

## Design and Technology Progression of Skills

Designing		KS1	KS2
<b>Understanding contexts, users and purposes</b>	<ul style="list-style-type: none"> <li>Select appropriate resources</li> <li>Use gestures, talking and arrangements of materials and components to show design</li> <li>Use contexts set by the teacher and myself</li> <li>Use language of designing and making (join, build, shape, longer, shorter, heavier etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment</li> <li>state what products they are designing and making</li> <li>Say whether their products are for themselves or other users</li> <li>describe what their products are for</li> <li>say how their products will work</li> <li>say how they will make their products suitable for their intended users</li> <li>use simple design criteria to help develop their ideas</li> </ul>	<ul style="list-style-type: none"> <li>work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment</li> <li>describe the purpose of their product</li> <li>indicate the design features of their products that will appeal to intended users</li> <li>explain how particular parts of their products work</li> <li>gather information about the needs and wants of particular individuals and groups</li> <li>develop their own design criteria and use these to inform their ideas</li> <li>carry out research, using surveys, interviews, questionnaires and web-based resources</li> <li>identify the needs, wants, preferences and values of particular individuals and groups</li> <li>develop a simple design specification to guide their thinking</li> </ul>
<b>Generating, developing, modelling and communicating ideas</b>	<ul style="list-style-type: none"> <li>Talk about examples or products with others.</li> <li>Talk about how the product is made</li> <li>Talk about their choices for their own products.</li> </ul>	<ul style="list-style-type: none"> <li>generate ideas by drawing on their own experiences</li> <li>use knowledge of existing products to help come up with ideas</li> <li>develop and communicate ideas by talking and drawing</li> <li>model ideas by exploring materials, components and construction kits and by making templates and mock-ups</li> <li>use information and communication technology, where appropriate, to develop and communicate their ideas</li> </ul>	<ul style="list-style-type: none"> <li>share and clarify ideas through discussion</li> <li>model their ideas using prototypes and pattern pieces</li> <li>use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas</li> <li>use computer-aided design to develop and communicate their ideas</li> <li>generate realistic ideas, focusing on the needs of the user</li> <li>make design decisions that take account of the availability of resources</li> <li>generate innovative ideas, drawing on research</li> <li>make design decisions, taking account of constraints such as time, resources and cost</li> </ul>
Making		KS1	KS2
Planning	<ul style="list-style-type: none"> <li>Construct with a purpose, using a variety of resources</li> <li>Use simple tools and techniques</li> <li>Build / construct with a wide range of objects</li> <li>Select tools &amp; techniques to shape, assemble and join</li> <li>Replicate structures with materials / components</li> <li>Discuss how to make an activity safe and hygienic</li> <li>Record experiences by drawing, writing, voice recording</li> </ul>	<ul style="list-style-type: none"> <li>plan by suggesting what to do next</li> <li>select from a range of tools and equipment, explaining their choices</li> <li>select from a range of materials and components according to their characteristics</li> </ul>	<ul style="list-style-type: none"> <li>select tools and equipment suitable for the task</li> <li>explain their choice of tools and equipment in relation to the skills and techniques they will be using</li> <li>select materials and components suitable for the task</li> <li>explain their choice of materials and components according to functional properties and aesthetic qualities</li> <li>order the main stages of making</li> <li>produce appropriate lists of tools, equipment and materials that they need</li> </ul>

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	<ul style="list-style-type: none"> <li>Understand different media can be combined for a purpose</li> </ul>		<ul style="list-style-type: none"> <li>formulate step-by-step plans as a guide to making</li> </ul>
Practical skills and techniques	<ul style="list-style-type: none"> <li>Choose from materials provided</li> <li>Use glue sticks and PVA to join materials</li> <li>Choose ways to decorate and finish the product.</li> </ul>	<ul style="list-style-type: none"> <li>follow procedures for safety and hygiene • use a range of materials and components,</li> <li>including construction materials and kits, textiles, food ingredients and mechanical components</li> <li>measure, mark out, cut and shape materials and components</li> <li>assemble, join and combine materials and components</li> <li>use finishing techniques, including those from art and design</li> </ul>	<ul style="list-style-type: none"> <li>follow procedures for safety and hygiene</li> <li>use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</li> <li>measure, mark out, cut and shape materials and components with some accuracy</li> <li>assemble, join and combine materials and components with some accuracy</li> <li>apply a range of finishing techniques, including those from art and design, with some accuracy</li> <li>accurately measure, mark out, cut and shape materials and components</li> <li>accurately assemble, join and combine materials and components</li> <li>accurately apply a range of finishing techniques, including those from art and design</li> <li>use techniques that involve a number of steps</li> <li>demonstrate resourcefulness when tackling practical problems</li> </ul>
<b>Evaluating</b>		<b>KS1</b>	<b>KS2</b>
<b>Own ideas and products</b>	<ul style="list-style-type: none"> <li>Talk about what they like/dislike about their product</li> <li>Share ways in which they would change it the next time</li> <li>Be given opportunities to do the activity again and make changes/learn from experiences.</li> </ul>	<ul style="list-style-type: none"> <li>talk about their design ideas and what they are making</li> <li>make simple judgements about their products and ideas against design criteria</li> <li>suggest how their products could be improved</li> </ul>	<ul style="list-style-type: none"> <li>identify the strengths and areas for development in their ideas and products • consider the views of others, including intended users, to improve their work</li> <li>refer to their design criteria as they design and make</li> <li>use their design criteria to evaluate their completed products</li> <li>critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make</li> <li>evaluate their ideas and products against their original design specification.</li> </ul>
Existing Products	<ul style="list-style-type: none"> <li>Adapt work if necessary</li> <li>Dismantle, examine, talk about existing objects/structures</li> <li>Consider and manage some risks</li> <li>Practise some appropriate safety measures independently</li> <li>Talk about how things work</li> </ul>	investigate and analyse: <ul style="list-style-type: none"> <li>what products are</li> <li>who products are for</li> <li>what products are for</li> <li>how products work</li> </ul>	investigate and analyse: <ul style="list-style-type: none"> <li>how well products have been designed</li> <li>how well products have been made</li> <li>why materials have been chosen</li> </ul>

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	<ul style="list-style-type: none"> <li>Look at similarities and differences between existing objects / materials / tools</li> <li>Show an interest in technological toys</li> <li>Describe textures</li> </ul>	<ul style="list-style-type: none"> <li>how products are used</li> <li>where products might be used</li> <li>what materials products are made from</li> <li>what they like and dislike about products</li> </ul>	<ul style="list-style-type: none"> <li>what methods of construction have been used</li> <li>how well products work</li> <li>how well products achieve their purposes</li> <li>how well products meet user needs and wants</li> <li>who designed and made the products</li> <li>where products were designed and made</li> <li>when products were designed and made</li> <li>whether products can be recycled or reused</li> <li>how much products cost to make how innovative products are</li> <li>how sustainable the materials in products are</li> <li>what impact products have beyond their intended purpose</li> </ul>
Key events and individuals		Not a requirement in KS1	Pupil's lean: <ul style="list-style-type: none"> <li>about inventors, designers, engineers, chefs and manufacturers who have developed ground- breaking products</li> </ul>
<b>Technical Knowledge</b>		<b>KS1</b>	<b>KS2</b>
		Pupils should know: <ul style="list-style-type: none"> <li>about the simple working characteristics of materials and components</li> <li>about the movement of simple mechanisms such as levers, sliders, wheels and axles</li> <li>how freestanding structures can be made stronger, stiffer and more stable</li> <li>that a 3-D textiles product can be assembled from two identical fabric shapes</li> <li>that food ingredients should be combined according to their sensory characteristics</li> <li>the correct technical vocabulary for the projects they are undertaking</li> </ul>	Pupils should know: <ul style="list-style-type: none"> <li>how to use learning from science to help design and make products that work how to use learning from mathematics to help design and make products that work that materials have both functional properties and aesthetic qualities</li> <li>that materials can be combined and mixed to create more useful characteristics</li> <li>that mechanical and electrical systems have an input, process and output</li> <li>the correct technical vocabulary for the projects they are undertaking</li> <li>mechanical systems such as levers and linkages or pneumatic systems create movement</li> <li>how simple electrical circuits and components can be used to create functional products</li> <li>how to program a computer to control their products</li> <li>how to make strong, stiff shell structures</li> <li>that a single fabric shape can be used to make a 3D textiles product</li> </ul>

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			<ul style="list-style-type: none"> <li>that food ingredients can be fresh, pre-cooked and processed</li> <li>how mechanical systems such as cams or pulleys or gears create movement</li> <li>how more complex electrical circuits and components can be used to create functional products</li> <li>how to program a computer to monitor changes in the environment and control their products</li> <li>how to reinforce and strengthen a 3D framework</li> <li>that a 3D textiles product can be made from a combination of fabric shapes</li> <li>that a recipe can be adapted by adding or substituting one or more ingredients</li> </ul>
<b>Cooking and nutrition</b>		<b>KS1</b>	<b>KS2</b>
<b>Where food comes from</b>	<ul style="list-style-type: none"> <li>Begin to understand some food preparation tools, techniques and processes</li> <li>Practise stirring, mixing, pouring, blending</li> <li>Discuss how to make an activity safe and hygienic</li> <li>Discuss use of senses</li> <li>Understand need for variety in food</li> <li>Begin to understand that eating well contributes to good health</li> </ul>	<p>Pupils should know:</p> <ul style="list-style-type: none"> <li>that all food comes from plants or animals</li> <li>that food has to be farmed, grown elsewhere (e.g. home) or caught</li> </ul>	<p>Pupils should know:</p> <ul style="list-style-type: none"> <li>that a recipe can be adapted a by adding or substituting one or more ingredients</li> <li>that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world</li> <li>that seasons may affect the food available</li> <li>how food is processed into ingredients that can be eaten or used in cooking</li> </ul>
<b>Food preparation, cooking and nutrition</b>	<ul style="list-style-type: none"> <li>Practise stirring, mixing, pouring and blending ingredients during cookery activities. Handle equipment and tools effectively.</li> </ul>	<p>Pupils should know:</p> <ul style="list-style-type: none"> <li>how to name and sort foods into the five groups in the Eatwell Guide</li> <li>that everyone should eat at least five portions of fruit and vegetables every day</li> <li>how to prepare simple dishes safely and hygienically, without using a heat source</li> <li>how to use techniques such as cutting, peeling and grating</li> </ul>	<p>Pupils should know:</p> <ul style="list-style-type: none"> <li>how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</li> <li>how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</li> <li>that a healthy diet is made up from a variety and balance of different food and drink, as depicted in the Eatwell Guide</li> <li>that to be active and healthy, food and drink are needed to provide energy for the body</li> </ul>

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			<ul style="list-style-type: none"><li>• that recipes can be adapted to change the appearance, taste, texture and aroma</li><li>• that different food and drink contain different substances – nutrients, water and fibre – that are needed for health</li></ul>
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