

# St Mary's Catholic Primary School – DT Curriculum Progression

## Design Technology Intent

St. Mary's 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 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.



### EYFS –see Development Matters 2023 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
<b>Design</b>	<b>National Curriculum</b> <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>- Design purposeful, functional, appealing products for themselves and other users based on design criteria.</li> <li>- Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and,</li> <li>- where appropriate, information and communication</li> <li>- technology</li> </ul>		<b>National Curriculum.</b> <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>- 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.</li> <li>- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> </ul>			
	<ul style="list-style-type: none"> <li> Think of ideas and with help put them into practice</li> <li> Know what a design is and its purpose</li> <li> Explain how their products will look and work through talking and simple annotated drawings</li> <li> Understand and follow simple design criteria</li> </ul>		<ul style="list-style-type: none"> <li> Identify the design features of their products that will appeal to intended customers</li> <li> Use their knowledge of a broad range of existing products to help generate their ideas</li> <li> Design innovative and appealing products that have a clear purpose and are aimed at a specific user</li> <li> Explain how particular parts of their products work</li> <li> Use annotated sketches and cross-sectional drawings to develop and communicate their ideas;</li> <li> When designing, explore different initial ideas before coming up with a final design</li> <li> When designing, explore different initial ideas before coming up with a final design</li> <li> Think of ideas and plan what to do next, based on what they know about materials and components</li> <li> Start to produce step by step plans</li> </ul>		<ul style="list-style-type: none"> <li> Use research to inform and develop detailed design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a target market</li> <li> Use their knowledge of products, design and designers to further research to help influence their own design</li> <li> Design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user</li> <li> Explain how the parts of their products work, in isolation and as part of the whole</li> <li> Use annotated sketches, cross-sectional drawings and exploded diagrams (possibly including computer-aided design) to develop and communicate their ideas</li> <li> Generate a range of design ideas and clearly communicate final designs;</li> <li> Create models or prototypes to show aspects design</li> <li> Produce step by step plans</li> </ul>	

<b>Make</b>	<p><b>National Curriculum. Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>- Select from and use a range of tools and equipment to perform practical tasks [e.g. cutting, shaping, joining and finishing]</li> <li>- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients,</li> </ul>	<p><b>National Curriculum. Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>- Select from and use a wider range of tools and equipment to perform practical tasks [e.g. cutting, shaping, joining and finishing].</li> <li>- 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</li> </ul>	
	<ul style="list-style-type: none"> <li> Begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, juicer</li> <li> Select from a range of materials, textiles and components with support, follow a simple plan or recipe</li> <li> Know what materials can be used for a structure</li> <li> Know what a join is and use one</li> <li> Measure and mark out materials with care and increasing accuracy</li> <li> Cut materials safely (scissors)</li> <li> Be careful to make work look as neat as possible</li> <li> Find out how to make materials for structure stronger (folding, rolling and joining, columns and triangles)</li> <li> Know that textiles have different properties: touch, insulation, texture and waterproof.</li> <li> Select the appropriate textile so that it does the job.</li> <li> Measure, mark out and cut fabric.</li> <li> Join fabrics using glue and running stitch.</li> <li> Make sure work is neat and tidy by the way they feel.</li> </ul>	<p>Place the main stages of making in a systematic order with growing confidence, carefully select from a limited range of tools and equipment, explaining their choices</p> <ul style="list-style-type: none"> <li> Select appropriately from a range of materials, textiles and components</li> <li> Learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures</li> <li> Learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures;</li> <li> Use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components;</li> <li> With growing independence, measure and mark out to the nearest cm and millimetre;</li> <li> Cut, shape and score materials with some degree of accuracy;</li> <li> Assemble, join and combine material and components with some degree of accuracy;</li> <li> Demonstrate how to measure, cut, shape and join fabric with some accuracy to make a simple product;</li> <li> Join textiles with an appropriate sewing technique;</li> <li> Begin to select and use different and appropriate finishing techniques to improve the appearance of a product such as hemming, tie-dye, fabric paints and digital graphics.</li> <li> Methods of working are increasingly precise aiming for a high-quality finish</li> </ul>	<ul style="list-style-type: none"> <li> Independently plan by suggesting what to do next with growing confidence, select from a wide range of tools and equipment, explaining their choices select from a range of materials and components according to their functional properties and aesthetic qualities</li> <li> Learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures</li> <li> Learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures</li> <li> Use a full range of materials and components, including construction materials and kits, textiles, and mechanical components</li> <li> Independently take exact measurements and mark out, to within 1 millimetre</li> <li> Cut, shape and score a range of materials with precision and accuracy</li> <li> Assemble, join and combine materials and components with accuracy</li> <li> Demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabric with precision to make a more complex product</li> <li> Join textiles using a greater variety of stitches, such as backstitch, whip stitch, blanket stitch</li> <li> Refine the finish using techniques to improve the appearance of their product, such as sanding or a more precise scissor cut after roughly cutting out a shape</li> <li> Methods of working are precise so that products have a high-quality finish.</li> </ul>

<b>Evaluate</b>	<p><b>National Curriculum. Pupils should be taught to:</b></p> <p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making</p> <p>explore and evaluate a range of existing products</p> <p>evaluate their ideas and products against design criteria</p>	<p><b>National Curriculum. Pupils should be taught to:</b></p> <p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making</p> <p>investigate and analyse a range of existing products</p> <p>evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>understand how key events and individuals in design and technology have helped shape the world</p>	
	<ul style="list-style-type: none"> <li> Know / say what a product is</li> <li> Describe a product (who is it for, what is made from, how is it made, how it works)</li> <li> Talk about their own work (features, design, opinion)</li> <li> Describe how their product works</li> <li> Know the features of familiar products</li> <li> Give reasons for some features (colour choice, material used, joining technique)</li> <li> Explain why they chose certain materials, techniques and tools</li> </ul>	<ul style="list-style-type: none"> <li> Research and evaluate existing products to inform planning</li> <li> Explore what materials/ingredients products are made from and suggest reasons for this</li> <li> Explain why they chose certain materials, techniques and tools</li> <li> Say how they would improve their product</li> <li> Identify what is working well and what can be improved (this is during the make as well as at the end)</li> </ul>	<ul style="list-style-type: none"> <li> Research and evaluate existing products giving reasons for the decisions of the designers (materials, design, tools, techniques)</li> <li> Use the ideas from current designers to help with plans</li> <li> Talk about own and others' work (features, design, opinion)</li> <li> Reflect on designs and develop them bearing in mind the way they will be used (during the process)</li> <li> consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product</li> </ul>
<b>Technical Knowledge and Knowledge of designers</b>	<p><b>National Curriculum. Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>- Build structures, exploring how they can be made stronger, stiffer and more stable</li> <li>- Explore and use mechanisms [e.g. levers, sliders, wheels and axles], in their products</li> </ul>	<p><b>National Curriculum. Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>- 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]</li> <li>- Apply their understanding of computing to program, monitor and control their products</li> </ul>	
	<ul style="list-style-type: none"> <li> Build simple structures, exploring how they can be made stronger, stiffer and more stable.</li> <li> Explore how moving objects work: look at wheels, axels, turning mechanisms, hinges and simple levers.</li> <li> Know what a designer does.</li> <li> Know the names and the products of some British designers.</li> <li> Say what they like and dislike about the product and the designer.</li> </ul>	<ul style="list-style-type: none"> <li> Understand that materials have both functional properties and aesthetic qualities</li> <li> Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li> Understand and demonstrate how mechanical and electrical systems have an input and output process</li> <li> Know the application of mechanisms to create movement.</li> <li> A good finish so that a user will find it both useful and attractive.</li> <li> Know some designers from history</li> <li> Talk about some of the tools, techniques and design used by the designer</li> </ul>	<ul style="list-style-type: none"> <li> Understand that materials have both functional properties and aesthetic qualities that can support meeting the design criteria</li> <li> Apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products</li> <li> Understand and demonstrate that mechanical and electrical systems have an input, process and output</li> <li> Explain how mechanical systems, such as cams, create movement and use mechanical systems in their products</li> <li> Product are well finished in a way that would appeal to users</li> <li> Know how key events and individuals have influenced the world (in terms of products)</li> <li> Compare and contrast the work of different designers (e.g. historical and modern)</li> </ul>

<b>Cooking and Nutrition</b>	<b>National Curriculum.</b> <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>- Use the basic principles of a healthy and varied diet to prepare dishes</li> <li>- Understand where food comes from</li> </ul>	<b>National Curriculum.</b> <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>- Understand and apply the principles of a healthy and varied diet</li> <li>- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li> <li>- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed</li> </ul>	
	<ul style="list-style-type: none"> <li>🍷 Understand that everyone should eat at least five portions of fruit and vegetables every day and start to explain why;</li> <li>🍷 With help, use knives safely</li> <li>🍷 Use a mixing bowl</li> <li>🍷 Be aware of hygiene for cooking</li> <li>🍷 Know some things are made and some things are natural</li> <li>🍷 Know some things are dangerous to eat raw</li> <li>🍷 Know heat changes food</li> <li>🍷 Use a variety of utensils safely</li> <li>🍷 Know what the food groups are</li> <li>🍷 Know where some foods come from</li> <li>🍷 Be aware there are different ways to cook</li> <li>🍷 Prepare a healthy snack</li> </ul>	<ul style="list-style-type: none"> <li>🍷 Start to know when, where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world</li> <li>🍷 Select ingredients for a product with reasons</li> <li>🍷 understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically</li> <li>🍷 With support, use a heat source to cook ingredients showing awareness of the need to control the temperature of the hob and/or oven</li> <li>🍷 Use a range of techniques such as mashing, whisking, crushing, grating, cutting, kneading and baking</li> <li>🍷 Explain that a healthy diet is made up of a variety and balance of different food and drink, as represented in the Eatwell Guide and be able to apply these principles when planning and cooking dishes</li> <li>🍷 Begin to measure out ingredients, measure and weigh ingredients to the nearest gram and milliliter</li> <li>🍷 Start to independently follow a recipe</li> </ul>	<ul style="list-style-type: none"> <li>🍷 Know, explain and give examples of food that is grown (such as pears, wheat and potatoes), reared (such as poultry and cattle) and caught (such as fish) in the UK, Europe and the wider world</li> <li>🍷 Explain why they have chosen ingredients in a dish with reference to seasonality and food availability</li> <li>🍷 Demonstrate how to prepare and cook a variety of predominantly savoury dishes safely and hygienically</li> <li>🍷 Use an heat source safely with supervision</li> <li>🍷 Demonstrate how to use a range of cooking techniques, such as griddling, grilling, frying and boiling</li> <li>🍷 Explain that foods contain different substances, such as protein, that are needed for health and be able to apply these principles when planning and preparing dishes</li> <li>🍷 Measure accurately and calculate ratios of ingredients to scale up or down from a recipe</li> <li>🍷 Independently follow a recipe</li> </ul>