



St Anne's Design and Technology

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SUBJECT LEADERS

Intent

At St Anne's we intend to build a Design Technology curriculum which is inspiring, rigorous, and practical. We want our children to use creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values.

We intend for all children to acquire appropriate subject knowledge, skills and understanding as set out in the National Curriculum.

It is our aim to create strong cross curricular links with other subjects, such as Mathematics, Science, Computing, and Art. We want Design and Technology to prepare our children, to give them the opportunities, responsibilities, and experiences they need to be successful in later life.

What do we need to experience? Why?	
When a child leaves our school they will...	I am a St Anne's designer because...
Be a confident person Be an independent thinker and self-starter Empathise with others Have an inquisitive mind Take risks with their learning Bounce back and move forward when faced with a challenge Be proactive and innovative Have a sense of belonging	• I use my creativity and imagination to design and create products • I can draw on my knowledge and skills to make products for specific audiences and purposes • I am resourceful, innovative and enterprising • I can critique, evaluate and test my own and others' ideas/products • I have the knowledge and expertise to participate in an increasingly technological world
Substantive Concepts	Disciplinary Concepts
Cooking and Nutrition Children need to know where food comes from, what a balanced diet looks like, as well as following recipes. They need to have preparation and cooking skills whilst also following kitchen hygiene and safety. Structures Our children need to have knowledge of materials and their functional and aesthetic properties, as well as their strength and stability. They will have knowledge of how to stiffen and reinforce structures. Textiles With textiles, children need to know how to fasten, sew and use decorative and functional fabric techniques such as cross stitch, blanket stitch and appliqué. Mechanisms and Mechanical Systems Children will learn how to mimic natural movements using mechanisms such as cams, followers, levers and sliders. Electrical Systems Children will create various electrical products through their knowledge of operational series circuits, circuit components, circuit diagrams and symbols.	• Researching products • Experimenting with different materials • Developing techniques • Creating for a purpose • Designing • Critiquing, analysing and evaluating

St Anne's Design and Technology Subject Overview

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	- Developing techniques - Creating for a purpose - Designing - Critiquing, analysing and evaluating	- Developing techniques - Creating for a purpose - Designing - Critiquing, analysing and evaluating	- Developing techniques - Creating for a purpose - Designing - Critiquing, analysing and evaluating	- Developing techniques - Creating for a purpose - Designing - Critiquing, analysing and evaluating	- Developing techniques - Creating for a purpose - Designing - Critiquing, analysing and evaluating	- Developing techniques - Creating for a purpose - Designing - Critiquing, analysing and evaluating	- Developing techniques - Creating for a purpose - Designing - Critiquing, analysing and evaluating
Substantive Concepts	- Textiles - Cooking and Nutrition, Structures	- Cooking and Nutrition - Textiles - Mechanisms - Structures	- Cooking and Nutrition - Textiles - Mechanisms - Structures	- Cooking and Nutrition - Textiles - Mechanical - Systems - Structures	- Cooking and Nutrition, Textiles, Mechanical - Systems - Structures	- Cooking and Nutrition, Textiles, Mechanical - Systems - Structures	- Cooking and Nutrition, Textiles, Mechanical - Systems - Structures, Electrical Systems
St Anne's Design and Technology Journey (Progression in Knowledge and Skills) Substantive							
Cooking and Nutrition	Substantive Knowledge - I know that fruit is a type of food that comes from plants. - I know that foods can look, smell, feel and taste different. - I know that fruit is healthy and good for our bodies. - I know basic hygiene rules such as washing hands before cooking. Skill Statements - Explore foods using senses (taste, smell, touch, sight). - Describe simple textures (e.g. soft, crunchy, juicy).	Substantive Knowledge - I know that different foods need different tools to prepare them. - I know basic safety rules when using kitchen tools. - I know that ingredients can be measured using spoons. - I know that hygiene (clean hands, surfaces) is important in cooking. Skill Statements	Substantive Knowledge - I know that the claw grip helps keep fingers safe while cutting. - I know that different foods have different textures (soft/hard). - I know the importance of working cleanly and independently. - I know that foods can be combined to make simple dishes. Skill Statements - Use the claw grip to cut soft foods safely. - Prepare simple dishes independently (e.g. fruit salad, sandwiches).	Substantive Knowledge - I know the main food groups (fruit, vegetables, protein, dairy, carbohydrates). - I know that a balanced diet includes a variety of foods. - I know different cutting techniques (claw and bridge) for safety. - I know that grating changes the texture of food. Skill Statements	Substantive Knowledge - I know that recipes come from different cultures around the world. - I know that recipes can be adapted (ingredients, flavours, methods). - I know that different foods require different cutting techniques. - I understand flavour combinations (e.g. sweet, savoury, spicy).	Substantive Knowledge - I know that accurate measurement affects the outcome of recipes. - I know how to use scales to measure ingredients precisely. - I know that consistency in cutting helps food cook evenly. - I understand how preparation impacts presentation and quality.	Substantive Knowledge - I know that a balanced meal includes a range of food groups. - I know different cooking methods (baking, frying, boiling, grilling). - I know how to design a menu for a specific purpose or audience. - I understand seasonality and nutritional considerations. Skill Statements - Design a balanced

	- Communicate likes and dislikes about foods. - Help prepare fruit (e.g. peeling, tearing, simple cutting with support).	- Use simple tools safely (e.g. butter knife, spoon). - Measure ingredients using spoons (teaspoon/tablespoon). - Follow simple instructions to prepare food. - Demonstrate basic hygiene with reminders.	- Demonstrate hygiene routines independently. - Select appropriate tools for simple tasks.	- Use bridge and claw grips appropriately. - Grate foods safely and effectively. - Prepare a dish that includes foods from different groups. - Begin to explain healthy eating choices.	Skill Statements - Follow a recipe accurately. - Adapt a recipe (e.g. ingredient substitution). - Select appropriate cutting techniques for different ingredients. - Work safely and independently in a kitchen environment.	Skill Statements - Use weighing scales accurately (grams/kilograms). - Cut ingredients evenly and consistently. - Prepare more complex dishes following a sequence of steps. - Evaluate the quality of a final product.	celebration meal. - Select appropriate cooking methods for each dish. - Combine multiple preparation and cooking techniques. - Evaluate dishes based on nutrition, taste and presentation.
Key Vocabulary	Fruit, taste, smell, texture, soft, hard, juicy, sweet, sour, peel, healthy, wash	Measure, spoon, mix, spread, safe, ingredients, hygiene, prepare, tools, kitchen	Claw grip, cut, slice, peel, hygiene, independent, soft, prepare, combine	Bridge grip, grate, food groups, balanced diet, nutrients, healthy, carbohydrates, protein, dairy	Recipe, adapt, culture, cuisine, flavour, savoury, spicy, technique, ingredients	Weigh, scales, grams, precision, consistency, evenly, preparation, quality, evaluate	Menu, celebration, nutrition, balanced meal, method, bake, grill, boil, seasonality, evaluate
Structures	Substantive Knowledge - I know that structures are things that are built. - I know that objects can be stacked or balanced to make structures. - I know that some structures are stronger than others. - I know simple ways to join materials	Substantive Knowledge - I know that structures are designed for a purpose (e.g. bridge, house). - I know that materials can be joined in different ways. - I know that strong joins help structures stay together. - I know that different materials		Substantive Knowledge - I know that triangles are strong shapes used in structures. - I know that supports (e.g. struts) help structures stay stable. - I know that some shapes are stronger than others. - I know that structures must		Substantive Knowledge - I know that structures must be designed to carry loads. - I know that strengthening techniques improve load-bearing capacity. - I know that materials and design affect how much weight a	Substantive Knowledge - I know that structures must be designed with a clear function and user in mind. - I know how structural theory (e.g. triangulation, reinforcement) improves designs. - I know that precision is important for

	(e.g. slotting, sticking). Skill Statements - Stack and balance objects to build simple structures. - Join materials using simple methods (e.g. glue, construction kits). - Explore how to make structures stable. - Talk about what makes a structure strong or weak.	have different properties. Skill Statements - Join materials using different techniques (e.g. glue, tape, folding). - Build a simple structure for a given purpose. - Test and improve the strength of joins. - Select materials based on simple properties.		be stable to hold weight. Skill Statements - Use triangular frameworks to strengthen structures. - Build structures that can support weight. - Identify and use supports (e.g. braces, struts). - Test and evaluate structural strength.		structure can hold. - I understand how forces (push, pull) act on structures. Skill Statements - Design and build structures that support increasing weights. - Apply strengthening techniques (e.g. layering, reinforcing). - Test structures and measure how much weight they can hold. - Modify designs based on testing outcomes.	structural success. - I know how to evaluate structures using criteria (strength, stability, purpose). Skill Statements - Design a structure with a clear purpose and user need. - Build with precision and accuracy. - Apply structural knowledge (triangles, reinforcement, joins). - Evaluate and refine designs against set criteria.
Key Vocabulary	Structure, stack, balance, build, strong, weak, join, connect, stable	Join, fix, attach, purpose, materials, design, strong, weak, structure		Triangle, frame, support, strut, brace, stable, rigid, load, weight		Load, force, reinforce, strengthen, weight, structure, design, test, stability	Precision, function, criteria, evaluate, refine, structure, stability, reinforcement, triangulation



Mechanisms (KS1) Mechanical Systems (KS2)		Substantive Knowledge • I know that mechanisms are parts that help things move. • I know that objects move in different ways (push, pull, slide). • I know that pushing and pulling can change the position of an object. • I know that simple mechanisms are used in everyday objects (e.g. doors, drawers). Skill Statements • Create simple mechanisms that move using push, pull or slide. • Explore movement in products (e.g. sliders in pictures). • Use simple materials to create movement. • Explain how their product moves.	Substantive Knowledge • I know that wheels and axles help objects move more easily. • I know that wheels rotate and are connected by axles. • I know that axles can be fixed or free-moving. • I know that these mechanisms are used in vehicles. Skill Statements • Build a simple wheeled product (e.g. vehicle). • Use wheels and axles effectively. • Identify how rotation creates movement. • Test and improve how smoothly a product moves.	Substantive Knowledge • I know that pulleys and levers transfer force to create movement. • I know that levers can help lift or propel objects. • I know that pulleys change the direction of a force. • I understand that mechanisms can make tasks easier. Skill Statements • Build and use simple pulley systems. • Create lever-based mechanisms (e.g. catapults, moving arms). • Explore how force is transferred. • Test effectiveness and adjust designs.	Substantive Knowledge • I know that a crank converts rotary motion into another type of movement. • I know that combining mechanisms can create more complex movement. • I know that cams and cranks can produce different motions. • I know that mechanisms must be assembled carefully to function correctly. Skill Statements • Create products using cranks (e.g. moving toys). • Combine two or more mechanisms in a design. • Construct mechanisms accurately. • Evaluate how effectively movement is achieved.	Substantive Knowledge • I know that gears transmit and change movement (speed, direction, force). • I know that combining gears with other mechanisms creates complex systems. • I know that gear sizes affect how mechanisms work. • I know that mechanical systems are used in real-world machines. Skill Statements • Design and build systems using gears, cranks and other mechanisms. • Combine multiple mechanisms effectively. • Explain how movement is transferred through a system. • Evaluate and refine mechanical designs.	

Key Vocabulary		Push, pull, slide, move, mechanism, direction, force, motion	Wheel, axle, rotate, turn, vehicle, movement, fixed, free	Pulley, lever, force, transfer, lift, direction, mechanism, propel	Crank, cam, rotate, mechanism, combine, motion, design, construct	Gear, cog, mechanism, system, rotation, direction, speed, force, transfer	
Textiles	Substantive Knowledge - I know that textiles are materials that can be used to make things. - I know that weaving is a way of making materials by crossing strips over and under. - I know that patterns can be created through weaving. - I know that materials can be		Substantive Knowledge - I know that fabric can be joined using stitching. - I know that a running stitch is a simple sewing technique. - I know that textiles can be used to make functional items (e.g. pouches). - I know that tools such as needles must be used safely. Skill Statements		Substantive Knowledge - I know that a seam joins two pieces of fabric together. - I know that back stitch creates a stronger join than running stitch. - I know that different stitches have different purposes. - I know that neatness and accuracy		Substantive Knowledge - I know that textile products are designed for a user and purpose. - I know how to select appropriate materials and techniques for a product. - I know how structure and stitching affect durability and function.

Key Vocabulary	flexible and shaped.		- Thread a needle and tie a knot (with support if needed). - Use a running stitch to join two pieces of fabric. - Cut and shape fabric appropriately. - Begin to evaluate their finished textile product.		improve product quality.		I know how to evaluate a product against design criteria.
	Skill Statements - Weave using paper strips over and under. - Create simple patterns through weaving. - Handle materials safely and carefully. - Talk about colours and textures in their work.				Skill Statements - Sew a seam using back stitch. - Use stitches to create strong and durable joins. - Measure, cut and prepare fabric accurately. - Evaluate the strength and appearance of their product.		Skill Statements - Design a textile product for a specific user and purpose. - Select and use appropriate stitches and techniques independently. - Combine multiple skills (cutting, joining, decorating). - Evaluate and refine products based on function and quality.
	Weave, over, under, pattern, material, strip, texture, flexible		Fabric, thread, needle, stitch, running stitch, join, knot, sew		Seam, back stitch, join, durable, fabric, measure, cut, accuracy, quality		Textile, design, purpose, user, evaluate, refine, durability, function, technique
Electrical Systems						Substantive Knowledge I know that electrical systems use components such as	Substantive Knowledge I know that electrical systems can be designed for a

						batteries, wires and bulbs to work. - I know that a complete circuit is needed for electricity to flow. - I know that outputs (e.g. lights, motors) are controlled by inputs (e.g. switches, sensors). - I know that simple programs can control electrical components. - I know that Crumble controllers can be programmed to perform actions. Skill Statements - Build a simple working electrical circuit safely. - Connect inputs and outputs using a Crumble kit. - Write and test simple programs (e.g. turning a light on/off). - Debug and improve a programmed circuit.	specific function or user. - I know that micro:bits can be programmed to control outputs and respond to inputs. - I know that electrical components must be assembled precisely for reliability. - I understand how inputs, processes (code) and outputs work together in a system. - I know how to evaluate electrical products against design criteria. Skill Statements - Design an electrical system for a specific purpose (e.g. alarm, step counter, light system). - Build circuits with accuracy and precision. - Program a micro:bit to control outputs and respond to inputs.
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						Explain how their system works (linking program and circuit).	- Combine coding and electronics to create a functional product. - Evaluate and refine their product based on function and user needs.
Key Vocabulary						Circuit, component, battery, wire, input, output, program, debug, Crumble, controller	Micro:bit, system, input, output, program, function, sensor, code, evaluate, refine

Implementation

Design and Technology is a crucial part of school life and learning and it is for this reason that as a school we are dedicated to the teaching and delivery of a high-quality Design and Technology curriculum.

This is implemented through:

- A well thought out, whole school, yearly overview of the DT curriculum which allows for progression across year groups in all areas of DT (textiles, mechanisms, structures, food and electrical systems)
- Well planned and resourced projects providing children with a hands-on and enriching experience
- A range of skills being taught ensuring that children are aware of health and safety issues related to the tasks undertaken
- Teachers being given ownership and flexibility to plan for Design and Technology; often teaching DT as a block of lessons to allow the time needed for the children to be critical, inventive and reflective on their work.
- Each project from Year 1 to Year 6 addressing the principles of designing, making, and evaluating and incorporating relevant technical knowledge and understanding in relevant contexts.
- Pupils being introduced to specific designers, chefs, nutritionists, etc. helping to engender an appreciation of human creativity and achievement and increase the cultural capital from which they can draw in the future.

As a school, we promote Design and Technology in the wider school through an after school gardening club for Key stage 2 children where they learn about where food comes from by growing their own, and the importance of a balanced, healthy and varied diet and how to prepare this. We grow and harvest a range of vegetables.

Early Years Foundation Stage

During the EYFS pupils explore and use a variety of media and materials through a combination of child initiated and adult directed activities. They have the opportunities to learn to:

- Use different media and materials to express their own ideas
- Use what they have learnt about media and materials in original ways, thinking about form, function and purpose
- Make plans and construct with a purpose in mind using a variety of resources
- Develop skills to use simple tools and techniques appropriately, effectively and safely
- Select appropriate resources for a product and adapt their work where necessary
- Cook and prepare food adhering to good health and hygiene routines

Impact

Children will have clear enjoyment and confidence in Design and Technology that they will then apply to other areas of the curriculum. Through carefully planned and implemented learning activities the pupils develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world. They gain a firm foundation of knowledge and skills to see them equipped to take on further learning beyond primary school. Pupil's skills and knowledge are assessed by the class teacher, throughout lessons and a summative assessment is completed termly. This informs the Design and Technology coordinator of any further areas for curriculum development, pupil support and/or training requirements for staff. EYFS pupils' progress and attainment tells us whether each individual child is below expected, at expected or above expected attainment for their age.