



Progression Map: Design and Technology



KS2	Year 3	Year 4	Year 5	Year 6
<p>Design</p> <ul style="list-style-type: none"> 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>Research existing items to inform the design of functional, appealing products that are fit for purpose, aimed at particular individuals.</p>	<p>Use research and develop simple design criteria to inform the design of functional, appealing products that are fit for purpose, aimed at a focus group. (Develop a questionnaire as a class for research purposes)</p>	<p>Use research and develop set design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups (Develop a questionnaire independently for research purposes using set design criteria)</p>	<p>Use a range of research and develop own design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups (Develop a questionnaire independently for research purposes using own design criteria)</p>
<ul style="list-style-type: none"> Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design 	<p>Generate, develop, model and communicate their ideas through discussion and annotated sketches.</p>	<p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, prototypes and simple pattern pieces.</p>	<p>Generate, develop, model and communicate their ideas through discussion, detailed annotated sketches, cross-sectional, prototypes, pattern pieces and simple computer-aided design.</p>	<p>Generate, develop, model and communicate their ideas through discussion, detailed annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces & computer-aided design</p>
<p>Make</p> <ul style="list-style-type: none"> Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. <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>	<p>Select suitable tools/equipment, explain choices; Begin to use them accurately.</p> <p>Begin to measure, mark out, cut and shape materials/components with some accuracy.</p> <p>Select appropriate materials, fit for purpose.</p> <p>Begin to assemble, join and combine materials and components with some accuracy.</p>	<p>Select a wider range of suitable tools and equipment, use correct vocabulary to name and describe them and use accurately and safely.</p> <p>Measure, mark out, cut and shape materials/components with greater accuracy in temporary and permanent ways.</p> <p>Select appropriate materials, fit for purpose; explain choices.</p> <p>Assemble, join and combine materials and components exploring how they can be made stronger, stiffer and more stable.</p>	<p>Select and explain their choice of tools and equipment in relation to the skills and techniques they will be using.</p> <p>With a good level of precision accurately measure, mark out, cut and shape materials/components in temporary and permanent ways and explain why.</p> <p>Select appropriate materials, fit for purpose; explain choices, considering functionality and their aesthetic qualities.</p> <p>Assemble, join and combine materials and components exploring how they can be made stronger, stiffer and more stable.</p>	<p>Confidently select appropriate tools, materials, components and techniques and use them safely and accurately while considering constraints</p> <p>Confidently and accurately measure, mark out, cut and shape materials/components in temporary and permanent ways, demonstrating when they make modifications as they go along.</p> <p>Select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics with the aim of achieving a high quality product.</p>

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	<p>Begin to apply a range of finishing techniques with some accuracy</p> <p>Begin to make their design using appropriate techniques.</p> <p>Start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work.</p>	<p>Begin to use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.</p>	<p>Demonstrate the best way to assemble, join and combine materials/components equipment safely and accurately with growing confidence to ensure a good-quality finish to the product.</p>	<p>Choose the best way to assemble, join and combine materials /components and give reasons why</p> <p>Confidently use a range of finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT and be able to explain the choices they have made.</p>
<p>Evaluate</p> <ul style="list-style-type: none"> investigate and analyse a range of existing products 	<p>Investigate and analyse a range of existing products</p> <p>Investigate how appealing, purposeful and effective the product is.</p> <p>Begin to disassemble and evaluate familiar products and consider the views of others to improve them</p>	<p>investigate and analyse a range of existing products</p> <p>Analysing how effective the product is in relation to its brief.</p> <p>Be able to disassemble and evaluate familiar products and consider the views of others to improve them.</p>	<p>investigate and analyse a range of existing products</p> <p>Investigating the construction and mechanisms of the product e.g. how the shape of the cam effects the movement of the toy</p>	<p>investigate and analyse a range of existing products</p> <p>Analysing the construction and mechanisms in relation to their impact on the product e.g. the directional and consequential movements of the axle</p>
	<ul style="list-style-type: none"> evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 	<p>Start to evaluate their product against original design criteria e.g. how well it meets its intended Purpose.</p>	<p>Evaluate their products/design against class-generated criteria.</p> <p>Begin to Evaluate their products carrying out appropriate tests.</p> <p>Start to evaluate their work both during and at the end of the project.</p>	<p>Evaluate their products/design against the both their view and the views of others.</p> <p>Start to evaluate a product against the original design specification and by carrying out tests.</p> <p>Evaluate their work both during and at the end of the project.</p>

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<ul style="list-style-type: none"> understand how key events and individuals in design and technology have helped shape the world 	Children consider different products related to their design brief.	Children study the development of a product over time (e.g. electric torch) and a famous inventor related to their project e.g. Thomas Edison – light bulb.	Children conduct their own research into a designer or inventor linked to their topic and how they used their technical knowledge to solve a design problem.	Children conduct their own research and learn about significant people linked to the design and making of their topic to help inspire their final product.
<p>Technical knowledge</p> <ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures 	Evaluate the key designs of individuals in design and technology has helped shape the world.	Evaluate the key designs of individuals in design and technology has helped shape the world.	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures within a mechanical system.	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures within a fairground context.
<ul style="list-style-type: none"> understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] 			Understand and use mechanical systems in their products [for example gears, pulleys, cams, levers and linkage]. Topic: Moving toys	
<ul style="list-style-type: none"> understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] 		Understand and use electrical systems in their products [for example, simple circuits incorporating switches, bulbs, buzzers] Burglar alarms		Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] Fairground topic
<ul style="list-style-type: none"> apply their understanding of computing to program, monitor and control their products. 	Designing an accurate net for packaging, including text and graphics using Microsoft Word		Using simulation software to model and assemble the parts of a construction kit by clicking, dragging, arranging and re-arranging components on the computer screen	CAD (computer aided design) Using pattern making software to print out and mock-up the parts for a textiles product e.g. bag
<p>Cooking and nutrition</p> <ul style="list-style-type: none"> understand and apply the principles of a healthy and varied diet 	Understanding that there are different food groups	Explore the word DIET . Understand that different food groups are essential, including FATS – but in moderation.	Consider a varied diet and link to the food they make.	Apply the principles of a healthy and varied diet to the design and creation of their meal.
			Meal for the homeless.	

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<ul style="list-style-type: none"> Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques 	Pasta/potato salad – boil , chop, peel and grate . Preparation before making – washing hands (hygiene) and wiping down the worktops (surfaces). Learning how to use a can opener.	Cakes – cupcakes, biscuits. Whisk, sieve, rolling, knead, Preparation before making – washing hands (hygiene) and wiping down the worktops (surfaces).	Bread and soup. Boil, chop, peel and grate, sieve, rolling and knead. Consider the aesthetics of the bread. Preparation before making – washing hands (hygiene) and wiping down the worktops (surfaces).	Fajita – beef, chicken and Quorn (meat substitute). Chop, peel and grate . Preparation before making – washing hands (hygiene) and wiping down the worktops (surfaces). Washing, cutting, slicing, chopping, frying and <i>finally</i> assembling the final product.
<ul style="list-style-type: none"> Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. 	Look at the seasonal foods in the UK. What vegetables/fruits are more prominent? Ethical fish farming.	With a chosen/given fruit/produce, follow the journey/process from field to fork, including international produce.	Link to Harvest. Ingredients of soup/bread – how are they harvested? Invite a <i>farmer</i> into school.	Meat. Compare battery chickens to free-range/organic chickens. Reared animals – ethical.