St. Francis Xavier's RC Primary School

Love one another as I have loved you

Design and Technology Policy

Our Mission

Share God's love with one another

Follow your dreams

E**x**cel in citizenship

Our Mission is to:

- Be a witness to the values, teaching and beliefs of the Roman Catholic Church
- Promote achievement and enjoyment for all
- Expect the best for each individual
- Inspire learning
- Collaborate with the community
- Promote a healthy and safe life style
- Create a sustainable school
- Continually strive to be effective

Aims
INTENT
A St. Francis Xavier's pupil will:

- Demonstrate the ability to use time efficiently and work constructively and productively with others.
- Have the ability to carry out thorough research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs.
- Exhibit the ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely.
- Have a thorough knowledge of which tools, equipment and materials to use to make their products.
- Show the ability to apply mathematical knowledge.
- Be able to manage risks exceptionally well to manufacture products safely and hygienically.
- Have a passion for the subject and knowledge of up-to-date technological innovations in materials, products and systems.

IMPLEMENTATION
What does our Design and Technology Curriculum look like?
Please refer to:
LTP: to demonstrate the progression of knowledge and skills within the whole school Design and Technology offer
ROCKS: For curriculum knowledge and skills units relating to each unit
MTP for each year group: to map teaching and learning, knowledge and skills through a topic.
Non-core topic webs: summarize the key knowledge and skills to be acquired and retained during a Design and Technology topic.

IMPACT
Our Design and Technology curriculum facilitates sequential learning and long-term progression of knowledge and skills. Teaching and learning methods provide regular opportunities to recap acquired knowledge through high quality questioning, discussion, modelling and explaining to aid retrieval at the beginning and end of a lesson or unit. This will enable all children to alter their long-term memory and know more, remember more and be able to do more as designers and makers.

Curriculum:
Pupils will be taught in line with the National Curriculum 2014 and will experience Design and Technology (D & T) as part of their cross-curricular learning where appropriate.

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in a process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Foundation Stage

Children explore and select materials and equipment using skills such as cutting, joining, folding and building.

Key Stage 1

When designing and making, pupils should be taught to:

Design

- design purposeful, functional, appealing products for themselves and other users based on design criteria
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.

Make

- select from and use a range of tools and equipment to perform practical tasks [for example, 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.

Technical Knowledge

- 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.

Cooking and Nutrition

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

Key Stage 2

When designing and making, pupils should be taught to:

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 or 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 [for example, 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

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 [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.

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, caught and processed.

Organisation and time allocation

Time for D&T lessons will be timetabled by individual teachers and will usually alternate with art units of work to ensure full coverage of the National Curriculum. Teachers may however use a stand-alone 'D&T day' to a particular project if this proves to be more practical.

Each class is responsible for clearing up this area, encouraging children to store materials and equipment safely and neatly.

During the school's Healthy Eating Week each year group will complete a 'food and nutrition' cooking activity which links to their Key Stage objectives.

Planning and Differentiation

Planning sets the goals to which the children will be guided and will take account of the abilities of the children, allowing appropriate differentiation to ensure progression and continuity of subject coverage across the school. To ensure progression across the key stages, long term plans will be highlighted to show the objectives covered. Planning will incorporate the elements of designing, making, evaluating and technical knowledge. See appendix 1 for further detail of progression of skills for each term in each year group.

In addition to during timetabled lessons, Learning Log tasks are used to embed the use of Design Technology skills in other subject areas.

Outside experience

We should encourage links with Industry by contacting local producers, suppliers, shops etc. Visits should be arranged where possible. Individual teachers may choose to involve parents with DT projects, complying with school policy on visitors.

Resources

Resources are mainly stored in the art / DT cupboard in KS2 and in individual classes in EYFS / KS1. Cookery resources are found in the Breakfast Club room, as cookery lessons usually take place here. An induction hob and cooker are also found in this area. Any cooking must be done under adult supervision; the adult is then responsible for turning the cooker off and ensuring the safety of this area.

Assessment, recording and reporting

Assessment in DT is on-going and is often based on the dialogue between teacher and pupil about what is in progress and what has been achieved. It will focus mainly on the design and make elements of the subject.

Formative assessment, based on informal observation and dialogue is used. The children are encouraged to discuss and evaluate their own achievement and progress individually and in groups.

Assessment is based on the level descriptions in the National Curriculum.

Using formative assessment, the teacher uses their professional judgement to assess at the end of a unit of work, whether a pupil is above ARE (age related expectations), at ARE, or below ARE and records their judgment on the subject assessment excel spread sheet on common staff.

- As part of this inclusive subject, D&T from children of all abilities is recorded in their individual D&T books
- There is a folder on 'common staff' for each year group to save photographs of D&T work in progress, examples of completed work and examples of outstanding work.
- Evidence of D&T should also be shared on the school website and with D&T curriculum lead
- Children will be encouraged to use levelled 'design, make and evaluate' recording sheets based upon their age and ability (starting from Year Two)
- Reports on individual children's progress are made at end of each national curriculum year.

Health and Safety in Design and Technology

The individual teacher ensures a safe working environment according to agreed safety procedures, allowing for risk assessment where needed. This is based upon school and county guidelines for health and safety practice. Please see Appendix with guidance on Health and Safety for D&T.

Tools

Children must be shown the correct way to use tools and must be closely supervised until they are competent.

These tools may be used independently after instruction

Scissors

Sticky tape dispenser

Stapler

Hole punch

These tools may be used under close adult supervision

Handsaw (a saw bench must be used)

Shaper saw

Hammer and nails

Screwdriver and screws

Low temperature glue gun (care must be exercised as they can still burn a little)

Paper cutter

These tools may be used by the teacher to assist construction but must NOT be used by children

Hot glue gun

Stanley knives (snips should be encouraged instead)

General Points

Ensure appropriate adhesives are used.

Ensure junk packages are clean and have not been used for holding hazardous materials.

Textiles

Risks to consider:

Storage of sharp objects such as pins and needles,

Follow instructions for the correct storage, use and disposal of fabric dyes and paints.

Electricity
The following points should be noted:
Explain to children that they should not experiment with mains electricity and should use batteries in commercially available appliances only when supervised by an adult.

It is inadvisable to use rechargeable batteries for home-made circuits.

Any electrical equipment must be plugged into a circuit breaker and must not be allowed to come into contact with water.

Take care during investigations ie sharp edges within torches.
Children should not investigate the rotating parts of mechanisms without adult supervision and only then when there is no risk of sudden rotation.

Pneumatics
Following points should be noted:
Make sure components are clean and have not been used for medical purposes.

Take care with syringe plungers as they can come out with some force.

Out Door Visits
Any visits out of school need to be well supervised with appropriately briefed adult helpers supporting teaching staff.

Food Preparation
Teachers are informed at the beginning of each academic year of any dietary requirements or food allergies.
These points should be observed before food preparation**:**

Surfaces cleaned down and wiped with antibacterial cleaner,

A plastic cloth kept for food activities and used to cover wooden/old tables.

Aprons to be provided.

Access to hand-washing and washing up facilities.

Appropriate storage facilities for food.

Teach dangers of hot cookers/ utensils,

Supervise use of knives, peelers & graters.

This policy was updated May 2024. The policy was adopted by the Standards and Curriculum Committee of the Governing Body of St Francis Xavier's RC Primary on 20th May 2024. This policy will be monitored every two years.

Signed: *Sylvia Cockroft* Date: 20.5.24 Chair of Standards and Curriculum Committee

Signed: *Diana Pearce* Date: 20.5.24 Headteacher

Michelle Black
Design and Technology Subject Leader
May 2024

Appendix 1	Autumn		
Reception	**<u>Bees</u>** Make a bee using a range of materials, textures and paint. Make bug hotel- using reels, tyres (Pinterest) for Welly Garden. Recipes using honey. Tasting cereal with honey- describe the taste. **40-60 months** Constructs with a purpose in mind, using a variety of resources. Uses simple tools and techniques competently and appropriately Selects appropriate resources and adapts work where necessary. Selects tools and techniques needed to shape, assemble and join materials they are using.	<u>Early learning goal- Materials</u> They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function	<u>Early learning goal- Materials</u> They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function
Year One	**<u>Fabric faces</u>** Design Draw on their own experience to help generate ideas <u>Skills</u> With help measure, mark out, cut and shape a range of materials Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape Evaluate Evaluate their products as they are developed, identifying strengths and possible changes they might make **<u>Christmas sweets</u>** **Skills** Use basic food handling, hygienic practices and personal hygiene **Evaluate** Evaluate their product by asking questions about what they have made and how they have gone about it	**<u>Pirate's packed lunch (materials)</u>** **Design** Develop their design ideas applying findings from their earlier research Use tools eg scissors and a hole punch safely **Skills** With help measure, mark out, cut and shape a range of materials Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape **<u>Evaluate</u>** Evaluate their product by discussing how well it works in relation to the purpose Evaluate their products as they are developed, identifying strengths and possible changes they might make **<u>Weaving bracelets</u>** **Skills** Use simple finishing techniques to improve the appearance of their product Make their design using appropriate techniques	**<u>3D Castles</u>** **Design** Suggest ideas and explain what they are going to do Identify a target group for what they intend to design and make Skills With help measure, mark out, cut and shape a range of materials Use tools eg scissors and a hole punch safely Assemble, join and combine materials and components together using a variety of temporary methods **Evaluate** Evaluate their product by discussing how well it works in relation to the purpose Evaluate their products as they are developed, identifying strengths and possible changes they might make **<u>Fruit salad</u>** **Skills** Select and use appropriate fruit and vegetables, processes and tools

Year Two	**Boats** **Design** Develop their design ideas through discussion, observation, drawing and modelling Identify simple design criteria (waterproof/ floating) Skills Assemble, join and combine materials in order to make a product Measure, cut and score with some accuracy Evaluate Evaluate their products as they are developed, identifying strengths and possible changes they might make Jewish bread Skills Follow safe procedures for food safety and hygiene Evaluate Talk about their ideas, saying what they like and dislike about them	Hot cross buns Skills Follow safe procedures for food safety and hygiene Great fire of London: Houses Design Make simple drawings and label parts Skills Begin to select tools and materials; use vocab' to name and describe them Measure, cut and score with some accuracy Choose and use appropriate finishing techniques Joins/ hinges **Evaluate** Evaluate their products as they are developed, identifying strengths and possible changes they might make	**Sewing coasters** Design Develop their design ideas through discussion, observation, drawing and modelling Identify a purpose for what they intend to design and make **Skills** Use basic sewing techniques **Evaluate** Evaluate their products as they are developed, identifying strengths and possible changes they might make
Year three	**Stone age houses** **Design** Identify a purpose and establish criteria for a successful product. Make drawings with labels when designing **Skills** Work safely and accurately with a range of simple tools Select tools and techniques for making their product **Evaluate** Evaluate their product against original design criteria e.g. how well it meets its intended purpose **Stone age Berry Stew** **Skills** Demonstrate hygienic food preparation and storage **Christmas tree light puppet** **Design** Plan the order of their work before starting	**Narrow boats** Design Generate ideas for an item, considering its purpose and the user/s Identify a purpose and establish criteria for a successful product. Skills Think about their ideas as they make progress and be willing change things if this helps Evaluate Evaluate familiar products Peer evaluation	Roman Catapult Design Explore, develop and communicate design proposals by modelling ideas Make drawings with labels when designing Make Use finishing techniques strengthen and improve the appearance of their product Measure, mark out, cut, score and assemble components with more accuracy Evaluate Evaluate their product against original design criteria e.g. how well it meets its intended purpose

	Skills Select tools and techniques for making their product Measure, mark out, cut, score and assemble components with more accuracy Evaluate Evaluate their product against original design criteria		
Year four	**Saxon Swords** Design Generate ideas, considering the purposes for which they are designing **Digestive system in a shoe box** Design Make labelled drawings from different views showing specific features Measure, mark out, cut and shape a range of materials **Mince pies** Skills Apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens Weigh and measure accurately (time, dry ingredients, liquids)	**Wooden cars with electrical circuits** Design 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 Make Select appropriate tools and techniques for making their product Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques Join and combine materials and components accurately in temporary and permanent ways Evaluate Evaluate their work both during and at the end of the assignment Evaluate their products carrying out appropriate tests	
Year 5	**Reusable bags** Design Generate ideas through brainstorming and identify a purpose for their product Draw up a specification for their design Make Sew using a range of different stitches, weave and knit Measure, tape or pin, cut and join fabric with some accuracy Evaluate Evaluate a product against the original design specification	**Levers and pullies** Cut and join with accuracy to ensure a good-quality finish to the product Select appropriate materials, tools and techniques	**Greek cuisine** Design Use results of investigations, information sources, including ICT when developing design ideas Skills Apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens Evaluate Evaluate it personally and seek evaluation from others
Year 6	**Global food (South America)** Design Recognise the importance of healthy ingredients on the body Make	**Periscopes** Design Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways Skills	**Bridges** Design Communicate their ideas through detailed labelled drawings Develop a design specification Make

	Make modifications as they go along Evaluate Evaluate their products, identifying strengths and areas for development	Assemble components which make working models <u>Designing and building houses</u> Use tools safely and accurately Use simple graphical communication techniques Sketch-up	Construct products using permanent joining techniques Evaluate Record their evaluations using drawings with labels Evaluate against their original criteria and suggest ways that their product could be improved Sketch up (computing)