Design Technology

Curriculum Overview and Progression Mapping

Upper Wharfedale Primary Federation

Introduction

At the heart of our Design & Technology curriculum lies the guiding light of our federation vision: **“Be the Light” (Matthew 5:14)**. We believe every child carries a spark of creativity, curiosity, and problem-solving potential. Through Design & Technology, we nurture that light, encouraging pupils to design imaginatively, think critically, and create with purpose, confidence, and joy. DT empowers children to make a positive difference in their world by solving real problems that matter to them and their community.

Design & Technology is more than a subject: **it is a process of exploration, innovation, and discovery**. It invites children to investigate how things work, to develop and test ideas, and to refine solutions through hands-on learning. Our curriculum builds resilience, creativity, and practical capability, helping children become thoughtful, resourceful individuals who value making, improving, and evaluating.

Our core values -**Love, Thankfulness, Trust, Forgiveness, and Kindness**- are woven into every stage of the design process. They guide how pupils collaborate, share resources, test ideas respectfully, and celebrate one another’s achievements. In embracing these values, children learn to ‘be the light’ - designing with empathy, working with integrity, and creating products that help, uplift, and inspire others.

Contents

Intent Statement

At The Upper Wharfedale Primary Federation, we believe that Design and Technology is a vital element of a broad and balanced curriculum. DT provides pupils with authentic opportunities to solve real and relevant problems while considering the needs, values, and experiences of others. Through hands-on exploration, it promotes creative thinking, practical capability, and technological understanding, helping children grow as imaginative innovators and reflective critical thinkers.

We are guided by the conviction expressed by Sir Ken Robinson:
"Creativity is as important now in education as literacy, and we should treat it with the same status."

Our DT curriculum equips pupils with the knowledge, skills, and attitudes needed to design, make, evaluate, and improve purposeful and meaningful products. Children learn how design influences daily life, how technologies evolve over time, and how thoughtful innovation has the power to shape a better future.

Implementation

At The Upper Wharfedale Primary Federation, Design and Technology is taught through creative and practical activities that enable children to follow an iterative design process. Pupils design and make products with a clear purpose, linked to meaningful, real-world contexts such as the home, school, leisure and the wider environment. Each project allows pupils to explore needs, develop ideas, create prototypes and evaluate outcomes so they can refine and improve their work.

Children are taught to research existing products and user needs, develop design criteria and use this information to create innovative and functional ideas. They communicate these ideas through discussion, annotated sketches, diagrams, prototypes, pattern pieces and, where appropriate, computer-aided design. During the making phase, pupils select and use a wide range of tools, materials, components and ingredients with accuracy and control. This includes construction techniques, joining and finishing methods, and key food preparation skills. They learn to think carefully about the functional and aesthetic qualities of materials, and in cooking, consider nutrition, taste and food origins.

Evaluation is integral to each unit. Pupils analyse existing products and evaluate their own work against design criteria, responding to feedback to improve their outcomes. Children also learn about key inventors, engineers and technological developments, helping them understand how design shapes everyday life.

Technical knowledge is developed progressively. Pupils learn how to reinforce structures, how mechanical and electrical systems work, and how computing can be used to program, monitor and control products. In food and nutrition units, they explore how ingredients change through different cooking methods.

Skills and knowledge are mapped out to ensure clear progression. DT is taught in focused blocks so pupils can immerse themselves fully in each stage of the design process. Each new unit begins with retrieval of prior knowledge, helping children make links and secure learning in long-term memory.

Throughout all units, teachers use progressively challenging questioning. This begins with recall, moves to applying knowledge in new contexts and then promotes deeper analytical thinking. Questions encourage pupils to reflect on their own design choices and justify improvements to their work.

This structured, reflective and practical approach ensures that pupils across our children develop into confident, capable and thoughtful designers and makers.

Impact

Through high-quality teaching and a clear progression of knowledge and skills, children become increasingly confident as designers and makers. They develop resilience and curiosity, recognising that design is an iterative process that involves trial, improvement, and perseverance. Pupils understand how products are created and refined, and they gain the technical competence needed for future learning in design, engineering, and technology. Most importantly, they learn that their ideas can make a positive contribution to the world around them.

The impact of our DT curriculum is seen in pupils who:
- Demonstrate confidence when exploring and experimenting with ideas
- Show resilience and perseverance when refining and improving their work
- Ask questions about how things work and why products are designed in certain ways
- Apply technical knowledge with increasing accuracy and independence
- Recognise themselves as capable problem-solvers and creative thinkers

SMSC and British Values in Our DT Curriculum

Spiritual Development Through DT

At Upper Wharfedale Primary Federation, we aim to provide opportunities for pupils to explore imagination, inspiration, intuition, and insight through creativity and thoughtful risk-taking when designing, evaluating, and making a range of products. We encourage deep thinking and problem-solving by enabling pupils to question the needs and wants of different users. Our approach fosters awe, wonder, and curiosity about both the natural world and human design. Pupils are supported to think creatively and express their ideas as they reflect on 'why?', 'how?', and 'where?', developing both understanding and innovation in their learning.

Moral Development Through DT

At Upper Wharfedale Primary Federation, we encourage pupils to value the environment and its natural resources, considering the impact of everyday products. We aim to develop responsible consumers who make thoughtful choices and are aware of the ethical and moral dilemmas that can arise from technological advances. Through this, pupils learn to make decisions that reflect care, responsibility, and integrity.

Social Development Through DT

At Upper Wharfedale Primary Federation, we aim to promote creative thinking and provide opportunities for pupils to express their ideas in a variety of ways. We encourage teamwork, cooperation, and constructive feedback, helping pupils to listen openly, appreciate the strengths of others, and value different perspectives. Pupils are supported to share resources, work collaboratively, and embrace equality, ensuring that everyone has the opportunity to contribute and succeed.

Cultural Development Through DT

At Upper Wharfedale Primary Federation, we encourage pupils to reflect on innovative products and inventions while exploring the diversity of materials and techniques in Design and Technology. Pupils learn how technology can enhance quality of life and investigate contributions from different cultures, appreciating the global influence and creativity behind various products and innovations.

British Values

In DT, we promote a positive and inclusive learning environment where children understand and follow classroom rules, ensuring safety and respect while using equipment and materials. They are encouraged to express their individuality and creativity, make choices in their projects, and work collaboratively, considering the views and values of others. Through discussions, votes, and shared decision-making, children learn democracy, respect, and tolerance. We celebrate different opinions, faiths, and cultures, exploring beauty and individuality through designs, products, and creative activities linked to festivals and traditions.

Design Technology beyond the Curriculum

At Upper Wharfedale Primary Federation, we believe that creativity in Design & Technology extends far beyond the classroom. Our pupils regularly bring their skills of designing, creating, and making into Forest School sessions, applying practical problem-solving in real-world contexts. Through enterprise-focused projects, they collaborate, innovate, and develop products that link their DT learning with personal, social, and community experiences. Pupils are encouraged to share and discuss their creations, both at school and from home, fostering a culture where creativity, initiative, and design thinking are valued in all aspects of life. Enrichment activities and cross-curricular projects, including exploration of global inventions and cultural design practices, broaden their understanding and appreciation of diverse approaches to design. These experiences help pupils develop as confident, innovative, and socially aware young designers.

Skills Progression

At Upper Wharfedale Primary Federation, we are committed to ensuring that pupils build on previously taught skills in a structured and meaningful way. Our Design & Technology curriculum is carefully planned to support progression in key areas such as designing, making, evaluating, and using a range of materials and tools. Due to our mixed-age planning, teachers adapt lessons to revisit and reinforce prior learning while introducing new skills that challenge and inspire all learners. This approach allows children to consolidate their understanding, develop creativity, and make consistent progress regardless of their year group. Our flexible planning ensures that every child experiences a rich and coherent DT curriculum that supports both personal growth and technical development.

Design Key learning objectives	By the end of EYFS	By the end of Year 2	By the end of Year 4	By the end of Year 6
Prior knowledge	Use a wider range of vocabulary. Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. Explore different materials freely, to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Enjoy listening to longer stories and can remember much of what happens. Pay attention to more than one thing at a time, which can be difficult. Understand a question or instruction that has two parts. Understand 'why' questions.	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing.	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing.	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing.
Design	Understand how to listen carefully and why listening is important.	They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local	They should work in a range of relevant contexts [for example, the home, school,	They should work in a range of relevant contexts [for example, the home, school,

	Learn new vocabulary Use new vocabulary in different contexts. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills	community, industry and the wider environment]. Children design purposeful, functional, appealing products for themselves and other users based on design criteria. They generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. Children can: a use their knowledge of existing products and their own experience to help generate their ideas; b design products that have a purpose and are aimed at an intended user; c explain how their products will look and work through talking and simple annotated drawings; d design models using simple computing software; **e** plan and test ideas using templates and mock-ups; **f** understand and follow simple design criteria; **g** work in a range of relevant contexts, for example imaginary, story-based, home, school and the wider environment.	leisure, culture, enterprise, industry and the wider environment]. Children 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. They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design. Children can: a identify the design features of their products that will appeal to intended customers; b use their knowledge of a broad range of existing products to help generate their ideas; c design innovative and appealing products that have a clear purpose and are aimed at a specific user; d explain how particular parts of their products work;	leisure, culture, enterprise, industry and the wider environment]. Children 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. They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design. Children can: a use research to inform and develop detailed design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a target market; b use their knowledge of a broad range of existing products to help generate their ideas; c design products that

			e use annotated sketches and cross-sectional drawings to develop and communicate their ideas; f when designing, explore different initial ideas before coming up with a final design; g when planning, start to explain their choice of materials and components including function and aesthetics; h test ideas out through using prototypes; **i** use computer-aided design to develop and communicate their ideas (see note on p. 1); j develop and follow simple design criteria; k work in a broader range of relevant contexts, for example entertainment, the home, school, leisure, food industry and the wider environment.	have a clear purpose and indicate the design features of their products that will appeal to the intended user; d explain how particular parts of their products work; e use annotated sketches, cross-sectional drawings and exploded diagrams (possibly including computer-aided design) to develop and communicate their ideas; f generate a range of design ideas and clearly communicate final designs; g consider the availability and costings of resources when planning out designs; h work in a broad range of relevant contexts, for example conservation, the home, school, leisure, culture, enterprise, industry and the wider environment.
	Choose the right resources to carry out	Through a variety of creative and practical activities, pupils should be taught the	Through a variety of creative and practical activities, pupils	Through a variety of creative and practical

	their own plan. Use one-handed tools and equipment, for example, making snips in paper with scissors. Use a comfortable grip with good control when holding pens and pencils. Show a preference for a dominant hand. Engage in extended conversations about stories, learning new vocabulary Solve real world mathematical problems with numbers up to 5. Compare quantities using language: 'more than', 'fewer than'. Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round' Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different	knowledge, understanding and skills needed to engage in an iterative process of making.	should be taught the knowledge, understanding and skills needed to engage in an iterative process of making.	activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of making.

	properties Join different materials and explore different textures.			
Make	Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons. Select, rotate and manipulate shapes to develop spatial reasoning skills Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. Continue, copy and create repeating patterns. Compare length, weight and capacity.	Children select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. They select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. Children can: Planning a with support, follow a simple plan or recipe; b begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, juicer; c select from a range of materials, textiles and components according to their characteristics; Practical skills and techniques d learn to use hand tools and kitchen equipment safely and appropriately and learn to follow hygiene procedures; e use a range of materials and components, including textiles and food ingredients; f with help, measure and mark out; g cut, shape and score materials with some accuracy; h assemble, join and combine materials, components or ingredients; i demonstrate how to cut, shape and join	Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] accurately. They 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. Children can: Plan a with growing confidence, carefully select from a range of tools and equipment, explaining their choices; b select from a range of materials and components according to their functional properties and aesthetic qualities; c place the main stages of making in a systematic order; Practical skills and	Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. They 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. Children can: Planning a independently plan by suggesting what to do next; b with growing confidence, select from a wide range of tools and equipment, explaining their choices; c select from a range of materials and components according to their functional properties and aesthetic qualities;

		fabric to make a simple product; j manipulate fabrics in simple ways to create the desired effect; k use a basic running stich; l cut, peel and grate ingredients, including measuring and weighing ingredients using measuring cups; m begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations.	techniques d learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures; e use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components; f with growing independence, measure and mark out to the nearest cm and millimetre; g cut, shape and score materials with some degree of accuracy; h assemble, join and combine material and components with some degree of accuracy; i demonstrate how to measure, cut, shape and join fabric with some accuracy to make a simple product; j join textiles with an appropriate sewing technique; k begin to select and use different and	d create step-by-step plans as a guide to making; Practical skills and techniques e learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures; f independently take exact measurements and mark out, to within 1 millimetre; g use a full range of materials and components, including construction materials and kits, textiles, and mechanical components; h cut a range of materials with precision and accuracy; i shape and score materials with precision and accuracy; j assemble, join and combine materials and components with accuracy; k demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join

			appropriate finishing techniques to improve the appearance of a product such as hemming, tie-dye, fabric paints and digital graphics.	fabric with precision to make a more complex product; l join textiles using a greater variety of stitches, such as backstitch, whip stitch, blanket stitch; m refine the finish using techniques to improve the appearance of their product, such as sanding or a more precise scissor cut after roughly cutting out a shape.
		Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.
Evaluate	Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them.	Children explore and evaluate a range of existing products. They evaluate their ideas and products against design criteria. Children can: a explore and evaluate existing products mainly through discussions, comparisons and simple written evaluations; b explain positives and things to improve for existing products; c explore what materials products are made from;	. Children investigate and analyse a range of existing products. They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They understand how key events and individuals in	Children investigate and analyse a range of existing products. They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They understand how key events and individuals in design and technology have

		d talk about their design ideas and what they are making; e as they work, start to identify strengths and possible changes they might make to refine their existing design; f evaluate their products and ideas against their simple design criteria; g start to understand that the iterative process sometimes involves repeating different stages of the process.	design and technology have helped shape the world. Children can: a explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose; b explore what materials/ingredients products are made from and suggest reasons for this; c consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product; d evaluate their product against their original design criteria; e evaluate the key events, including technological developments, and designs of individuals in design and technology that have helped shape the world.	helped shape the world. Children can: a complete detailed competitor analysis of other products on the market; b critically evaluate the quality of design, manufacture and fitness for purpose of products as they design and make; c evaluate their ideas and products against the original design criteria, making changes as needed.
		Children build structures, exploring how they can be made stronger, stiffer and more stable.	Children apply their understanding of how to strengthen, stiffen and	Children apply their understanding of how to strengthen, stiffen and

			reinforce more complex structures.	reinforce more complex structures.
Technical Knowledge	Join different materials and explore different textures. Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.	They explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. Children can: a build simple structures, exploring how they can be made stronger, stiffer and more stable; b talk about and start to understand the simple working characteristics of materials and components; c explore and create products using mechanisms, such as levers, sliders and wheels.	They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. They understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. They apply their understanding of computing to program, monitor and control their products. Children can: a understand that materials have both functional properties and aesthetic qualities; b apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; c understand and demonstrate how mechanical and electrical systems have an input and output	They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. They understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. They apply their understanding of computing to program, monitor and control their products. Children can: a apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; b understand and demonstrate that mechanical and electrical systems have an input, process and output; c explain how mechanical systems,

			process; d make and represent simple electrical circuits, such as a series and parallel, and components to create functional products; e explain how mechanical systems such as levers and linkages create movement; f use mechanical systems in their products.	such as cams, create movement and use mechanical systems in their products; d apply their understanding of computing to program, monitor and control a product.
	Enjoy listening to longer stories and can remember much of what happens. Pay attention to more than one thing at a time, which can be difficult. Use a wider range of vocabulary. Understand a question or instruction that has two parts. Understand 'why' questions. Make healthy choices about food, drink, activity and toothbrushing.	Children use the basic principles of a healthy and varied diet to prepare dishes.	Children understand and apply the principles of a healthy and varied diet.	Children understand and apply the principles of a healthy and varied diet.
Cooking and nutrition	Learn new vocabulary. Understand how to listen carefully	They understand where food comes from. Children can: a explain where in the world different	They prepare and cook a variety of predominantly savoury dishes using a range	They prepare and cook a variety of predominantly savoury dishes using a

	Learn new vocabulary. Ask questions to find out more and to check they understand what has been said to them Select and use activities and resources, with help when needed. Personal hygiene Compare length, weight and capacity. Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.	foods originate from; b understand that all food comes from plants or animals; c understand that food has to be farmed, grown elsewhere (e.g. home) or caught; d name and sort foods into the five groups in the Eatwell Guide; e understand that everyone should eat at least five portions of fruit and vegetables every day and start to explain why; f use what they know about the Eatwell Guide to design and prepare dishes.	of cooking techniques. They understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Children can: a start to know when, where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world; b understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically; c with support, use a heat source to cook ingredients showing awareness of the need to control the temperature of the hob and/or oven; d use a range of techniques such as mashing, whisking, crushing, grating, cutting, kneading and baking; e explain that a healthy diet is made up of a variety and balance of different food and drink,	range of cooking techniques. They understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Children can: a know, explain and give examples of food that is grown (such as pears, wheat and potatoes), reared (such as poultry and cattle) and caught (such as fish) in the UK, Europe and the wider world; b understand about seasonality, how this may affect the food availability and plan recipes according to seasonality; c understand that food is processed into ingredients that can be eaten or used in cooking; d demonstrate how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the

			as represented in the Eatwell Guide and be able to apply these principles when planning and cooking dishes; f understand that to be active and healthy, nutritious food and drink are needed to provide energy for the body; g prepare ingredients using appropriate cooking utensils; h measure and weigh ingredients to the nearest gram and millilitre; i start to independently follow a recipe; j start to understand seasonality.	use of a heat source; e demonstrate how to use a range of cooking techniques, such as griddling, grilling, frying and boiling; f explain that foods contain different substances, such as protein, that are needed for health and be able to apply these principles when planning and preparing dishes; g adapt and refine recipes by adding or substituting one or more ingredients to change the appearance, taste, texture and aroma; h alter methods, cooking times and/or temperatures; **i** measure accurately and calculate ratios of ingredients to scale up or down from a recipe; **j** independently follow a recipe.