St Francis' Catholic Primary School – DT Curriculum Progression

Design Technology Intent	St. Francis Catholic Primary School understands that D&T allows pupils to solve problems, think creatively and develop ideas. D&T offers pupils a chance to use creative thinking and activity within a defined purpose and tangible outcome. It enables them to identify needs and opportunities and to respond by developing ideas and eventually making products and systems. It encourages children to make positive changes to their quality of life. We are committed to nurturing pupils' curiosity and creativity, as well as preparing them for living in a modern world with rapidly changing and advancing technology. Through the study of design and technology, they combine practical skills with an understanding of aesthetic, social and environmental issues, as well as functions and industrial practices.

EYFS –see Development Matters 2021 for detailed examples of how to support learning in EYFS

Expressive arts and design The development of children's artistic and cultural awareness supports their imagination and creativity. It is important that children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials. The quality and variety of what children see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through the arts. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe.

0-3 YEARS	3-4 YEARS	RECEPTION
Explore different materials, using all their senses to investigate them. Manipulate and play with different materials. Use their imagination as they consider what they can do with different materials. Make simple models which express their ideas.	Explore different materials freely, in order to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures.	Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills. **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;

Area of Study	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	**National Curriculum** **Pupils should be taught to:** - 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		**National Curriculum.** **Pupils should be taught to:** - 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			
	Think of ideas and with help put them into practice Know what a design is and its purpose Use pictures and words to describe what they want to do (materials and tools)		Think of ideas and plan what to do next, based on what they know about materials and components Plan using specific materials and explain their choices Select the appropriate tools, techniques and materials explaining my choices Use pictures and words to describe what they want to do (materials, techniques, features-mechanics etc. and tools) Communicate their ideas using labelled sketches giving reasons for choices Start to produce step by step plans		Use their knowledge of design and designers to further research to help influence their own design Create models or prototypes to show aspects design Produce step by step plans Use computer aided design Come up with solutions to problems as they happen. Take part in technical discussions about ideas Come up with solutions to problems as they happen.	

<table>
<tr><td rowspan="2">Make</td><td colspan="2">National Curriculum. Pupils
should be taught to:
- 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,</td><td colspan="2">National Curriculum.
Pupils should be taught to:
- Select from and use a wider range of tools and equipment to perform practical tasks [e.g. cutting, shaping, joining and finishing].
- Accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</td></tr>
<tr><td>Know what materials can be used for a structure
Know what a join is and use one
Measure and mark out materials with care and increasing accuracy
Cut materials safely (scissors)
Be careful to make work look as neat as possible
Find out how to make materials for structure stronger (folding, rolling and joining, columns and triangles)
Know that textiles have different properties: touch, insulation, texture and waterproof.
Select the appropriate textile so that it does the job.
Describe textiles by the way they feel.</td><td>Use appropriate materials and an appropriate join
Measure and mark out materials with care and increasing accuracy (cm)
Use scoring and folding to shape materials accurately
Make cuts accurately (scissors and saws)
Make holes accurately (drill, punch)
Join materials to make products using both permanent and temporary fastenings.
Methods of working are increasingly precise aiming for a high quality finish
Select the appropriate textile(s) for a product.
Use sharp scissors accurately to cut textiles.</td><td>Select from a variety of materials best suited to a design
Measure using mm and then use scoring, and folding to shape materials accurately.
Make cuts accurately and reject pieces that are not accurate and improve their technique.
Joins are strong and stable, giving extra strength to products.
Some joins are flexible to allow for dismantling or folding.
Methods of working are precise so that products have a high quality finish.
Use computer programming when creating a product</td></tr>
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	• Measure, mark out and cut fabric. • Join fabrics using glue and running stitch. • Make sure work is neat and tidy.	• Use art textiles skills such as stitching to help create a product that is sturdy and fit for purpose. • Combine materials to add strength or visual appeal	• Combine art skills to add colour and texture to work. • Mark out using patterns and templates • Join textiles using art skills of stitching and embroidering to make durable and desirable products.
Evaluate	**National Curriculum. Pupils should be taught to:** explore and evaluate a range of existing products evaluate their ideas and products against design criteria	**National Curriculum.** **Pupils should be taught to:** 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	
	• Know / say what a product is • Describe a product (who is it for, what is made from, how is it made, how it works) • Talk about their own work (features, design, opinion) • Describe how their product works • Know the features of familiar products • Give reasons for some features (colour choice, material used, joining technique) • Explain why they chose certain materials, techniques and tools	• Research and evaluate existing products to inform planning • Understand that products are designed for a purpose (e.g. a problem, an audience, an event) • Talk about own and others' work (features, design, opinion) • Explain why they chose certain materials, techniques and tools • Say how they would improve their product • Identify what is working well and what can be improved (this is during the make as well as at the end)	• Research and evaluate existing products giving reasons for the decisions of the designers (materials, design, tools, techniques) • Use the ideas from current designers to help with plans • Reflect on designs and develop them bearing in mind the way they will be used (during the process)
Technical Knowledge and Knowledge of designers	**National Curriculum. Pupils should be taught to:** - 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	**National Curriculum.** **Pupils should be taught to:** - 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 [e.g. series circuits incorporating switches, bulbs, buzzers and motors] - Apply their understanding of computing to program, monitor and control their products	
	• Explore how moving objects work. • Look at wheels, axels, turning mechanisms, hinges and simple levers. • Make a product that moves using a turning mechanism (e.g. wheels, winding) or a lever or a hinge (to make a movement) • Know what a designer does. • Know the names and the products of some British designers • Say what they like and dislike about the product and the designer	• Know the application of mechanisms to create movement. • Combine a number of components well in a product. • Use simple circuits to either illuminate or create motion. • Make a product that uses both electrical and mechanical components. • Know that products have a good finish so that a user will find it both useful and attractive. • Know some designers from history • Talk about some of the tools, techniques and design used by the designer	• Choose components that can be controlled by switches or by ICT equipment. • Use science skills (resistance, circuits etc) to alter the way electrical products behave. • Explore mechanical movement using hydraulics and pneumatics. • Use other DT skills to create housings for mechanical components. • Product are well finished in a way that would appeal to users • Know how key events and individuals have influenced the world (in terms of products) • Compare and contrast the work of different designers (e.g. historical and modern)

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<tr><td rowspan="3">Cooking and Nutrition</td><td>National Curriculum.
Pupils should be taught to:
- Use the basic principles of a healthy and varied diet to prepare dishes
- Understand where food comes from</td><td colspan="2">National Curriculum.
Pupils should be taught to:
- 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</td></tr>
<tr><td>With help, use knives safely
Use a mixing bowl
Be aware of hygiene for cooking
Know some things are made and some things are natural
Know some things are dangerous to eat raw
Know heat changes food
Use a variety of utensils safely
Know what the food groups are
Know where some foods come from
Be aware there are different ways to cook
Prepare a healthy snack</td><td>Select ingredients for a product with reasons
Work in a safe, hygienic way
Begin to measure out ingredients
Understand what is healthy and unhealthy
Boil and bake to cook
Understand why we need a healthy diet
Use knowledge of the food groups to plan a lunch
Know where food comes from
Prepare a healthy meal (such as a healthy picnic or a survival stew)</td><td>Explain why they have chosen ingredients in a dish
Know why we need certain food types
Know about local produce
Know where different crops can be found around the world and understand the concept of carbon footprints
Know different cultures have different diets
Design and prepare a healthy dinner (such as a healthy meal for school inspired by Jamie Oliver)</td></tr>
<tr><td><u>Projects</u>
Parlick:
<u>Year A</u>
Recycled animal model
Robot- Moving Parts
Cookery- using home grown vegetables.

<u>Year B</u>
Pop up cards using leavers
Moon rover using wheels and axels
Toad waistcoat- Textiles
Nutrition- smoothies</td><td>Fairsnape:
<u>Year A</u>
Nutrition- Healthy picnic & Survival Stew
Iron Man- Lever puppet
Electricity- pupil led project

<u>Year B</u>
Textiles- 3D travel Bag
Create a planter- Recycled materials</td><td>Beacon:
<u>Year A</u>
Nutrition- Food from another culture
Textiles- Create an amazon explorer kit
Space- Motorised Vehicle with gears and pulleys

<u>Year B</u>
Nutrition- Healthy school meal
Cams Mechanisms- Blackpool illuminations</td></tr>
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