



## Messing Primary Progression Map Design and Technology.

	Reception	Yr1/2	Yr3/4	Yr5/6
<b>To design, make, evaluate and improve</b>	<p><b>Characteristics of effective learning link closely with DMEI skills</b></p> <ul style="list-style-type: none"> <li>-Show curiosity about objects, events and people</li> <li>-Questions why things happen</li> <li>-Engage in open-ended activity.</li> <li>- Thinking of ideas</li> <li>- Find ways to solve problems / find new ways to do things / test their ideas</li> <li>-Use senses to explore the world around them</li> <li>-Create simple representations of events, people and objects</li> <li>-Plan and make decisions about how to approach a task, solve a problem and reach a goal</li> <li>-Check how well their activities are going and change strategy as needed</li> <li>-Review how well the approach worked</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Design products that have a clear purpose and an intended user.</b></li> <li>• <b>Make products, refining the design as work progresses.</b></li> <li>• <b>Use software to design.</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Design with purpose by identifying opportunities to design.</b></li> <li>• <b>Make products by working efficiently (such as by carefully selecting materials).</b></li> <li>• <b>Refine work and techniques as work progresses, continually evaluating the product design.</b></li> <li>• <b>Use software to design and represent product designs.</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Design with the user in mind, motivated by the service a product will offer (rather than simply for profit).</b></li> <li>• <b>Make products through stages of prototypes, making continual refinements.</b></li> <li>• <b>Ensure products have a high quality finish, using art skills where appropriate.</b></li> <li>• <b>Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.</b></li> </ul>
<b>To take inspiration from design throughout history</b>	<p><b>Communication and Language Children in Reception</b></p> <ul style="list-style-type: none"> <li>-Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.</li> </ul> <p><b>Physical Development Children in Reception</b></p> <ul style="list-style-type: none"> <li>- Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.</li> </ul> <p><b>ELG's</b></p> <ul style="list-style-type: none"> <li>-Use a range of small tools, including scissors, paintbrushes and cutlery.</li> </ul> <p><b>Expressive Arts and Design Children in Reception:</b></p> <ul style="list-style-type: none"> <li>-Return to and build on their previous learning, refining ideas and developing their ability to represent them.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Explore objects and designs to identify likes and dislikes of the designs.</b></li> <li>• <b>Suggest improvements to existing designs.</b></li> <li><b>Explore how products have been created.</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs.</b></li> <li>• <b>Improve upon existing designs, giving reasons for choices.</b></li> <li>• <b>Disassemble products to understand how they work.</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.</b></li> <li>• <b>Create innovative designs that improve upon existing products.</b></li> <li>• <b>Evaluate the design of products so as to suggest improvements to the user experience.</b></li> </ul>

		<p>-Create collaboratively, sharing ideas, resources and skills.</p> <p><b>ELG's</b></p> <p>-Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>-Share their creations, explaining the process they have used.</p>			
<b>Vocabulary</b>		<i>cut snip press fold join fix glue stick</i>	<i>investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function</i>	<i>user, purpose, design, model, evaluate, prototype, annotated sketch, function, innovative, investigate, label, drawing, planning, design criteria, annotated sketch, evaluating, design brief design criteria, innovative, prototype, user, purpose, function, brief,</i>	<i>design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype</i>
<b>To master practical skills</b>	<b>Materials</b>	<ul style="list-style-type: none"> <li>• Select from a range of materials</li> <li>• Learn to use tools e.g. scissors to make changes to materials</li> </ul>	<ul style="list-style-type: none"> <li>• Cut materials safely using tools provided. Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).</li> <li>• Measure and mark out to the nearest centimetre.</li> <li>• Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen).</li> </ul>	<ul style="list-style-type: none"> <li>• Cut materials accurately and safely by selecting appropriate tools. Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs).</li> <li>• Measure and mark out to the nearest millimetre.</li> <li>• Select appropriate joining techniques.</li> </ul>	<ul style="list-style-type: none"> <li>• Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).</li> <li>• Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).</li> </ul>
	<b>Construction</b>	<ul style="list-style-type: none"> <li>• Construction toys</li> <li>• “Junk” modelling</li> </ul>	<ul style="list-style-type: none"> <li>• Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products.</li> </ul>	<ul style="list-style-type: none"> <li>• Choose suitable techniques to construct products or to repair items.</li> <li>• Strengthen materials using suitable techniques.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding).</li> </ul>

	<p><b>Mechanics</b></p>	<p>Construction equipment especially Gears and Knex. Plus playing with toy cars.</p> <p>Experience of working with card and paper including cutting skills, joining with split pins, glue, masking tape and paper fasteners .</p>	<ul style="list-style-type: none"> <li>• Create products using levers, wheels and winding mechanisms.</li> </ul>	<ul style="list-style-type: none"> <li>• Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).</li> </ul>	<ul style="list-style-type: none"> <li>• Convert rotary motion to linear using cams.</li> <li>• Use innovative combinations of electronics (or computing) and mechanics in product designs.</li> </ul>
	<p><b>Vocabulary</b></p>		<p><i>vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used</i></p>	<p><i>mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating</i></p>	<p><i>pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output</i></p>
	<p><b>Textiles</b></p>	<ul style="list-style-type: none"> <li>• Weaving</li> </ul> <p>Talk about the purposes of existing products. Cut and join fabrics with simple techniques.</p>	<ul style="list-style-type: none"> <li>• Shape textiles using templates.</li> <li>• Join textiles using running stitch.</li> <li>• Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing).</li> </ul>	<ul style="list-style-type: none"> <li>• Understand the need for a seam allowance.</li> <li>• Join textiles with appropriate stitching.</li> <li>• Select the most appropriate techniques to decorate textiles.</li> </ul>	<ul style="list-style-type: none"> <li>• Create objects (such as a cushion) that employ a seam allowance.</li> <li>• Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration).</li> <li>• Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion).</li> </ul>
	<p><b>Vocabulary</b></p>		<p><i>joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish</i></p>	<p><i>fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance</i></p>	<p><i>seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings,</i></p>

	<b>Electricals and electronics</b>	<b>Electronic toys.</b>		<ul style="list-style-type: none"> <li>• Create series and parallel circuits</li> </ul>	<ul style="list-style-type: none"> <li>• Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).</li> </ul>
	<b>Computing</b>	<ul style="list-style-type: none"> <li>• Programmable toys e.g. Beebot</li> </ul>	<ul style="list-style-type: none"> <li>• Model designs using software.</li> </ul>	<ul style="list-style-type: none"> <li>• Control and monitor models using software designed for this purpose.</li> </ul>	<ul style="list-style-type: none"> <li>• Write code to control and monitor models or products.</li> </ul>
	<b>Vocabulary</b>			<i>series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device</i>	<i>reed switch, toggle switch, push-to-make switch, push-to-break switch, light dependent resistor (LDR), tilt switch, light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, series circuit, parallel circuit</i>
	<b>Food</b>	<p>Making Gingerbread men.</p> <p>Experience of common fruit and vegetables and of cutting soft fruit and vegetables.</p>	<ul style="list-style-type: none"> <li>• Cut, peel or grate ingredients safely and hygienically.</li> <li>• Measure or weigh using measuring cups or electronic scales.</li> <li>• Assemble or cook ingredients.</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare ingredients hygienically using appropriate utensils.</li> <li>• Measure ingredients to the nearest gram accurately.</li> <li>• Follow a recipe.</li> </ul> <p>Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).</p>	<ul style="list-style-type: none"> <li>• Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms).</li> <li>• Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.</li> <li>• Demonstrate a range of baking and cooking techniques.</li> <li>• Create and refine recipes, including ingredients, methods, cooking times and temperatures.</li> </ul>
	<b>Vocabulary</b>	<i>fruit and vegetables healthy/unhealthy eat different food</i>	<i>portion fruit and vegetables proteins- beans, pulses, fish, eggs, meat dairy/alternatives- cheese, milk, yoghurt carbohydrates- potatoes, bread, rice, pasta hygiene</i>	<i>savoury sweet recipe appearance peeling chopping grating mixing spreading kneading baking prepare temperature taste texture hygiene safety measure gram kilogram heat/hot oven hob cook utensils processed peel</i>	<i>prepare cook savoury peeling chopping slicing grating mixing blending kneading baking melting whisking proving rise dissolving juicing aroma substance nutrients substitute adapting methods cooking time temperature storage handling</i>

		<i>peeling grating cutting healthy/unhealthy</i>	<i>chop slice grate mix fresh spread knead bake healthy diet varied organic</i>	
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