



# St Paul's CE Primary School

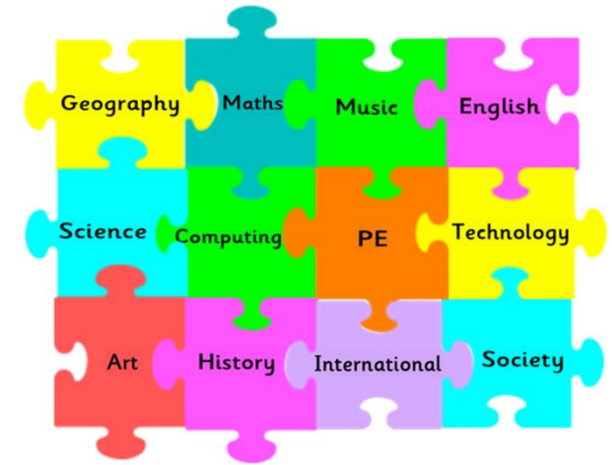
## Technology



Curriculum Progression Map for knowledge, skills and understanding

# (1 Year Cycle)

The units are organised around a theme, which helps the children to see how subjects are both 'independent' and 'interdependent' enabling them to see 'the big picture' of their learning, make connections through and across different subjects, and talk about a theme from multiple perspectives.



The three types of learning that are taught as part of the curriculum include: **knowledge, skills and understanding**. Across school there are visual representations for knowledge, skill and understanding as well as definitions.



Knowledge is something that we know is a fact. It is true. Knowledge is always right or wrong.



A skill is something you learn at any age and with practice you will get better.



To develop understanding, connections have to be made in order to make meaning.

At St Paul's we encourage our children to develop and master a range of knowledge, skills and understanding in all areas of the curriculum. As a whole school community, we have devised a range of subject characters and knowledge, skills and understanding principles that are specific to each area of the curriculum, to enable the children to identify not only the subject they are learning but also the content. The characters were shared with the children and they generated a list of knowledge, skills and understanding for each area.

### **In Technology, when the children are being designers they:**

design purposeful products based on a design criteria

use a range of tools and materials to make products

evaluate products against design criterion

understand how key events in technology have impacted on the world in which we live

explain and reason about design choices and suggest ways to improve their own products



use computer programmes to control their products

know where food comes from and the principles of being healthy

investigate and analyse a range of products

design, prepare and make food dishes

explore and use mechanisms and electrical systems in the products they produce

make suggestions on how to improve products made by others

	In Early Years Technology coverage will include:	Key Vocabulary
<b>Early Years</b>		

	Milepost 1	Milepost 2 and 3
National Curriculum	<p>Schools are not required by law to teach the example content in [square brackets].</p> <p><b>Key stage 1</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. 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].</p> <p>When designing and making, pupils should be taught to:</p> <p><b>Design</b></p> <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, where appropriate, information and communication technology</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> <li>select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>explore and evaluate a range of existing products</li> <li>evaluate their ideas and products against design criteria</li> </ul> <p><b>Technical knowledge</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 [for example, levers, sliders, wheels and axles], in their products.</li> </ul> <p><b>Cooking and nutrition</b></p> <p>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.</p> <p>Pupils should be taught to:</p> <p><b>Key stage 1</b></p> <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>	<p>Schools are not required by law to teach the example content in [square brackets].</p> <p><b>Key stage 2</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. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].</p> <p>When designing and making, pupils should be taught to:</p> <p><b>Design</b></p> <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> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>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> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>investigate and analyse a range of existing products</li> <li>evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>understand how key events and individuals in design and technology have helped shape the world</li> </ul> <p><b>Technical knowledge</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]</li> <li>understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> <li>apply their understanding of computing to program, monitor and control their products.</li> </ul> <p><b>Cooking and nutrition</b></p> <p>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.</p> <p><b>Key stage 2</b></p> <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>

<h1 style="writing-mode: vertical-rl; transform: rotate(180deg);">IPC Units</h1>	<p>The Magic Toymaker</p> <ul style="list-style-type: none"> <li>• 'Magic' toys that fool our eyes</li> <li>• How to design and make our own board game</li> </ul> <p>Super Humans (science)</p> <ul style="list-style-type: none"> <li>• How to plan and prepare a healthy meal or snack</li> </ul> <p>Time Travellers</p> <ul style="list-style-type: none"> <li>• Recreating nostalgic flavours</li> </ul> <p>The Earth: Our Home (Science)</p> <ul style="list-style-type: none"> <li>• How to make a nesting box for bees</li> </ul> <p>Hooray! Let's go on Holiday</p> <ul style="list-style-type: none"> <li>• How to apply what we have learned about transport to plan and make our own vehicle</li> <li>• How to test our vehicles to see how well they work</li> </ul> <p>Brainwave</p> <ul style="list-style-type: none"> <li>• Connecting learning between subjects</li> <li>• Designing physical challenges</li> </ul> <p>From A to B</p> <ul style="list-style-type: none"> <li>• How to apply what we have learned about transport to plan and make our own vehicle</li> <li>• How to test our vehicles to see how well they work</li> </ul> <p>What's It Made Of? (Science)</p> <ul style="list-style-type: none"> <li>• Where materials come from</li> <li>• How different materials are converted into products</li> </ul> <p>Live and Let Live</p> <ul style="list-style-type: none"> <li>• How to design and make a birdfeeder</li> </ul> <p>Treasure Island</p> <ul style="list-style-type: none"> <li>• Making our own toy compass</li> <li>• Designing and creating a treasure chest</li> </ul> <p>We Are What We Eat</p> <ul style="list-style-type: none"> <li>• How to plan, make and evaluate a healthy pizza</li> <li>• How to make a box for a pizza</li> <li>• How to use feedback to improve a product</li> </ul>	<p>Feel the Force Y3</p> <ul style="list-style-type: none"> <li>• Designing and making a marble run with a variety of elements.</li> </ul> <p>Vanishing Rainforests Y3</p> <ul style="list-style-type: none"> <li>• How to design a mask to represent an animal</li> <li>• Making a mask secure enough to wear for a dance.</li> </ul> <p>Let's Plant it! Y3</p> <ul style="list-style-type: none"> <li>• Making containers for plants to grow in</li> <li>• Decorating plant pots to be useful and attractive</li> </ul> <p>What's on the menu? Y3 (This to be a condensed unit to cover the Cooking and Nutrition element of the NC)</p> <ul style="list-style-type: none"> <li>• Presenting food in appealing ways</li> <li>• Sustainable fast-food packaging</li> <li>• Making a tasty and appealing dish.</li> </ul> <p>Bright Sparks Y4</p> <ul style="list-style-type: none"> <li>• How to make a model with light and sound.</li> </ul> <p>Shake It Y4</p> <ul style="list-style-type: none"> <li>• The different types of milk packaging</li> <li>• Designing our own milkshake brand and packaging.</li> </ul>	<p>The Holiday Show Y5</p> <ul style="list-style-type: none"> <li>• A strategy to evaluate materials used to market holidays</li> <li>• How to create our own marketing materials to sell a holiday</li> <li>• Addressing a specific customer through marketing.</li> </ul> <p>Fascinating Forces Y5</p> <ul style="list-style-type: none"> <li>• Different ways to power a model boat</li> <li>• Trial and error as an approach to learning.</li> </ul> <p>Space Scientists Y5</p> <ul style="list-style-type: none"> <li>• Applying inventions from space travel to our everyday lives.</li> </ul> <p>Weather and Climate Y5</p> <ul style="list-style-type: none"> <li>• Building an anemometers</li> <li>• Making a working weather vane</li> <li>• Designing and building upcycled wind chimes</li> <li>• Building a working barometer.</li> </ul> <p>Bake it! Y5</p> <ul style="list-style-type: none"> <li>• How to bake bread</li> <li>• Creating recipes and instructions.</li> </ul> <p>Full Power Y6</p> <ul style="list-style-type: none"> <li>• Making games from circuits</li> <li>• Combining circuits to make a dashboard toy.</li> </ul> <p>Look Hear Y6</p> <ul style="list-style-type: none"> <li>• Using elastic bands to make a pitched instrument.</li> </ul> <p>Going Global Y6</p> <ul style="list-style-type: none"> <li>• Designing a logo and branding.</li> </ul> <p>Existing... endanger... extinct Y6</p> <ul style="list-style-type: none"> <li>• How medical technology is helping humans</li> <li>• Designing and making limbs that move.</li> </ul>
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Strand	Milepost 1	Milepost 2	Milepost 3	IMYC
Research, imagine and innovate	<b>1.01</b> Know that design is driven by a purpose	<b>2.01</b> Know that designs should consider aesthetics and function	<b>3.01</b> Know that there can be a tension between aesthetics and function and both should be considered in the design process	<b>4.01</b> Know that design should be a continuous iterative process that incorporates the aesthetics and function of a final product
	<b>1.02</b> Be able to define a main need of a context/situation	<b>2.02</b> Be able to define the criteria that would meet the needs of a context/situation	<b>3.02</b> Be able to define the criteria that would meet the needs and wants of a client or context/situation	<b>4.02</b> Be able to define and prioritise the specification criteria that would meet the needs, wants and values of a client or context/situation
	<b>1.03</b> Be able to generate a design	<b>2.03</b> Be able to generate more than one design	<b>3.03</b> Be able to generate a range of designs including component parts	<b>4.03</b> Be able to rapidly generate a wide range of ideas using a variety of media
	<b>1.04</b> Be able to articulate how their design meets the identified need	<b>2.04</b> Be able to articulate how each design meets the identified needs	<b>3.04</b> Be able to rank ideas according to how well they meet the identified needs and wants	<b>4.04</b> Be able to compare ideas to specification criteria to select designs for further development
	<b>1.05</b> Be able to explore ways of constructing parts of a design	<b>2.05</b> Be able to use modelling and testing to explore parts of a design	<b>3.05</b> Be able to use modelling and testing to improve design	<b>4.05</b> Be able to use the ongoing process of modelling and testing to refine and possibly combine ideas
	<b>1.06</b> Be able to produce a final design proposal	<b>2.06</b> Be able to produce a final design proposal identifying appropriate materials	<b>3.06</b> Be able to produce a final design proposal identifying appropriate materials and tools needed	<b>4.06</b> Be able to produce a final design proposal, justifying how it meets the specification criteria

Strand	Milepost 1	Milepost 2	Milepost 3	IMYC
Plan, build, test	<b>1.07</b> Be able to list materials and tools needed for production	<b>2.07</b> Be able to list materials, tools and techniques needed for production	<b>3.07</b> Be able to produce a step by step plan for production	<b>4.07</b> Be able to produce a plan for manufacture that allows for quality control measures during the manufacturing process
	<b>1.08</b> Be able to use tools and techniques following guidance from an adult	<b>2.08</b> Be able to use appropriate tools and techniques independently	<b>3.08</b> Be able to select appropriate tools and techniques to make a product	<b>4.08</b> Be able to select appropriate tools, techniques and processes and use them independently to achieve the outcomes required by the specification
	<b>1.09</b> Know the risks to self and others when using tools	<b>2.09</b> Know how to avoid the risks associated with using tools and sharing spaces	<b>3.09</b> Know how to avoid and reduce risks associated with using tools and sharing spaces	<b>4.09</b> Know how to avoid, reduce and respond to risks associated with using tools and sharing spaces
Test and evaluate	<b>1.10</b> Be able to compare their design and product explaining any differences	<b>2.10</b> Be able to compare their design and product explaining any differences and suggesting improvements	<b>3.10</b> Be able to evaluate the success of a product against its original design and suggest improvements	<b>4.10</b> Be able to evaluate the success of a product against the needs, wants and values of its client or context/situation and suggest opportunities for further development



Strand	Milepost 1	Milepost 2	Milepost 3	IMYC
Technology and society	<b>1.11</b> Understand that the design of products is impacted by material availability	<b>2.11</b> Understand that designers have a responsibility to consider issues of waste when designing products	<b>3.11</b> Understand that the design of products is impacted by issues of sustainability	<b>4.11</b> Understand that designers have a responsibility to consider issues of sustainability when designing products
	1.12	2.12	3.12	<b>4.12</b> Understand the role of cultures, styles and trends in design
	<b>1.13</b> Be able to design products, taking inspiration from another source	<b>2.13</b> Be able to adapt and/or combine others' products for a new creation	<b>3.13</b> Be able to design products taking inspiration from many different sources	<b>4.13</b> Be able to design products taking inspiration from many different sources while maintaining an awareness of copyright, patents and trademarks
	1.14	2.14	3.14	<b>4.14</b> Know that technological advancements provide opportunities for innovation
Food technology and nutrition	<b>1.15</b> Be able to combine ingredients to make a food item	<b>2.15</b> Be able to design, make and test combinations of food items	<b>3.15</b> Be able to make a dish considering taste, nutrition and aesthetics	<b>4.15</b> Be able to design and create a dish which meets criteria such as seasonality, sustainability, dietary or cultural requirements

I couldn't find evidence of these aspects of the curriculum

Food: To understand where food comes from (KS1)

Food: To prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques (KS2).

'What's on the menu?' is a condensed unit to cover the Cooking and Nutrition element of the NC, however the goal is to make 'a tasty dish' as opposed to a variety of dishes. No more cooking (other than baking bread in Y5 Bake it!).

