Design Technology Curriculum Overview

Intent:

At **St Francis CE Primary School**, our Design Technology curriculum is rooted in our Christian vision that **"Every person matters, every person helps, every person succeeds,"** enabling all children to **live life in all its fullness** (John 10:10).
Our intent is to provide a high-quality, engaging, and purposeful DT curriculum that enables children to **design, make, and evaluate** products and solutions with creativity, skill, and confidence. Units are carefully planned to **support aspects of our wider topic learning**, ensuring that DT is meaningful, connected, and provides opportunities to apply knowledge from other subjects.
Through DT, children develop practical skills using a variety of tools, materials, and techniques, while learning to solve real-world problems. They are encouraged to **think critically, plan carefully, test ideas, and reflect on their outcomes**, fostering independence, resilience, and innovation.
DT at St Francis actively promotes our Christian values:

- **Courage** – taking creative risks and persevering when designing and making
- **Peace** – working safely, patiently, and thoughtfully
- **Thankfulness** – valuing their own work and the contributions of others
- **Trust** – collaborating effectively and following guidance carefully
- **Friendship** – sharing ideas, supporting peers, and working as part of a team
- **Hope** – imagining possibilities, aspiring to create high-quality outcomes, and learning from mistakes

Our intent is that all pupils leave St Francis CE Primary School with the **skills, knowledge, and confidence** to approach DT challenges creatively and practically, understanding the links between DT, other curriculum areas, and the wider world, and ready to continue problem-solving and designing in Key Stage 3 and beyond.

Implementation: Early Years

In the Early Years at **St Francis CE Primary School**, the impact of DT is seen in children who are curious, creative, and confident when exploring materials, tools, and techniques. DT activities are planned to be **practical, purposeful, and linked to topics**, helping children understand how things are made and how they work, while supporting wider learning across the EYFS curriculum.

Children explore, **investigate, and experiment** with materials to build, construct, and make simple products, developing fine motor skills, hand-eye coordination, and problem-solving abilities. They are encouraged to **plan, test, and adapt** their ideas, showing **courage** in trying new approaches and **hope** when refining their creations.

Children also develop social and collaborative skills, demonstrating **friendship** and **trust** as they share tools and ideas, and learning **peace** and patience when completing tasks. Celebrating their achievements fosters **thankfulness** and self-confidence.

By the end of the Early Years, children have developed **foundational DT skills**, an understanding of how to create and improve their work, and the confidence to explore practical problem-solving, laying the groundwork for Key Stage 1 and supporting them to **live life in all its fullness**.

Implementation:

Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1		**Structure and Materials** Design, make and evaluate a toy (link to History and Science)		**Textiles** Design, make and evaluate a weather station using materials (prep for summer 1)		**Structures and Materials** Design, make and evaluate a Castle structure
Year 2		**Cooking and Nutrition** Design, make and evaluate a healthy Christmas-themed wrap		**Structures and Materials** Design, make and evaluate a model house from 16th century London		**Mechanisms** Design, make and evaluate a cart for transporting quarry stones (link to History)
Year 3		**Textiles** Design, make and evaluate a woven friendship bracelet (Mayan weaving) (link to history)	**Cooking and Nutrition** Design, make and evaluate a traditional French dish (link to Geography and MfL)			**Structure and Materials, inc Textiles** Design, make and evaluate a modern-day ship with sails.
Year 4		**Electrical** Design, make and evaluate a light up Christmas decoration (linked to science)		**Mechanisms** Water wheels – design and make an Ancient Design, make and evaluate a Greek water wheel. (Link to science forces Y3 and 5, maths measuring, capacity and science)	**Cooking and Nutrition** Design, make and evaluate a dish using only Fair-Trade ingredients	

Year 5	**Mechanisms** Design, make and evaluate a rocket launcher			**Cooking and Nutrition** Design, make and evaluate a Tudor pottage		**Electrical** Design, Make and Evaluate a motorised vehicle
Year 6	**Textiles** Use cross stitch and applique to design, make and evaluate an Egyptian Usekh (link to History)		**Computing and Programming** Design using CAD 3D modelling software.			**Mechanism** Design and make an automaton using a cam mechanism.

Progression Map

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	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:** use their knowledge of existing products and their own experience to help generate their ideas; design products that have a purpose and are aimed at an intended user; explain how their products will look and work through talking and simple annotated drawings; design models using simple computing software; plan and test ideas using templates and mock-ups; understand and follow simple design criteria; work in a range of relevant contexts, for example imaginary, story-based, home, school 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:** identify the design features of their products that will appeal to intended customers; use their knowledge of a broad range of existing products to help generate their ideas; design innovative and appealing products that have a clear purpose and are aimed at a specific user; explain how particular parts of their products work; use annotated sketches and cross-sectional drawings to develop and communicate their ideas; when designing, explore different initial ideas before coming up with a final design; when planning, start to explain their choice of materials and components including function and aesthetics; test ideas out through using prototypes; use computer-aided design to develop and communicate their ideas develop and follow simple design criteria; work in a broader range of relevant contexts, for example entertainment, the home, school, leisure, food 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:** 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; use their knowledge of a broad range of existing products to help generate their ideas; design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user; explain how particular parts of their products work; use annotated sketches, cross-sectional drawings and exploded diagrams (possibly including computer-aided design) to develop and communicate their ideas; generate a range of design ideas and clearly communicate final designs; consider the availability and costings of resources when planning out designs; work in a broad range of relevant contexts, for example conservation, the home, school, leisure, culture, enterprise, industry and the wider environment.	
	Begin to draw on their own	Start to generate ideas by	With growing confidence,	Start to generate ideas,	Start to generate, develop,	Generate, develop, model and

	experience to help generate ideas and research conducted on criteria. Start to suggest ideas and explain what they are going to do. Begin to understand the development of existing products: explain what they are for, how they work, what materials have been used. Understand how to identify a target group for what they intend to design and make based on a design criteria. Begin to develop their ideas through talk and simple drawings. Communicate with others about how they want to construct their product.	drawing on their own and other people's experiences. Begin to develop their design ideas through discussion, observation, drawing and modelling. Identify a purpose for what they intend to design and make. Understand how to identify a target group for what they intend to design and make based on a design criteria. Develop their ideas through talk and drawings and label parts. Pupils begin to explain why they chose a certain material.	generate ideas for an item considering its purpose and the user. When planning, explain their choice of materials and components including function and aesthetics. Start to order the main stages of making a product. Put together a step by step plan which shows the order and what equipment and tools they need.	considering the purposes for which they are designing. When planning, explain their choice of materials and components including function and aesthetics considering the views of others to improve their work. Confidently make labelled drawings from different views showing specific features. Develop a clear plan on the process and how to use materials, equipment and suggesting alternative methods if the first attempt fails.	model and communicate their ideas through discussion, annotated sketches and diagrams. With growing confidence select appropriate materials, tools and techniques. Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. Draw up a specification for their design-link with Mathematics and Science. Produce a detailed step-by step plan. Suggest some alternative plans and say what the good points and drawbacks are about each. With growing confidence, apply a range of finishing techniques, including those from art and design Explain how their product will appeal to the audience	communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, and pattern. Confidently use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. Use market research to inform plans. Suggest ideas about how their product could be sold and work within a given budget. Confidently draw up a specification for their design-link with Mathematics and Science. Suggest alternative methods of making if the first attempts fail. Plan the order of their work, choosing appropriate materials, Accurately apply a range of finishing techniques, including those from art and design. Identify the strengths and areas for development in their ideas and products.
Make	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:** **<u>Planning</u>** with support, follow a simple plan or recipe; begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, juicer;		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:** **<u>Planning</u>** with growing confidence, carefully select from a range of tools and equipment, explaining their choices; select from a range of materials and components		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:** **<u>Planning</u>** independently plan by suggesting what to do next; with growing confidence, select from a wide range of tools and equipment, explaining their choices;	

	select from a range of materials, textiles and components according to their characteristics; **Practical skills and techniques** learn to use hand tools appropriately and learn to follow safety procedures; use a range of materials and components, including textiles and food ingredients; with help, measure and mark out; cut, shape and score materials with some accuracy; assemble, join and combine materials, components or ingredients; demonstrate how to cut, shape and join fabric to make a simple product; manipulate fabrics in simple ways to create the desired effect; use a basic running stich; cut, peel and grate ingredients, including measuring and weighing ingredients using measuring cups; begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations.		according to their functional properties and aesthetic qualities; place the main stages of making in a systematic order; **Practical skills and techniques** learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures; use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components; with growing independence, measure and mark out to the nearest cm and millimetre; cut, shape and score materials with some degree of accuracy; assemble, join and combine material and components with some degree of accuracy; demonstrate how to measure, cut, shape and join fabric with some accuracy to make a simple product; join textiles with an appropriate sewing technique; begin to select and use different and appropriate finishing techniques to improve the appearance of a product such as hemming, tie-dye, fabric paints and digital graphics.		select from a range of materials and components according to their functional properties and aesthetic qualities; create step-by-step plans as a guide to making; **Practical skills and techniques** learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures; independently take exact measurements and mark out, to within 1 millimetre; use a full range of materials and components, including construction materials and kits, textiles, and mechanical components; cut a range of materials with precision and accuracy; shape and score materials with precision and accuracy; assemble, join and combine materials and components with accuracy; demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabric with precision to make a more complex product; join textiles using a greater variety of stitches, such as backstitch, whip stitch, blanket stitch; refine the finish using techniques to improve the appearance of their product, such as sanding or a more	
	Begin to make their design using appropriate techniques. Begin to build structures, exploring how they can be made stronger, stiffer and more stable. With help, measure, mark out, cut and shape a range of materials. Explore using tools e.g. scissors and a hole punch safely. Begin to assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. Identify and talk about	Begin to select tools and materials; use correct vocabulary to name and describe them. Build structures, exploring how they can be made stronger, stiffer and more stable Measure, mark out, cut and shape a range of materials. Explore using tools e.g. scissors and a hole punch safely. Begin to assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. With help, measure, cut and score with some accuracy. Start to assemble, join and combine materials in order to make a product. Begin to use simple finishing	Select a wider range of tools and techniques for making their product. Explain their choice of tools and equipment in relation to the skills and techniques they will be using. Measure, mark out, cut, score and assemble components with more accuracy. Select the most appropriate too and techniques for the given task. Begin to make choices of materials both for its appearance and qualities. Begin to use some simple stitches to join fabrics.	Select and use a wider range of tools and techniques for making their product safely. Know how to measure, mark out, cut and shape a range of materials, using appropriate tools equipment and techniques. Demonstrate how to measure, tape, pin, cut and join with accuracy. Begin to combine components and materials in different ways. Start to use simple electrical circuits and mechanical systems. Use some finishing techniques to strengthen and improve the	Select appropriate materials, tools and techniques e.g. cutting, shaping, joining and finishing, accurately. 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. Combine components and materials in different ways with accuracy. Know how more complex electrical circuits and components can be used to create functional products. Use a variety of finishing techniques to strengthen and improve the appearance of their product using a range of equipment. Demonstrate	Confidently select appropriate tools, materials, components and techniques and use them with accuracy. Aim to make and to achieve a quality product Demonstrate when to make modifications as they go along. Know how to combine complex electrical circuits and components to create functional products. Make decisions and select the most appropriate mechanical system for a particular purpose. Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment. Demonstrate motivation/perseverance to refine and improve their

	products which use electricity to make them work Begin to use simple finishing techniques to improve the appearance of their product	techniques to improve the appearance of their product. Start to choose and use appropriate finishing techniques based on their own ideas. Join fabric using a running stitch, glue and tape.		appearance of their product using a range of equipment.	motivation/perseverance to refine and improve their products.	products.
Evaluate	Children explore and evaluate a range of existing products. They evaluate their ideas and products against design criteria. **Children can:** explore and evaluate existing products mainly through discussions, comparisons and simple written evaluations; explain positives and things to improve for existing products; explore what materials products are made from; talk about their design ideas and what they are making; as they work, start to identify strengths and possible changes they might make to refine their existing design; evaluate their products and ideas against their simple design criteria; start to understand that the iterative process sometimes involves repeating different stages of the process.		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 helped shape the world. **Children can:** explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose; explore what materials/ingredients products are made from and suggest reasons for this; 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; evaluate their product against their original design criteria; evaluate the key events, including technological developments, and designs of individuals in design and technology that have helped shape the world.		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 helped shape the world. **Children can:** complete detailed competitor analysis of other products on the market; critically evaluate the quality of design, manufacture and fitness for purpose of products as they design and make; evaluate their ideas and products against the original design criteria, making changes as needed.	
	Start to evaluate their product by discussing how well it works in relation to the purpose. When looking at existing products, explain what they like and dislike about the products and why. Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make next time.	Evaluate their work against their design criteria. Look at a range of existing products explain what they like and dislike about products and why. Evaluate their products as they are developed, identifying what went well and possible changes they might make next time.	Start to evaluate their product against their original design criteria. Begin to evaluate familiar products and consider the views of others to improve them. Suggest improvements to their final design.	Evaluate their product throughout the process making some simple changes where necessary. Evaluate their products, thinking of both appearance and function. Evaluate their products carrying out simple tests. Identify improvements to their final design explaining why these would improve the final design.	Start to evaluate a product against the original design specification and by carrying out appropriate tests. Evaluate their work both during and at the end of the assignment and seek evaluation from others. Evaluate appearance and function against original criteria, suggesting improvements and refinements.	Evaluate their work continuously both during and at the end of the assignment and frequently seek evaluation from others. Evaluate their products, identifying strengths and areas for development, and carry out appropriate tests. Record their evaluations using drawings with labels – clearly identifying improvements and refinements.
	Children build structures, exploring how they can be made stronger, stiffer and more stable. They explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. **Children can:** build simple structures, exploring how they can be made		Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures. 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,		Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures. 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	

Technical Knowledge	stronger, stiffer and more stable; talk about and start to understand the simple working characteristics of materials and components; explore and create products using mechanisms, such as levers, sliders and wheels.	buzzers and motors]. They apply their understanding of computing to program, monitor and control their products. **Children can:** understand that materials have both functional properties and aesthetic qualities; apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; understand and demonstrate how mechanical and electrical systems have an input and output process; make and represent simple electrical circuits, such as a series and parallel, and components to create functional products; explain how mechanical systems such as levers and linkages create movement; use mechanical systems in their products.	motors]. They apply their understanding of computing to program, monitor and control their products. **Children can:** apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; understand and demonstrate that mechanical and electrical systems have an input, process and output; explain how mechanical systems, such as cams, create movement and use mechanical systems in their products; apply their understanding of computing to program, monitor and control a product.
Cooking and Nutrition	Children use the basic principles of a healthy and varied diet to prepare dishes. They understand where food comes from. **Children can:** explain where in the world different foods originate from; understand that all food comes from plants or animals; understand that food has to be farmed, grown elsewhere (e.g. home) or caught; name and sort foods into the five groups in the Eatwell Guide; understand that everyone should eat at least five portions of fruit and vegetables every day and start to explain why; use what they know about the Eatwell Guide to design and prepare dishes.	Children understand and apply the principles of a healthy and varied diet. They prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. **Children can:** start to know when, where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world; understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically; with support, use a heat source to cook ingredients showing awareness of the need to control the temperature of the hob and/or oven; use a range of techniques such as mashing, whisking, crushing, grating, cutting, kneading and baking; explain that a healthy diet is made up of a variety and balance of different food and drink, as represented in the Eatwell Guide and be able to apply these principles when planning and cooking dishes; understand that to be active and healthy, nutritious food and drink are needed to provide energy for the body;	Children understand and apply the principles of a healthy and varied diet. They prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. **Children can:** 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; understand about seasonality, how this may affect the food availability and plan recipes according to seasonality; understand that food is processed into ingredients that can be eaten or used in cooking; demonstrate how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source; demonstrate how to use a range of cooking techniques, such as griddling, grilling, frying and boiling; 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;

			prepare ingredients using appropriate cooking utensils; measure and weigh ingredients to the nearest gram and millilitre; start to independently follow a recipe; start to understand seasonality.		adapt and refine recipes by adding or substituting one or more ingredients to change the appearance, taste, texture and aroma; alter methods, cooking times and/or temperatures; measure accurately and calculate ratios of ingredients to scale up or down from a recipe; independently follow a recipe.	
		Understand that all food comes from plants or animals. Develop understanding of where different foods come from and also food from native to different countries. Understand how to name and sort foods into the five groups in Recognise the need for a variety of food in a diet. Demonstrate how to prepare simple dishes safely and hygienically, without using a heat source. Demonstrate how to use techniques such as cutting, peeling and grating Measure and weigh food items using non-standard measures (e.g. spoons and cups).	Start to know that food is grown, reared and caught in the UK, Europe and the wider world. Know that a healthy diet is made up from a variety and balance of different food and drink. Begin to know that to be active and healthy, food and drink are needed to provide energy. Understand how to prepare and cook a variety of dishes including having experience of using a heat source. Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	Know that food is grown, reared and caught in the UK, Europe and the wider world. Understand why a healthy diet is important. Know that to be active and healthy, food and drink are needed to provide energy. Understand how to prepare and cook a variety of predominantly savoury dishes including having experience of using a heat source. Understand what to do to be safe and hygienic. Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Measure and weigh ingredients accurately.	Explain how ingredients are grown, reared and caught. Understand that seasons may affect the food available. Know different food and drink contain different substances that are needed for health. Plan a healthy and affordable diet. Explain how food is processed into ingredients that can be eaten or used in cooking. Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including the use of a heat source. Confidently use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Use appropriate tools and equipment, weighing and measuring with scales.	

Impact:

At **St Francis CE Primary School**, the impact of our DT curriculum is seen in confident, creative, and resourceful pupils who can **design, make, and evaluate** products effectively. Through carefully planned units that link to wider topic learning, children apply their DT skills in meaningful, purposeful contexts, making connections with other subjects and the real world.

Pupils develop practical skills using a variety of tools, materials, and techniques, and can **plan, test, refine, and reflect** on their outcomes. They demonstrate **creativity, problem-solving, and resilience**, approaching tasks thoughtfully and confidently. Children are able to articulate their design ideas, explain their decision-making, and evaluate the effectiveness of their products.

Our Christian values are evident in pupils' approach to DT:

- **Courage** – experimenting with new ideas and techniques
- **Peace** – working safely and patiently, considering care and precision
- **Thankfulness** – valuing their own creations and respecting the contributions of others
- **Trust** – collaborating effectively and following instructions responsibly
- **Friendship** – supporting peers, sharing ideas, and learning together
- **Hope** – striving for high-quality outcomes, learning from mistakes, and aspiring to improve

By the time pupils leave St Francis CE Primary School, they have developed the **skills, knowledge, and confidence** to approach DT challenges creatively and independently, understanding the purpose and impact of design in everyday life and the wider world, and are prepared to continue problem-solving and designing in secondary school, fully able to **live life in all its fullness**.