

## Design and Technology Progression Map

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>DESIGNING</b>							
<b>1</b>	Have a purpose in mind before planning & modelling.  Look at ideas to inspire own plans/art work.	Generate ideas for a chosen purpose based on own experiences and investigations of existing products.	Generate ideas based on simple design criteria, investigation of existing products and own experiences for a chosen user and purpose.	Generate realistic ideas through discussions which focus on design criteria and the purpose of the product.	Respond to design briefs by generating realistic ideas through discussions which focus on the needs of the user and the purpose of the product.	Use interviews, surveys and questionnaires to research user needs and use the research to generate several different ideas to meet the design brief.	Carry out research into user needs and existing products and use the research to generate and refine an idea showing awareness of constraints of time, materials and techniques.
<b>2</b>	Begin to plan out & design before making models.  Begin to think about materials & techniques to be used in modelling.	Use talking and drawings to discuss my design and what it will do.	Use talking, drawing, or mock-ups to develop, model and communicate my ideas.	Use mock-ups and labelled sketches to describe my design and explain how it will work.	Use labelled sketches and models to communicate the details of my designs including material choices and joining techniques.	Use annotated sketches and prototypes to explain my ideas and communicate the details of my designs	Use annotated sketches, exploded diagrams and prototypes to explain my ideas and communicate the details of my designs
<b>MAKING</b>							
<b>3</b>	Begin to describe the process of making a model, keeping a purpose in mind.  Explore building & destroying. Handles, feels & manipulates malleable materials.	Plan by saying what I will do or need next as I make my design.	Plan by identifying and collecting the materials I will use for my design before building.	Use class discussions to develop a clear idea of what has to be done, planning in advance how to use materials and equipment.	Use class discussions to order the main stages of making in advance and modify the sequence throughout the build to achieve my aims.	I can formulate and follow a step-by-step plan to guide making, listing tools and materials required.	I can produce step by step plans to guide making, listing tools and materials required at each stage and allocate tasks within a team.
<b>4</b>	4a] Use simple tools and competently and appropriately.  Hold & manipulate cutting tools safely.  4b] Begin to use simple finishing techniques such as colouring or painting in modelling.	4a] Select from and use resources and tools safely to cut, shape and join work.  4b] Use simple finishing techniques such as colouring or painting suitable for the product being created.	4a] Select from and use resources and tools safely to mark out, cut, shape and join work explaining choices according to the resources and tools characteristics.  4b] Select and use simple finishing techniques such as colouring, painting or embellishments suitable for the product being created.	I can use appropriate tools with some accuracy to cut, shape, join or finish my work and explain my choice of materials according to their aesthetic properties.	I can use appropriate tools mostly accurately to cut, shape, join or finish my work and apply skills from art and design to improve the finish of my product.	I can select appropriate tools and materials for making my product according to their functional properties and aesthetic qualities and measure, mark out, cut and join accurately and safely to ensure a good quality finish to my product.	I can select appropriate tools and materials for making my product justifying my choices according to their functional properties and aesthetic qualities and measure, mark out, cut and join with precision to achieve a high quality product.

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### TECHNICAL KNOWLEDGE

<b>5</b> Structures	<p>Explore craft &amp; construction materials to create simple structures &amp; more stable builds.</p> <p>Explore building &amp; restructuring in construction.</p>	<p>Find ways to make freestanding structures stronger and more stable e.g. by using a base</p>	<p>Know and use different ways to make free-standing structures stronger, stiffer and more stable e.g. by using a wider or heavier base or adding buttresses and explain why it works.</p>	<p>Know and use different ways to strengthen and stiffen shell structures e.g. laminating, corrugating and ribbing</p>	<p>Select the most appropriate way to strengthen or stiffen shell structures e.g. laminating, corrugating and ribbing.</p>	<p>Begin to understand how triangulation can add strength to a frame structure by using diagonals to reinforce frameworks made.</p>	<p>Use triangulation to strengthen, stiffen and reinforce a frame structure.</p>
<b>6</b> Mechanisms	<p>Begin to explore how toys &amp; objects move.</p>	<p>Use a range of different mechanisms e.g. sliders, levers and wheels and axles and discuss the movement they produce.</p>	<p>Understand that different mechanisms produce different types of movement and choose the one most appropriate for the product they are making.</p>	<p>Use a lever and linkage mechanism to produce a product with one moving part and identify the input and output movements.</p>	<p>Use a lever and linkage mechanism to produce a product with more than one moving part and explain how the oscillating or reciprocating movements are created.</p>	<p>Use a gears and pulleys mechanism to produce a product that can speed up and slow down.</p>	<p>Use a gears and pulleys mechanism to produce a product that can speed up, slow down or change the direction of movement.</p>
<b>7</b> Electrical systems				<p>Use an electrical system in designs to make a product with one outcome e.g. an electrical circuit making light or sound.</p>	<p>Use an electrical system in designs to make a product with more than one outcome e.g. a simple series circuit incorporating switches, bulbs and buzzers.</p>	<p>Use an electrical system to make a product incorporating a series circuit where two output devices are controlled by one switch.</p>	<p>Use an electrical system to make a product incorporating parallel circuits where two output devices are controlled independently by two separate switches.</p>
<b>8</b> Textiles	<p>Explore &amp; describe a range of materials &amp; resources in modelling.</p> <p>Begin to use range of materials in craft work e.g. wool, grass, raffia &amp; paper</p>	<p>Use a template to create two identical shapes in order to make a simple textile product</p>	<p>Create and use a template to produce two identical shapes to make a simple textile product</p>	<p>Use a pattern that incorporates seam allowances and discuss why they are needed.</p>	<p>Create and use pattern pieces that incorporate seam allowances explaining their purpose.</p>	<p>Use fasteners in my product e.g. buttons, press-stud, Velcro, ties, zip.</p>	<p>Select and use the most appropriate fastener for the product taking account of purpose and user.</p>
<b>9</b> Textiles	<p>Begin to explore and evaluate joining techniques for a range of textiles e.g. glue, tape &amp; split pins</p> <p>Begin to explore simple weaving (paper) and collage</p>	<p>Use gluing, stapling or safety pinning to join textiles</p>	<p>Use sewing (running stitch) gluing, stapling or pinning to join textiles</p>	<p>Use sewing to securely join fabric inside out using overstitch or running stitch.</p>	<p>Use sewing (running stitch, backstitch, blanket stitch or overstitch) to securely join two pieces of fabric together inside out.</p>	<p>Use sewing as a means of decoration e.g. chain stitch, stem stitch or lazy daisy.</p>	<p>Use sewing as a means of decoration (e.g. applique, chain stitch, stem stitch or lazy daisy) and use square paper for a grid to ensure the stitches are in the right place and are the right size.</p>

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10 Vocab	Know and use appropriately technical and sensory vocabulary relevant to the project (see unit plans)						
<b>EVALUATING</b>							
<b>11</b>	Begin to examine a range of products and talk about materials used and begin to describe the purpose of these products.	Explore a range of existing products relevant to the project being undertaken to determine purpose and user needs	Evaluate a range of existing products and use some of what I have learned in my own designing and making	Explore and evaluate a range of existing products identifying the materials, components and techniques that have been used.	Explore and evaluate a range of existing products suggesting some reasons for the choice of materials, components and techniques that have been used.	Explore and evaluate a range of existing products giving reasons for the choice of materials, components and techniques that have been used.	Explore and evaluate a range of existing products identifying materials, components and techniques that have been used and their fitness for purpose.
<b>12</b>	Evaluate completed work and identify how product could be developed/adapted if made again.	Evaluate my product by discussing how well it works in relation to the purpose.	Evaluate my product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.	Test and evaluate my products against design criteria and the intended user and purpose.	Test and evaluate my products against design criteria and the intended user and purpose as I design and make.	Critically evaluate products made against the design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.	Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.
<b>FOOD</b>							
<b>13</b>	Begin to identify & use simple utensils and equipment in food preparation.  Use knife & fork appropriately	Use simple utensils and equipment to grate, chop and squeeze safely.	Use simple utensils and equipment to peel, grate, chop, slice and squeeze safely.	Use appropriate equipment and utensils to prepare and combine food and chop using the bridge technique.	Use appropriate equipment and utensils to prepare and combine food and chop using the bridge or claw technique.	Use mixing or rubbing in as a means of combining food.	Select and use the most appropriate method for combining food e.g. mixing for wet ingredients and rubbing in to mix fat.
<b>14</b>	Understand the importance of healthy food.  Begin to identify fruits & vegetables and begin to describe where food comes from. Show awareness of different types of food.	Name fruit and vegetables used in my recipes	Know whether ingredients are fruits or vegetables and how they are grown (e.g. underground, on trees).	Know whether the ingredients for their product are fresh or processed.	Know whether the ingredients for their product are fresh or processed and where fresh, whether they are grown, reared or caught.	Know whether the ingredients for their product are fresh or processed and where and how the ingredients are grown, reared, caught and processed.	Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed

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15	Manage own self hygiene in a range of situations	Follow food handling and hygiene directions e.g. hair tied back, sleeves rolled up, aprons on, hands washed and dried.	Know and use basic food handling and hygiene practices	Know and use basic food handling and hygiene practices	Explain the need for and use basic food handling and hygiene practices	Apply the rules for basic food hygiene and other safe practices e.g. hazards related to the use of ovens and knives	Apply the rules for basic food hygiene and other safe practices e.g. hazards related to the use of ovens and knives
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