	Make a pop up book	Fastenings	Make do and mend
Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities	Make	Bridges	Playgrounds	Fastenings	
Investigate and analyse a range of existing products	Evaluate	Pneumatic Toys Electric poster	Playgrounds	Steady hand games	Make do and mend
Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	Evaluate	Bridges	Make a pop up book	Steady hand games	
Understand how key events and individuals in design and technology have helped shape the world	Evaluate	Bridges		Steady hand games	Make do and mend
Apply their understanding of how to strengthen, stiffen and reinforce more complex structures	Technical Knowledge	Pneumatic Toys	Playgrounds	Monitoring devices	Make do and mend
Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	Technical Knowledge	Pneumatic Toys Bridges	Make a pop up book	Fastenings Monitoring devices	
Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]	Technical Knowledge	Electric poster		Steady hand games Monitoring devices	
Apply their understanding of computing to program, monitor and control their products	Technical Knowledge	Electric poster		Steady hand games Monitoring devices	Navigating the world.
Understand and apply principles of a healthy and varied diet	Cooking and Nutrition	(Through Science curriculum)	What could be healthier?		Adapting a recipe
Prepare and cook variety of predominantly savoury dishes using a range of cooking techniques	Cooking and Nutrition	Windrush cooking unit (Geo)	What could be healthier?		Adapting a recipe
Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed	Cooking and Nutrition	Windrush cooking unit (Geo)	What could be healthier?		Adapting a recipe