



# St. Matthew's Primary School

## Design and Technology: Progression of Skills



### Intent

At St. Matthew's we encourage our children to be problem-solvers and innovators. Our Design and technology curriculum provides our pupils with the opportunity to explore a range of relevant and real problems in a variety of contexts in a creative, imaginative and practical way. These skills are applied in a cross-curriculum manner in maths, science, computing and art. Children are introduced to the work of great and notable inventors, designers and architects to help develop knowledge and vocabulary linked to skills. Children are encouraged to evaluate their work independently and collaboratively.

### Implement

To deliver a high-quality Design and Technology curriculum we have high expectations of our pupils, deliver quality planning, and monitoring of the subject through a range of methods such as demonstrations, pupil voice, staff voice and CPD opportunities. We have two projects a year, each project begins with a design brief to give the children purpose and context to their design process.

### Impact

Our children develop problem-solving skills, which they apply throughout their time at St. Matthew's and beyond. The children are provided with the opportunity to celebrate their successes and their peers'.

Please use this as a reference point when planning and teaching units of work. Each project should start with a brief, providing a purpose and an audience for pupils to design and evaluate against. For the design and evaluate process record this at the back of your sketch books. Children should apply art skills learnt previously where applicable.

April 2020; F. Garner

Brief

Research

Design

Make

Evaluate



Design		
	KS1	KS2
<p><b>Understanding purpose, audience, and contexts</b></p>	<p>To design purposeful, functional, appealing products for themselves and other users based on design criteria</p> <ul style="list-style-type: none"> <li>- To use a design brief to develop own product with clear purpose and an intended user</li> </ul>	<p>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</p> <ul style="list-style-type: none"> <li>- To develop own product using a design brief with clear purpose and an intended user</li> <li>- To research products previously made and identify key features.</li> </ul>
<p><b>Generating, developing, modelling and communicating ideas</b></p>	<p>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</p> <ul style="list-style-type: none"> <li>- Go through a process of refining ideas before making the final product</li> </ul>	<p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <ul style="list-style-type: none"> <li>- Make product through developmental stages planning and creating prototypes of sections before making final piece</li> <li>-</li> </ul>
Take inspiration from design throughout history		
	KS1	KS2
<p><b>Evaluate past and present design and technology,</b></p> <p><b>Develop a critical understanding of its impact on daily life and the wider world.</b></p>	<p>To understand the work of a range of artists, craft makers and designers, describing the similarities and differences between different practices and disciplines, and making links to their work.</p> <ul style="list-style-type: none"> <li>- To describe the work of notable designers</li> <li>- Express their opinion</li> <li>- Use to inspire own designs.</li> </ul>	<p><b>LKS2</b></p> <p>To learn about great architects, inventors and designers in history.</p> <ul style="list-style-type: none"> <li>- Reflect upon their work which has been inspired by a famous notable designer giving reasons for their choice.</li> <li>- Develop knowledge on work of famous, notable designers in all areas of design and technology</li> </ul>



		<p><b>UKS2</b> To learn about great inventors, architects and designers in history.</p> <ul style="list-style-type: none"> <li>- Give detailed observations about notable inventors', architect's and designers' work</li> <li>- Offer facts about these notable inventors/architects/designers</li> </ul>
<b>Make</b>		
	<b>KS1</b>	<b>KS2</b>
<b>Planning</b>	<p>Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.</p> <ul style="list-style-type: none"> <li>- Explain choices for materials</li> <li>- Plan by suggesting what to do next</li> </ul>	<p>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</p> <ul style="list-style-type: none"> <li>- Order the sequence of steps in order to make their product</li> <li>- Produce an appropriate list of tools in order to make their product</li> </ul> <p><u>UKS2</u> Create a sequential plan on how to make their product step by step</p>
<b>Preparing materials and developing techniques</b>	<p>Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</p> <ul style="list-style-type: none"> <li>- Begin to develop and select appropriate joining techniques</li> <li>- Demonstrate a range of cutting and shaping techniques (curling, cutting, folding)</li> <li>- Cut materials safely</li> </ul>	<p>Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.</p> <ul style="list-style-type: none"> <li>- Select appropriate joining techniques</li> <li>- Cut materials accurately and safely by using the appropriate tools</li> <li>- Measure and mark out to the nearest millimetre</li> </ul>



	<ul style="list-style-type: none"> <li>- Measure and mark out to the nearest centimetre</li> </ul>	
<b>Technical Knowledge</b>		
	<b>KS1</b>	<b>KS2</b>
<b>Construction</b>	<p>To build structures, exploring how they can be made stronger, stiffer and more stable</p> <ul style="list-style-type: none"> <li>- Use materials to practise making and strengthening products such as drilling, gluing, screwing, nailing.</li> </ul>	<p>To apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <ul style="list-style-type: none"> <li>- Chose appropriate finishing techniques such as sanding, varnishing etc.</li> <li>- Develop a range of practical skills to create products</li> <li>- Choose suitable techniques to create products</li> <li>- Strengthen materials with suitable techniques</li> </ul>
<b>Textiles</b> <b>(See Art and Design progression of Skills for further objectives)</b>	<ul style="list-style-type: none"> <li>- Use materials to make know object for purpose i.e. puppet</li> <li>- Create a template to shape material</li> <li>- Cut and shape fabric using scissors</li> <li>- Use large eyed needles, different thicknesses of thread and different sized running stitches</li> <li>- Start to explore other simple stitches cross stitch, backstitch, overlap stitch</li> <li>- Simple applique work attaching material shapes to fabric with running stitches</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>- Understand the need for a seam allowance</li> <li>- Join textiles with a combination of stitches both new and previously taught</li> <li>- Embellish work using a variety of techniques, including drawing, painting, applique, weaving. Layering and printing on top of textural work.</li> <li>-</li> </ul>



<b>Electrics and electronics</b>		LKS2 To create a circuit (Y4 science curriculum)  UKS2 To understand and use electrical systems in their products for example, series circuits incorporating switches, bulbs, LED lights, buzzers and motors
<b>Mechanics</b>	To explore and use mechanisms in their products. <ul style="list-style-type: none"><li>- Create products using levers, sliders, wheels and axles</li></ul>	To understand and use mechanical systems in their products LKS2 Create products using gears, pulleys, cams, levers and linkage  UKS2 Use combinations of electronics and mechanics to design a product.
<b>Computing</b> <b>(Linked to computing curriculum)</b>		Apply their understanding of computing to program, monitor and control their products. <ul style="list-style-type: none"><li>- Use software to design and represent products</li><li>- Explore the use of code to control a model or product</li></ul>



<b>Cooking and Nutrition</b>		
	<b>KS1</b>	<b>KS2</b>
<b>Where food comes from</b>	Understand where food comes from.	Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.
<b>Food Preparation and nutrition</b>	<p>Use the basic principles of a healthy and varied diet to prepare dishes</p> <ul style="list-style-type: none"> <li>- Cut, peel or grate ingredients hygienically.</li> <li>- Measure or weigh out ingredients</li> <li>- Assemble or cook ingredients</li> </ul>	<p>Understand and apply the principles of a healthy and varied diet</p> <p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</p> <ul style="list-style-type: none"> <li>- Understand the importance of correct storage for preservation</li> <li>- Measure accurately and calculate adjustments that may be necessary to a recipe (scaling up or down)</li> <li>- Demonstrate a range of cooking and baking techniques</li> <li>- Create recipes for a specific purpose</li> </ul>
<b>Evaluate and Improve</b>		
	<b>KS1</b>	<b>KS2</b>
<b>Evaluate other products to support plan</b>	<p>Explore and evaluate a range of existing products</p> <p>Evaluate their ideas and products against design criteria</p> <ul style="list-style-type: none"> <li>- Explore how pre-existing products have been created</li> </ul>	<p>Investigate and analyse a range of existing products</p> <ul style="list-style-type: none"> <li>- Disassemble products to know how they work.</li> </ul>
<b>Evaluate own product and offer improvements</b>		Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.



Key Vocabulary		
	KS1	KS2
	safety, design, templates, function, size, product, evaluate, brief, planning, natural, manmade, tools, thread, needle, measurement, cutting, marking	investigate, annotated sketches, cross-sectional, exploded diagrams, prototypes, pattern pieces, computer-aided design, functional, audience, circuits, coding, aesthetics, environment, safety, size function, assemble, accuracy