St. Paul's Dorking
Church of England (Aided) Primary School

DT Overview

Intent

DT is important at St. Paul's. We will articulate our school values of compassion, hope, trust and wisdom through **inspiring** pupils' **curiosity t**o know more about how things are made, **problem solving** and **working collaboratively**. Making sure staff are confident in teaching DT due to training and support. Children are confident in their learning due to a progression of skills followed throughout the school.

We believe high quality teaching in DT should provide children with a **real-life** context for learning. **Inspiring** children through creating opportunities for them in the wider world. Through the DT curriculum, children should be inspired by engineers, designers, chefs and architects to enable them to create a range of structures, mechanisms, textiles, electrical systems and food products with a **real-life purpose.**

Through the study of DT Pupils learn how to **take risks, becoming resourceful, innovative** and **capable** 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. DT makes an essential contribution to the **creativity, culture** and **well-being** of the nation.

Implementation

All teaching of DT should follow the **design, make** and **evaluate** cycle. Each stage will focus on technical knowledge. The design process should be rooted in **real life, relevant** contexts to **give meaning** to learning. While making, children will be **given choice** and a range of tools to choose freely from. To evaluate, children will be able to **evaluate** their own products against a design criteria. Each of these steps will be rooted in technical knowledge and vocabulary, cyclically developing over time.

Impact

In DT children are encouraged to have a go, to enjoy, and **build their confidence** as they learn new skills, through exploring different projects. Teachers engage the children and **foster a love of understanding** how things work, designing and making through **questioning and investigating**. Photographs and class displays demonstrate how much they have learnt by working collaboratively, sharing and adapting ideas around effective design, past and present. They **study and appraise the work of others** in a considered way, feel **proud of their achievements** and can **speak confidently** about their learning. As designers they will develop skills and attributes they can use beyond school and into adulthood. They **will be inspired** by learning about real life designers and be able to understand, and be excited by, Design and technology in the world around them.

Children show our school values when exploring DT projects, they show **perseverance** and **resilience** as they are encouraged to review and modify their ideas as they work individually or in a group, in response to their own or peer assessment and feedback from their teacher. Pupil voice is used to judge the impact during monitoring of the subject. Assessment of children's learning in Design Technology is an ongoing monitoring of children's understanding, knowledge and skills by the class teacher, throughout lessons. This assessment is then used to inform differentiation, support and challenge.

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Curriculum Overview

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	**Workshop** Build containers using different materials for a range of purposes: Investigating, evaluating, designing and making. Gift boxes POAP – Hinges and catches		**Textiles** Understanding where textiles come from. Join and decorate textiles using glue,needle and thread. POAP –3 Bears picnic blanket		**Food** Name a variety of foods Understand the need to eat a variety of foods Plan and Prepare fruit salad with the children POAP –Fantastic fruits	
Birth to five PD EAD	**Physical development** **Moving and handling** **Range 6** • Uses simple tools to effect changes to materials • Handles tools, objects, construction and malleable materials safely and with increasing control and intention • Shows a preference for a dominant hand **Expressive arts and design** **Creating with materials** **Range 6** • Uses their increasing knowledge and understanding of tools and materials to explore their interests and enquiries and develop their thinking • Develops their own ideas through experimentation with diverse materials, e.g. light, projected image, loose parts, watercolours, powder paint, to express and communicate their discoveries and understanding.		**Physical development** **Moving and handling** Statutory ELG: Fine Motor Skills Children at the expected level of development will: - Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases; - Use a range of small tools, including scissors, paint brushes and cutlery; - Begin to show accuracy and care when drawing. **Expressive arts and design** **Creating with materials** Statutory 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; - Make use of props and materials when role playing characters in narratives and stories.		**Physical development** **Health and self-care** **Range 6** • Eats a healthy range of foodstuffs and understands need for variety in food • Describes a range of different food textures and tastes when cooking and notices changes when they are combined or exposed to hot and cold temperatures • Shows some understanding that good practices with regard to exercise, eating, drinking water, sleeping and hygiene can contribute to good health Statutory ELG: Managing Self Children at the expected level of development will: - Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.	

Continuous provision	Throughout the year children have access to many different types of construction and are encouraged to make models and then talk about them and display them. Children also have access to a variety of modelling resources such as boxes, plastic bottles etc and different resources by which to make and attach the different resources together for modelling. Modelling and construction are encouraged indoors and outdoors.		
Year 1	**Workshop** Build structures, exploring how they can be made stronger, stiffer and more stables. Plan and develop ideas through drawing and talking. Antarctica topic (tent) POAP – freestanding structures	**Workshop** **Mechanisms** Explore and use sliders and levers. Understand that different mechanisms produce different types of movement. Know and use technical vocabulary relevant to the project. Make a book for reception/Traditional Tales topic POAP Sliders and Levers	**Food** Select from and use a range of tools and equipment and use a range of tools and equipment to perform tasks. (eg. Spoon, knife, peeler etc.) Begin to discuss where different foods come from. Healthy eating/Salad sandwich/Dragon topic POAP – Preparing fruit and veg
Developing, planning and communicating ideas	Begin to draw on their own experience to help generate ideas and research conducted on criteria. Begin to understand the development of existing products: What they are for, how they work, materials used. Start to suggest ideas and explain what they are going to do. 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 drawings. Make templates and mock ups of their ideas in card and paper or using ICT.		
Working with tools, equipment, materials and components to make quality products	Begin to make their design using appropriate techniques. Begin to build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. With help measure, mark out, cut and shape a range of materials. Begin to assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. Begin to use simple finishing techniques to improve the appearance of their product.		
Evaluating processes and products	Start to evaluate their product by discussing how well it works in relation to the purpose (design criteria). When looking at existing products explain what they like and dislike about products and why. Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make.		
Food and Nutrition	Begin to understand that all food comes from plants or animals. Explore the understanding that food has to be farmed, grown elsewhere (e.g. home) or caught. Start to understand how to name and sort foods into the five groups in 'The Eat well plate' Begin to understand that everyone should eat at least five portions of fruit and vegetables every day. Know how to prepare simple dishes safely and hygienically, without using a heat source. Know how to use techniques such as cutting, peeling and grating.		

Year 2	**Food** Use the basic principles of a healthy and varied diet to prepare dishes Measure and weigh using electronic scales Understand where food comes from POAP – Preparing fruit and veg	**Textiles** Design, plan and create a product based on a given criteria. Plan and develop ideas through drawing, talking, templates and mock-ups. Join textiles using running stitch. POAP – Templates and joining	**Workshop** Explore and use mechanisms [levers, sliders, wheels and axles] in their products. POAP – wheels and axles
Developing, planning and communicating ideas	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. Make templates and mock ups of their ideas in card and paper or using ICT.		
Working with tools, equipment, materials and components to make quality products	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. With help measure, cut and score with some accuracy. Learn to use hand tools safely and appropriately. Start to assemble, join and combine materials in order to make a product. Demonstrate how to cut, shape and join fabric to make a simple product. Use basic sewing techniques. Start to choose and use appropriate based on own ideas. finishing techniques		
Evaluating processes and products	Evaluate their work against their design criteria. Look at a range of existing products explain what they like and dislike about products and why. Start to evaluate their products as they are developed, identifying strengths and possible changes they might make. With confidence talk about their ideas, saying what they like and dislike about them.		
Food and Nutrition	Understand that all food comes from plants or animals. Know that food has to be farmed, grown elsewhere (e.g. home) or caught. Understand how to name and sort foods into the five groups in 'The Eat well plate' Know that everyone should eat at least five portions of fruit and vegetables every day. 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.		
Year3	**Textiles** Join textiles with appropriate stitching. Select the most appropriate techniques to decorate textiles. POAP - Aprons	**Workshop** Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately Plan and develop ideas through discussion and annotated sketches POAP – Levers and linkages	**Food** Prepare and cook a variety of predominantly savoury dishes using equipment safely Understand the principles of a healthy diet. Prepare ingredients hygienically using appropriate utensils for a Stir fry POAP – Dips and dippers
Developing, planning and communicating ideas	With growing confidence generate ideas for an item, considering its purpose and the user/s. Start to order the main stages of making a product. Identify a purpose and establish criteria for a successful product. Understand how well products have been designed, made, what materials have been used and the construction technique. Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. Start to understand whether products can be recycled or reused. Know to make drawings with labels when designing. When planning explain their choice of materials and components including function and aesthetics.		
Working with tools, equipment, materials and components to make quality products	Select a wider range of tools and techniques for making their product i.e. construction materials and kits, textiles, food ingredients, mechanical components and electrical components. Explain their choice of tools and equipment in relation to the skills and techniques they will be using. Start to understand that mechanical and electrical systems have an input, process and output. Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement. Know how simple electrical circuits and components can be used to create functional products. Measure, mark out, cut, score and assemble components with more accuracy. Start to work safely and accurately with a range of simple tools. Start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work. Start to measure, tape or pin, cut and join fabric with some accuracy.		
Evaluating processes and products	Start to evaluate their product against original design criteria e.g. how well it meets its intended purpose Begin to disassemble and evaluate familiar products and consider the views of others to improve them. Evaluate the key designs of individuals in design and technology has helped shape the world.		
Food and Nutrition	Start to know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Understand how to prepare and cook a variety of predominantly savoury		

	dishes safely and hygienically including, where appropriate, the use of a heat source. Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Start to understand that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate' Begin to know that to be active and healthy, food and drink are needed to provide energy for the body.		
Year 4	**Workshop** Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] Plan and develop ideas through discussion, annotated sketches and exploded diagrams Making a torch POAP – Simple circuits and switches	**Food** Prepare and cook a variety of predominantly savoury dishes following a recipe Measure ingredients to the nearest gram accurately Understand and apply the principles of a healthy diet. POAP – Healthy and varied diet	**Textiles** Understand the need for a seam allowance Join textiles with appropriate stitching. Select the most appropriate techniques to decorate textiles for aesthetic needs. POAP – 2D shapes to 3D product
Developing, planning and communicating ideas	Start to generate ideas, considering the purposes for which they are designing- link with Mathematics and Science. Confidently make labelled drawings from different views showing specific features. Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail. Identify the strengths and areas for development in their ideas and products. When planning consider the views of others, including intended users, to improve their work. Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground -breaking products. When planning explain their choice of materials and components according to function and aesthetic.		
Working with tools, equipment, materials and components to make quality products	Select 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. Start to join and combine materials and components accurately in temporary and permanent ways. Know how mechanical systems such as cams or pulleys or gears create movement. Understand how more complex electrical circuits and components can be used to create functional products. Continue to learn how to program a computer to monitor changes in the environment and control their products. Understand how to reinforce and strengthen a 3D framework. Know how to sew using a range of different stitches, to weave and knit. Demonstrate how to measure, tape or pin, cut and join fabric with some accuracy. Begin to use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.		

Evaluating processes and products	Evaluate their products carrying out appropriate tests. Start to evaluate their work both during and at the end of the assignment. Be able to disassemble and evaluate familiar products and consider the views of others to improve them. Evaluate the key designs of individuals in design and technology has helped shape the world.		
Food and Nutrition	Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate' Know that to be active and healthy, food and drink are needed to provide energy for the body		
Year 5	**Workshop** Apply their understanding of how to strengthen, stiffen and reinforce more complex structures Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] Plan and develop ideas through discussion, annotated sketches, exploded diagrams and pattern types. POAP – Frame Structures Anglo Saxon Village	**Textiles** Create objects (such as a cushion) that employ a seam allowance. Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). POAP – Combining different fabric shapes	**Food** Prepare and cook and refine recipes for a variety of predominantly savoury dishes using a range of cooking techniques following a given recipe Understand and apply the principles of a healthy and varied diet. Understand the importance of correct storage and handling of ingredients (using knowledge of microorganisms). POAP – Celebrating culture and seasonality Ancient Greece
Developing, planning and communicating ideas	Start to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces. Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. With growing confidence apply a range of finishing techniques, including those from art and design. Draw up a specification for their design- link with Mathematics and Science. Use results of investigations, information sources, including ICT when developing design ideas. 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.		
Working with tools,	Select appropriate materials, tools and techniques e.g. cutting, shaping, joining and finishing, accurately.		

equipment, materials and components to make quality products	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. Understand how mechanical systems such as cams or pulleys or gears create movement. Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. Understand that mechanical and electrical systems have an input, process and output. Begin to measure and mark out more accurately. Demonstrate how to use skills in using different tools and equipment safely and accurately with growing confidence cut and join with accuracy to ensure a good-quality finish to the product. Weigh and measure accurately (time, dry ingredients, liquids). Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.		
Evaluating processes and products	Start to evaluate a product against the original design specification and by carrying out tests. Evaluate their work both during and at the end of the assignment. Begin to evaluate it personally and seek evaluation from others. Evaluate the key designs of individuals in design and technology has helped shape the world		
Food and Nutrition	Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Begin to understand that seasons may affect the food available. Understand 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, where appropriate, the use of a heat source. Start to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Begin to understand that different food and drink contain different substances – nutrients, water and fibre – that are needed for health.		
Year 6	**Textiles** Join textiles with a combination of stitching techniques (eg. back stitch, cross stitch and running stitch, attaching a button) Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion). POAP – Using computer aided design in textiles Computing-CAD	**Food** Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques as independently as possible Understand and apply the principles of a healthy and varied diet. Describe what to do to be hygienic and safe. Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. POAP – Celebrating culture and seasonality HINDUISM – CREATING CULTURAL FOOD	**Workshop** Apply their understanding of computing to program, monitor and control their products. Understand how key events and individuals in design and technology have helped shape the world Plan and develop ideas through discussion, annotated sketches, exploded diagrams, pattern types and computer aided design. POAP – Electrical Systems – Monitoring and Control and More complex switches and circuits (SCIENCE – ELECTRICITY and COMPUTING - CRUMBLE)

Developing, planning and communicating ideas	Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces. Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. Accurately apply a range of finishing techniques, including those from art and design. Draw up a specification for their design- link with Mathematics and Science. Plan the order of their work, choosing appropriate materials, tools and techniques Suggest alternative methods of making if the first attempts fail. Identify the strengths and areas for development in their ideas and products. Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.		
Working with tools, equipment, materials and components to make quality products	Confidently select appropriate tools, materials, components and techniques and use them. Use tools safely and accurately. Assemble components to make working models. Aim to make and to achieve a quality product. With confidence pin, sew and stitch materials together to create a product. Demonstrate when make modifications as they go along. Construct products using permanent joining techniques. Understand how mechanical systems such as cams or pulleys or gears create movement. Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. Know how to reinforce and strengthen a 3D framework. Understand that mechanical and electrical systems have an input, process and output. Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.		
Evaluating processes and products	Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. Evaluate their work both during and at the end of the assignment. Record their evaluations using drawings with labels. Evaluate against their original criteria and suggest ways that their product could be improved. Evaluate the key designs of individuals in design and technology has helped shape the world		
Food and Nutrition	Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Understand that seasons may affect the food available. Understand 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, where appropriate, the use of a heat source. Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Know different food and drink contain different substances – nutrients, water and fibre – that are needed for health.		

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