



# DESIGN AND TECHNOLOGY SUBJECT LADDER



<b>NURSERY</b>	
<b>Personal, Social and Emotional Development</b>	<ul style="list-style-type: none"> <li>- Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.</li> </ul>
<b>Physical Development</b>	<ul style="list-style-type: none"> <li>- Use large-muscle movements to wave flags and streamers, paint and make marks.</li> <li>- Choose the right resources to carry out their own plan.</li> <li>- Use one-handed tools and equipment, for example, making snips in paper with scissors.</li> </ul>
<b>Understanding the World</b>	<ul style="list-style-type: none"> <li>- Explore how things work.</li> </ul>
<b>Expressive Arts and Design</b>	<ul style="list-style-type: none"> <li>- Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.</li> <li>- Explore different materials freely, in order to develop their ideas about how to use them and what to make.</li> <li>- Develop their own ideas and then decide which materials to use to express them.</li> <li>- Create closed shapes with continuous lines and begin to use these shapes to represent objects.</li> </ul>
<b>RECEPTION</b>	
<b>Physical Development</b>	<p>Progress towards a more fluent style of moving, with developing control and grace.</p> <p>Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</p> <p>Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.</p>
<b>Expressive Arts and Design</b>	<p>Explore, use and refine a variety of artistic effects to express their ideas and feelings.</p> <p>Return to and build on their previous learning, refining ideas and developing their ability to represent them.</p> <p>Create collaboratively, sharing ideas, resources and skills.</p>
<b>YEAR 1</b>	
<b>Design</b>	<p>Use a criteria to draw and plan a purposeful, functional, appealing product.</p> <p>Generate and talk about their own ideas.</p>
<b>Make</b>	<p>Draw around and cut out templates.</p> <p>Select from a range of joining methods (gluing, sticking, stapling)</p> <p>Select from a range of construction materials (cardboard, paper, newspaper, card, fabric)</p> <p>Select from a range of finishing methods (paint, coloured pencils, collage)</p>
<b>Evaluate</b>	<p>Look at existing products.</p> <p>Use speaking frames to evaluate the finished product (what do you like, what would you change)</p>

<b>Technical knowledge</b>	<p>Build structures, exploring how they can be made stronger, stiffer and more stable.</p> <p>Use glue sticks, PVA, sticky tape, masking tape and staples appropriately.</p> <p>Choose and use scissors appropriately (left or right-handed, holding paper and scissors properly)</p> <p>Cut along a straight line, around curves and into corners.</p>
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<b>Cooking</b>	<p>Understand where food comes from.</p> <p>Use the basic principles of a healthy and varied diet to prepare dishes (Toast)</p> <p>Making Toast:          Choosing bread and condiments.          Toasting bread in a toaster safely.          Spreading condiments with a knife.          Cutting toast into sections.          Taste and evaluate.</p>
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**YEAR 2**

<b>Design</b>	<p>Use a criteria to draw and plan a purposeful, functional, appealing product.</p> <p>Design purposeful, functional, appealing products for themselves and other users based on design criteria</p> <p>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.</p>
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<b>Make</b>	<p>Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</p> <p>Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</p>
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<b>Evaluate</b>	<p>Explore and evaluate a range of existing products</p> <p>Evaluate their ideas and products against design criteria</p>
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<b>Technical knowledge</b>	<p>Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</p>
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<b>Cooking</b>	<p>Use the basic principles of a healthy and varied diet to prepare dishes.</p>
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**YEAR 3**

<b>Design</b>	<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> <p>Generate, develop, model and communicate their ideas through discussion and annotated sketches.</p>
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<b>Make</b>	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 and ingredients, according to their functional properties and aesthetic qualities.
<b>Evaluate</b>	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.
<b>Technical knowledge</b>	Apply their understanding of how to strengthen, stiffen and reinforce more complex Structures.
	Understand and use mechanical systems in their products [levers and linkages]
	Apply their understanding of computing to program, monitor and control their products.

<b>Cooking</b>	Understand and apply the principles of a healthy and varied diet (link to Science)
	Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques (Greek Salad- chopping, grating, peeling)

#### YEAR 4

<b>Design</b>	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, pattern pieces and computer-aided design.
<b>Make</b>	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.
<b>Evaluate</b>	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
<b>Technical knowledge</b>	Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
<b>Cooking</b>	Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques (Bread-kneading, baking)

#### YEAR 5

<b>Design</b>	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, prototypes and computer-aided design.

<b>Make</b>	<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> <p>Select from and use a wider range of materials and components, including construction materials and ingredients, according to their functional properties and aesthetic qualities.</p>
<b>Evaluate</b>	<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>
<b>Technical knowledge</b>	<p>Apply their understanding of how to strengthen, stiffen and reinforce more complex Structures.</p> <p>Understand and use mechanical systems in their products [gears, pulleys]</p>
<b>Cooking</b>	<p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques (Chilli- boiling, frying)</p> <p>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>
<b>YEAR 6</b>	
<b>Design</b>	<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>
	<p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and computer-aided design.</p>
<b>Make</b>	<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> <p>Select from and use a wider range of materials and components, including construction materials and ingredients, according to their functional properties and aesthetic qualities.</p>
<b>Evaluate</b>	<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>
<b>Technical knowledge</b>	<p>Apply their understanding of how to strengthen, stiffen and reinforce more complex Structures.</p> <p>Understand and use mechanical systems in their products [linkages and cams]</p>
<b>Cooking</b>	<p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.</p>