2023 - 2024

Success in Design Technology



Subject audit

ST. MARY'S RC. PRIMARY SCHOOL
Successful learners

Date	Summer 22	Autumn 23	Summer 24
Quality of Education			
Intent			
Does your subject reflect a coherent rationale for the school's broad and balanced curriculum?	G	G	
Is there a carefully sequenced progression of Design & Technology knowledge/concepts/skills to end of KS1/2	G	G	
Does your unique Design & Technology curriculum meet your pupils' needs & meet N.C standards?	G	G	
Curriculum coverage allows all pupils to access content & make progress	G	G	
Clear identified targets are shown through the Curriculum Development plan	G	G	
Implementation			
Teachers can explain what children learn/why it's important in your subject's curriculum	A	A	
Subject leader's review / quality assure LTP and Unit Plans and check against in book looks to ensure implantation of intent	A	A	
Teachers understand what the depth of knowledge expected is at the end of every unit / year through knowledge organisers/progression ladders	A	G	
Subject leaders show knowledge and expertise to design, support and deliver the curriculum through the development of knowledge organisers and support given to teachers	G	G	
Book looks, working walls, pupil voice and school trips, show that your subjects' curriculum is implemented fully	G	G	
Teachers organize and sequence learning appropriately – shown in unit plans and LTPs	G	G	
There are opportunities for CPD support to upskill teachers in knowledge and skills for your subject	A	A	
Subject leaders, teachers and pupils are clear on how units are assessed and how progress is shown	A	A	
Differentiation is appropriate to enhance all pupils' capacity to access the full curriculum	G	G	
Use of the locality are maximized to provide firsthand experience within your subject.	N/A	R	
Pupils use appropriate resources for your subject to build knowledge and skills	G	G	
Clear understanding of what progression looks like in and across each year group – progression of vocabulary is explicit	G	G	
Opportunities for all staff to moderate/ share / feedback on work	A	A	
Impact			
Pupils have embedded and retained fluent knowledge and skills in your subject's knowledge, skills and vocabulary (in and across years)	A	A	
Children have progressed in different strands of your subject and this is clear from book look and pupil voice	G	A	

Subject Portfolio shows children voice, learning and progress through exampl es of work, images etc	G	A	
Behaviours and Attitudes			
Pupil voice shows learners are positive towards your subject	G	G	
All groups are committed to learning, know how to learn and take pride in the work for your subject	G	G	
Personal Development			
Builds knowledge, skills and critical thinking that helps prepare for next stage	G	G	
Provides opportunities to help learners discover wider interests	G	G	
Supports learners to develop their character through a Growth Mindset	G	G	
Prepares learners to be responsible and active citizens	G	G	
Supports the development of an understanding of British values and appreciate commonality and diversity	G	G	
Leadership and Management			
Subject leader is effective and has an ambitious vision to provide a high quality and inclusive subject curriculum	G	G	
Subject leader provides opportunities and focus on improving staff subject and content knowledge	G	G	
Practice and knowledge of staff is building overtime	G	G	
Assessment is used appropriately to help support all pupils to make progress and achieve	A	R	
Subject leader plans opportunities for work to be showcased and celebrated in whole school exhibitions with parents and the wider community	G	G	

Why is DT important at our school?

Intent:

- DesignandTechnologyisaninspiring,rigorousandpractical subject, using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety ofcontexts
- Children consider their own and others' needs, wants and values
- Childrenacquireabroadrangeofsubjectknowledgeand drawondisciplinessuchasmaths,science, engineering, computing andart
- Childrenlearnhowtotakerisks,becomingresourceful, innovative,enterprisingandcapable citizens
- Throughevaluatingpastandpresentdesignandtechnology childrendevelopacriticalunderstandingof itsimpacton daily life and the wider world
- High quality design and technology education makes an essential contribution to the creativity, culture wealth and well-being of thenation.
- Children have the opportunity to be creative and imaginative, in order to design, make and evaluate products to solve real and relevant problems.

Aims

The national curriculum for design and technology aims to ensure that all pupils:

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
- Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.
- Critique, evaluate and test their ideas and products and the work of others.
- Understand and apply the principles of nutrition and learn how to cook.

Implementation

- The teaching and implementation of the Design Technology Curriculum at our school is based on the National Curriculum and supported by, 'Progression in Design Technology' ladders developed by our Design Technology subject leader, ensure a well-structured approach to progression in DT.
- Using the National Curriculum objectives as a guide, the curriculum has been broken down across year groups to ensure good coverage and progression in all subject disciplines.
- Clear and appropriate cross curricular links to underpin learning in multi areas across the curriculum giving the children opportunities to learn life skills and apply skills to 'hands on' situations in a purposeful context.
- Delivery showing clear following of the design process where each project fill follow: research, design, make and evaluate.
- A range of skills will be taught ensuring that children are aware of health and safety issues related to the tasks undertaken
- Independent learning: In design technology children may well be asked to solve problems and develop their learning independently. This allows the children to have ownership over their curriculum and lead their own learning in Design Technology.
- Collaborative learning: In design and technology children may well be asked to work as part of a team learning to support and help one another towards a challenging, yet rewarding goal.

Teachers are provided with 6 curriculum planning insets each year on top of their PPA to plan their curriculum units. As part of this planning process, teachers:

- Create vocabulary and skill organisers to focus their development and ensure progression
- A cycle of lessons that carefully plans for progression and depth through the cross referencing of Design Technology progression documents.

Impact

- Children will have clear enjoyment and confidence in design and technology that they will then apply to other areas of the curriculum.
- Children will ultimately know more, remember more and understand more about Design Technology, demonstrating this knowledge when using tools or skills in other areas of the curriculum and in opportunities out of school.
- The large majority of children will achieve age related expectations in Design Technology.
- As designers children will develop skills and attributes they can use beyond school and into adulthood.

Design Technology Rationale

Design and technology Rationale

A rationale describing how The Federation of St Cuthbert's and St Mary's have their own bespoke, unique curriculum that prioritises progression, 'sticky' knowledge, links to prior learning and enjoyment.

At The Federation of St Cuthbert's and St Mary's, our carefully designed Design and Technology curriculum helps pupils to:

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.
- Critique, evaluate and test their ideas and products and the work of others.
- Understand and apply the principles of nutrition and learn how to cook.

The objectives in Design and Technology are taught alternatively over two years to ensure coverage of the skills and a well-balanced curriculum linked to the topics in each year group. Every child has their own Design and Technology book which they start at the beginning of Key Stage One, and this goes up through the school with them to enable the children to see and track their own progress year on year. The children gain a comprehensive range of techniques which are sequentially built upon. Children are exposed to four strands over a two-year cycle including; textiles, food, construction and sheet materials. Children will follow a similar process when studying the four different strands where they will begin looking at existing works and describing and comparing them before they then design their own creation and carry it out and then evaluate their final piece. They will continue to use perspective and judgement and they will use critical thinking throughout. Speaking and listening skills are a key element to our design and technology curriculum.
Opportunities to showcase the children's creations and to show the progress of skills throughout the school are done through whole school Design and Technology exhibitions.

EYFS:
Design and Technology is delivered under the area of, 'Expressive arts and Design,' through continuous provision activities. Children can express their creativity in a range of open-ended activities; such as junk modelling, food tasting and paper crafts. The Design and Technology curriculum is designed to give pupils opportunities to be creative, to develop and to learn new skills. The EYFS curriculum feeds into the skills taught in Year 1. (Year 1 skills ladder).

Key stage 1 & 2
Design and Technology is primarily delivered in discreet afternoon sessions, once a week. Staff follow the skills progression ladders to plan lessons which build upon prior knowledge whilst integrating skills. This knowledge and skills are built upon as the year progresses to ensure that pupils experience all areas of textiles, food, construction and sheet materials. They learn about different craft makers and designers and become exposed to appropriate vocabulary that they can begin to use themselves. Opportunities for outdoor learning and links to the community are also planned for. The children record their work in their own books which are marked using next steps marking, to extend their knowledge and move their learning on children reply to marking in blue pen. Tracking children's progress is important to establish their acquisition of knowledge and skills. Learning starts with the children's prior knowledge and any misconceptions they may have. Class teachers decide upon the most appropriate age-related way of obtaining the children's prior knowledge. Misconceptions that arise throughout the unit are identified and addressed appropriately by the teacher. Recording of the children's learning in their books shows how effectively knowledge and skills have been embedded and mastered. Children evaluate their learning by self and peer assessment. Staff assess the children against the skills taught for their year group.

What are the key knowledge concepts in Design & Technology at our school?

Skills and understanding		Creativity
Drawing Painting Sculpting Sketching Mixing Shape Space Nets Researching Manipulating malleables	Joining methods Structures Mechanisms Materials Electrical knowledge Nutrition Plan Design Critique	Colour Pattern Texture Imagining Reasoning Designing Imitation Innovation Enterprise
Competence	**Cultural**	**Language**
Evaluating Analysing Invent Create Experiment Researching Selecting appropriate tools and media Sustainability	History Craft workers Designers Architects Cultural trends Tradition Industry	Print Perspective Landscape Portrait Construction Characteristics Proportion Technical Aspects Prototype Product Consumer Plan Design Critique Structures

What are the key DT subject discipline skills?

- Children can experiment, invent and create their own works of design and technology
- Children can think critically and develop a more rigorous understanding of design
- Children know how design & technology reflects and shapes our history and contributes to the culture, creativity and wealth of our nation
- Children can produce creative work, exploring their ideas and recording their experiences
- Children are proficient in researching, designing, creating and evaluating products
- Children can evaluate and analyse creative works using the language of design technology
- Children develop their technical knowledge applying their understanding
- Children are taught to cook and apply their principles of nutrition and healthy eating

How does our school ensure progression in our key knowledge and concepts in DT?

- The curriculum identifies points where comparisons can be made
- Key concepts are revisited year on year to consolidate pupils understanding
- Knowledge that is taught builds on prior learning and is therefore more in-depth
- Increasing complexity of subject specific language and precision is expected
- Children are able to make comparisons between different artists, designers and craft makers that have been studied
- Children will develop their understanding and use of the language of design technology
- Children will be able to think critically and develop a more rigorous understanding of design technology

How we know children have made progress:

<table>
<tr><th colspan="2">End of Foundation Stage</th></tr>
<tr><td colspan="2">Children can
Use what they have learnt about media and materials in original ways, thinking about uses and purposes. (Expressive Arts and Design: Being Imaginative)
Represent their own ideas, thoughts and feelings through design and technology (Expressive Arts and Design: Being Imaginative)
Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function (Expressive Arts and Design: Exploring and Using Media and Materials).
Handle equipment and tools effectively
Talk about the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe. They manage their own basic hygiene and personal needs successfully, including dressing and going to the toilet independently</td></tr>
<tr><td colspan="2">End of KS1</td></tr>
<tr><td>Children can
Cooking and Nutrition
Understand the basic principles of a healthy and varied diet to prepare dishes
Understand where food comes from
Design
Design purposeful, functional, appealing products for themselves and other users based on a design criteria
Generate, develop, model and communicate their ideas through talking, drawing, templates, mock ups and, where appropriate, information and communication technology</td><td>Make
Select from and use a range of tools and equipment to perform practical tasks (e.g. cutting, shaping, joining and finishing)
Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
Evaluate
Explore and evaluate a range of existing products
Evaluate their ideas and products against design criteria and identify changes they would make.
Technical Knowledge
Build structures, exploring how they can be made stronger, stiffer and more stable
Explore and use mechanisms (e.g. levers, sliders, wheels and axles) in their products</td></tr>
</table>

End of KS2	
Children can Cooking and Nutrition • Understand and apply the principles of a healthy and varied diet • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • Understand seasonality, and know where and how a variety of ingredients are grown, reared and processed Design • Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals and groups • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design Make • Select from and use a wider range of tools and equipment to perform practical tasks • 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	Evaluate • Investigate and analyse a range of existing products • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • Understand how key events and individuals in design and technology have helped shape the world Technical Knowledge • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Understand and use mechanical systems in their products (e.g. gears, pulleys, cams, levers and linkages) • Understand and use electrical systems in their products (e.g. bulbs, buzzers, motors) • Apply their understanding of computing to program, monitor and control their products

Design Technology Progression in Vocabulary

Design Technology Vocabulary is split into three different categories: making, construction and structure, textiles and food and drink.

Making, Construction and Structure					
Year 1 and 2		**Year 3 and Year 4**		**Year 5 and Year 6**	
Investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function, cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base,	top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder	evaluating, design brief, design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, planning, annotated sketch, sensory evaluations, shell structure, three dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge,	face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision	functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, mock-up, prototype frame structure,	Prototype, annotated sketch, innovation, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, functional,

Textiles		
Year 1 and 2	**Year 3 and Year 4**	**Year 5 and Year 6**
stitch, fabric, material, thread, cotton, needle, joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish	Running stitch, back stitch, over stitch, fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance	seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings,

Food Technology						
Year 1 and 2		**Year 3 and Year 4**		**Year 5 and Year 6**		
fruit and vegetable names, names of equipment and utensils, sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard, flesh, skin, seed, pip,	core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients	name of products, names of equipment, utensils, techniques and ingredients, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook,	fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested, healthy/varied diet	ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins,	nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality, utensils, combine,	pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, fold, knead, stir, crumble

Design Technology Long Term Plans

	Autumn	Spring	Summer
Year 1	Sheet materials– Levers		Food Technology –
Year 2	**Textiles**		**Construction**
Year 3 & 4	**Sheet materials**		**Food Technology**
Year 5		Joining Materials, Food Technology	
Year 6	**Construction**	**Textiles**	

Design Technology Medium Term Overview

	Focus and Skills
Year 1	**<u>Sheet materials – Toy making -levers</u>** Children will investigate different products and their attachments. They will design, make and evaluate their own product and incorporate the following skills. • Fold, tear and cut paper and card, roll paper to create tubes • Cut along lines, straight and curved • Curl paper • Use hole punch • Insert paper fasteners for card linkages • Create hinges • Use simple pop ups • Investigate strengthening sheet materials Investigate joinings temporary, fixed and moving
	<u>Food – seaside picnic</u> Children will investigate different healthy foods and will make their own healthy food plate. They will find out where different foods come from. They will learn about different tools and utensils which are used for cooking and how to use these safely. They will design, make and evaluate their own food and incorporate the following skills. • Develop a food vocabulary using taste, smell, texture and feel • Group familiar food products e.g. fruit and vegetables • Cut, peel, grate, chop a range of ingredients • Work safely and hygienically • Understand the need for a variety of foods in a diet Measure and weigh food items, non statutory measures e.g. spoons, cups
Year 2	**<u>Textiles - puppets</u>** Children will investigate different puppets and practise their sewing skills. They will design, make and evaluate their own puppet and incorporate the following skills. • Colour fabrics using a range of techniques e.g. fabric paints, printing, painting • Cut out shapes which have been created by drawing round a template onto the fabric • Join fabrics by using running stitch, glue, staples, over sewing, tape Decorate fabrics with buttons, beads, sequins, braids, ribbons

	<u>Construction - buggies</u> The children will investigate different vehicles to include axles. The children will then design, make and evaluate their vehicle and incorporate the following skills. • Make vehicles with construction kits which contain free running wheels • Use a range of materials to create models with wheels and axles e.g. tubes, • dowel, cotton reels • Attach wheels to a chassis using an axle • Join appropriately for different materials and situations e.g. glue, tape, • Mark out materials to be cut using a template • Cut strip wood/dowel using hacksaw and bench hook See glue gun used by an adult
Year 3 & 4	**<u>–Sheet materials – pop up books</u>** The children will look at examples of different products and will look at and practise making different folds and linkages. The children will make, design and evaluate their own products and will incorporate the following skills. • Cut slots • Cut internal shapes • Use lolly sticks/card to make levers and linkages • Use linkages to make movement larger or more varied. • Use and explore complex pop ups Create nets
	<u>Food –</u> Children will investigate popular food and investigate different cakes and biscuits, looking at taste, texture and design. They will look at where different foods come from. The children will make, design and evaluate their and will incorporate the following skills. • Develop sensory vocabulary/knowledge using, smell, taste, texture and feel • Analyse the taste, texture, smell and appearance of a range of foods • Follow instructions • Make healthy eating choices from and understanding of a balanced diet • Join and combine a range of ingredients e.g. snack foods • Work safely and hygienically • Measure and weigh ingredients appropriately

<table>
<tr><td rowspan="2">Year 5</td><td><u>Sheet materials</u>
The children will look at examples of different products and how materials have been joined together. They will use the following skills
• Cut slots
• Cut accurately and safely to a marked line
• Join and combing materials with temporary, fixed or moving joinings
• Use a craft knife, cutting mat and safety ruler under one to one supervision if appropriate
Choose an appropriate sheet material for the purpose</td></tr>
<tr><td><u>Food</u>
The children will explore different tastes and textures. They will design, make and evaluate to incorporate the following skills.
• Prepare food products taking into account the properties of ingredients and sensory characteristics
• Select and prepare foods for a particular purpose
• Taste a range of ingredients, food items to develop a sensory food vocabulary for use when designing.
• Weigh and measure using scales
• Cut and shape ingredients using appropriate tools and equipment e.g. grating
• Join and combine food ingredients appropriately e.g. beating, rubbing in
• Decorate appropriately
• Work safely and hygienically
Show awareness of a healthy diet from an understanding of a balanced diet</td></tr>
<tr><td>Year 6</td><td><u>Construction</u>
The children will look at a traditional WW1 trench and will test different materials to use and will investigate electrical circuits including buzzers and bulbs (linked to science lessons). Children will make, design and evaluate their trench and will incorporate the following skills.
• Use bradawl to mark hole positions
• Use hand drill to drill tight and loose fit holes
• Cut strip wood, dowel, square section wood accurately to 1mm
• Join materials using appropriate methods
• Incorporate motor and a switch into a model
• Control a model using an ICT control programme
• Use a cam to make an up and down mechanism.
• Build frameworks using a range of materials e.g. wood, card corrugated plastic to
• support mechanisms
Use glue gun with close supervision</td></tr>
</table>

	<u>Textiles – reusable shopping bag</u> The children will investigate different types of sewing and will practise these. The children will make, design and evaluate the products and will incorporate the following skills. • Create 3D products using pattern pieces and seam allowance • Understand pattern layout • Decorate textiles appropriately often before joining components • Pin and tack fabric pieces together • Join fabrics using over sewing, back stitch or blanket stitch. • Combine fabrics to create more useful properties Make quality products

How well do children learn in DT at our school?

How well do they learn?	Evidence
Children know the skills they have been taught.	Work in books e.g. examples of tool use and explanations.
Practising new skills.	Work in books e.g. pictures/pic-collages, examples of sewing etc.
Children know what they have done well and what their next steps are.	Pupil voice discussions. Feedback in books.

What are our school's strengths?

- The full design process is taught in every year group (investigate, plan/design, make and evaluate)
- Evidence of children practising new skills and tool use
- Children's evaluations show how well their product has been made and what they could do to improve
- Strong cross curricular links to topics and other subjects (maths, science, ICT)

What do we need to get better at?

- Showing progress through a project (year on year through the children's D&T books)
- All children to be able to talk about the skills they have learned
- Assessment – self and peer assessment to be developed (through topic organisers)

How will we improve?

- Development of topic organisers to develop self and peer assessment.
- Regular pupil voice focussing on skills development and showing examples in work.
- Teaching discussing and showing what skills they are using and how they progress from previous years / units.

Subject Overview

Context

Years 2,4,6 and years 1,3,5 all work on the same strand of DT to ensure that all objectives are covered and so that children gain a broad understanding of different artists and their style. DT at our school is one of the children's most enjoyable subjects and pupil voice is great evidence of this. During the pandemic the teaching of DT became more inconsistent so we are working on getting this back to what it was before. This year CPD opportunities will be available to staff and a journey through a unit will be sent out to help staff with planning.

Long-Term Plan (2-3 Year Timescale)

- **DT journey through a unit to be sent out and followed**
- **Assessment**
- **More CPD opportunities**

Priorities (1 Year Timescale)

- **Assessment**
- **More CPD opportunities**