

Design and Technology Milestones Broken down into Year Groups

		Milestone 1	What this looks like in Year 1	What this looks like in Year 2
To master practical skills	Food	<ul style="list-style-type: none"> • Cut, peel or grate ingredients safely and hygienically. 	<ul style="list-style-type: none"> • Kitchen hygiene including washing hand properly and making sure all equipment is clean before starting • Introduction to equipment to use when cutting, peeling and grating • Practise skills of cutting, peeling and grating 	<ul style="list-style-type: none"> • Recap kitchen hygiene including washing hand properly and making sure all equipment is clean before starting • Recap of equipment names for cutting, peeling and grating • Practise skills of cutting, peeling and grating with greater control and precision
		<ul style="list-style-type: none"> • Measure or weigh using measuring cups or electronic scales. 	<ul style="list-style-type: none"> • Measure ingredients using whole amounts of containers • Gradually introduce to measured amounts such as teaspoons, cups etc 	<ul style="list-style-type: none"> • Measure ingredients using simple electronic scales to whole numbers such as 100, 200 etc
		<ul style="list-style-type: none"> • Assemble or cook ingredients. 	<ul style="list-style-type: none"> • Combine raw ingredients such as fruit and vegetables EG fruit kebabs, fruit 'smoothies' etc 	
		<ul style="list-style-type: none"> • Use the basic principles of a healthy and varied diet to prepare dishes 	<ul style="list-style-type: none"> • Sort food into the five food groups and know the names of the groups • Know that we should eat at least five portions of fruit and vegetables everyday 	<ul style="list-style-type: none"> • Sort food into the five food groups on the eatwell plate • Be able to explain why we need to eat five portions of fruit and vegetables everyday
		<ul style="list-style-type: none"> • understand where food comes from 	<ul style="list-style-type: none"> • Know that all food comes from plants or animal • Name some foods and where they come from 	<ul style="list-style-type: none"> • Know that all food has to be farmed, grown elsewhere (eg home) or caught • Know where foods come from and can name some
	Materials	<ul style="list-style-type: none"> • Cut materials safely using tools provided. 	<ul style="list-style-type: none"> • Learn names for different tools such as saw, scissors, • Learn safety measures to adhere to when using such tools • Partake in many activities involving cutting paper, card, fabric • Cut along lines, straight and curved 	<ul style="list-style-type: none"> • Learn names for different tools such as saw, scissors, craft knife • Recap safety measures to adhere to when using such tools • Partake in many activities involving cutting paper, card, fabric
		<ul style="list-style-type: none"> • Measure and mark out to the nearest centimetre. 	<ul style="list-style-type: none"> • Teach how to mark a material and then cut to the mark made • Use non-standard units of measure 	<ul style="list-style-type: none"> • Teach how to use a ruler to measure and mark out a point to cut to. • Use cm rulers

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		<ul style="list-style-type: none"> • Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). 	<ul style="list-style-type: none"> • Teach the children how to tear and cut and apply these techniques to appropriate activities • Teach children how to roll paper to create tubes 	<ul style="list-style-type: none"> • Recap how to tear and cut and apply these techniques to appropriate activities • Teach the children how to fold and curl materials • Children to give examples of when these techniques might be used
		<ul style="list-style-type: none"> • Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen). 		Teach the children how to: <ul style="list-style-type: none"> • Use hole punch • Insert paper fasteners for card linkages • Create hinges • Investigate strengthening sheet materials • Observe how a glue gun can be used
Textiles		<ul style="list-style-type: none"> • Shape textiles using templates. 	<ul style="list-style-type: none"> • Cut out shapes which have been created by drawing round a template onto the fabric 	
		<ul style="list-style-type: none"> • Join textiles using running stitch. 	<ul style="list-style-type: none"> • Join fabrics by using glue, staples, tape • Practise running stitch using sewing cards and laces 	
		<ul style="list-style-type: none"> • Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing). 	<ul style="list-style-type: none"> • Decorate fabrics with buttons, beads, sequins, braids, ribbons by glueing them onto the fabric 	<ul style="list-style-type: none"> • Colour fabrics using a range of techniques e.g. fabric paints, printing, painting • Decorate fabrics with buttons, beads, sequins, braids, ribbons using sewing techniques
Construction		<ul style="list-style-type: none"> • Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. 		<ul style="list-style-type: none"> • Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products.
Mechanics		<ul style="list-style-type: none"> • Create products using levers, wheels and winding mechanisms. 	<ul style="list-style-type: none"> • Create products using levers. 	<ul style="list-style-type: none"> • Create products using levers, wheels and winding mechanisms.

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To design, make, evaluate and improve		<ul style="list-style-type: none"> • Design products that have a clear purpose and an intended user. 	<ul style="list-style-type: none"> • Follow verbal instructions • Explain what they are making and which materials they are using • Name the tools they are using • Describe what they need to do next • Select materials from a limited range that will meet the design criteria • Select and name the tools needed to work the materials • Select appropriate technique explaining First.....Next.....Last.... • Explore ideas by rearranging materials • Model ideas with kits, reclaimed materials • Select pictures to help develop ideas • Use pictures and words to convey what they want to design and make • Describe their models and drawings of ideas and intentions • Use kits/reclaimed materials to develop an idea • Use drawings to record ideas as they are developed • Discuss their work as it progresses • Add notes to drawings to help explanations 	<ul style="list-style-type: none"> • Follow verbal instructions • Explain what they are making and which materials they are using • Name the tools they are using • Describe what they need to do next • Select materials from a limited range that will meet the design criteria • Select and name the tools needed to work the materials • Select appropriate technique explaining First.....Next.....Last.... • Explore ideas by rearranging materials • Model ideas with kits, reclaimed materials • Select pictures to help develop ideas • Use pictures and words to convey what they want to design and make • Describe their models and drawings of ideas and intentions • Use kits/reclaimed materials to develop an idea • Use drawings to record ideas as they are developed • Discuss their work as it progresses • Add notes to drawings to help explanations
		<ul style="list-style-type: none"> • Make products, refining the design as work progresses. 	<ul style="list-style-type: none"> • Say what they like and do not like about items they have made and attempt to say why • Talk about their designs as they develop and identify good and bad points • Talk about changes made during the making process • Discuss how closely their finished products meet their design criteria 	<ul style="list-style-type: none"> • Say what they like and do not like about items they have made and attempt to say why • Talk about their designs as they develop and identify good and bad points • Talk about changes made during the making process • Discuss how closely their finished products meet their design criteria
To take inspiration from design throughout history		<ul style="list-style-type: none"> • Explore objects and designs to identify likes and dislikes of the designs. 		

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		<ul style="list-style-type: none">• Suggest improvements to existing designs.		
		<ul style="list-style-type: none">• Explore how products have been created.		

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		Milestone 2	What this looks like in Year 3	What this looks like in Year 4
To master practical skills	Food	<ul style="list-style-type: none"> • Prepare ingredients hygienically using appropriate utensils. 	<ul style="list-style-type: none"> • Recap kitchen hygiene including washing hand properly and making sure all equipment is clean before starting • Teach equipment names for mixing, cooking and cutting • Practise skills of cutting, mixing, beating, folding, kneading and rolling with greater control and precision 	
		<ul style="list-style-type: none"> • Measure ingredients to the nearest gram accurately. 	<ul style="list-style-type: none"> • Recap measuring ingredients to the nearest 100g 	
		<ul style="list-style-type: none"> • Follow a recipe. 	<ul style="list-style-type: none"> • Simple step recipes to follow using pictures for each step 	
		<ul style="list-style-type: none"> • Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking). 	<ul style="list-style-type: none"> • Combine raw ingredients, moving to simple cooking using an oven or grill • Notice the changes in ingredients when they have been cooked • Talk about and describe changes that occur in foods when they are cooked 	
		<ul style="list-style-type: none"> • Understand and apply the principles of a healthy and varied diet 	<ul style="list-style-type: none"> • Recap the eatwell plate and the five different food groups • Learn that a healthy diet is made up from a variety and balance of different foods and drinks • Learn that to be active and healthy, food is needed to provide energy for the body 	
		<ul style="list-style-type: none"> • Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. 	<ul style="list-style-type: none"> • Learn about the foods that are grown and how they are grown • Include information on root / non-root vegetables, fruit plants etc 	

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Materials	<ul style="list-style-type: none"> • Cut materials accurately and safely by selecting appropriate tools. 		<ul style="list-style-type: none"> • Choose and use the correct cutting tool for the task • Make decisions as to what tool would be best used for the task • Recap safety measures when using cutting tools
	<ul style="list-style-type: none"> • Measure and mark out to the nearest millimetre. 		<ul style="list-style-type: none"> • Practise using a ruler to the nearest cm and mm, marking and cutting
	<ul style="list-style-type: none"> • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). 		<ul style="list-style-type: none"> • Practise skills from Year 3 • Create nets • Use and explore complex pop ups
	<ul style="list-style-type: none"> • Select appropriate joining techniques. 		<ul style="list-style-type: none"> • Use glue gun with close supervision (one to one)
Textiles	<ul style="list-style-type: none"> • Understand the need for a seam allowance. 		<ul style="list-style-type: none"> • Prototype a product using J cloths • Create a simple pattern • Understand the need for patterns
	<ul style="list-style-type: none"> • Join textiles with appropriate stitching. 		<ul style="list-style-type: none"> • Join fabrics using running stitch, over sewing, back stitch • Explore fastenings and recreate some e.g. sew on buttons and make loops
	<ul style="list-style-type: none"> • Select the most appropriate techniques to decorate textiles. 		<ul style="list-style-type: none"> • Use appropriate decoration techniques e.g. appliqué(glued or simple stitches)
Electricals and electronics	<ul style="list-style-type: none"> • Create series and parallel circuits 		<ul style="list-style-type: none"> • Incorporate a circuit with a bulb or buzzer into a model
Construction	<ul style="list-style-type: none"> • Choose suitable techniques to construct products or to repair items. 	<ul style="list-style-type: none"> • Make structures more stable by giving them a wide base • Prototype frame and shell structures 	<ul style="list-style-type: none"> • Make structures more stable by giving them a wide base • Prototype frame and shell structures • Measure and mark square selection, strip and dowel accordingly to 1cm • Use glue gun with close supervision (one to one)

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		<ul style="list-style-type: none"> • Strengthen materials using suitable techniques. 	<ul style="list-style-type: none"> • Create shell or frame structures, strengthen frames with diagonal struts 	<ul style="list-style-type: none"> • Create shell or frame structures, strengthen frames with diagonal struts
	Mechanics	<ul style="list-style-type: none"> • Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears). 	<ul style="list-style-type: none"> • Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms). 	<ul style="list-style-type: none"> • Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).
To design, make, evaluate and improve		<ul style="list-style-type: none"> • Design with purpose by identifying opportunities to design. 	<ul style="list-style-type: none"> • Investigate similar products to the one to be made to give starting points for a design • Draw/sketch products to help analyse and understand how products are made • Think ahead about the order of their work and decide upon tools and materials • Plan a sequence of actions to make a product • Record the plan by drawing (labelled sketches) or writing • Develop more than one design or adaptation of an initial design • Propose realistic suggestions as to how they can achieve their design ideas • Add notes to drawings to help explanations 	<ul style="list-style-type: none"> • Investigate similar products to the one to be made to give starting points for a design • Draw/sketch products to help analyse and understand how products are made • Think ahead about the order of their work and decide upon tools and materials • Plan a sequence of actions to make a product • Record the plan by drawing (labelled sketches) or writing • Develop more than one design or adaptation of an initial design • Propose realistic suggestions as to how they can achieve their design ideas • Add notes to drawings to help explanations
		<ul style="list-style-type: none"> • Make products by working efficiently (such as by carefully selecting materials). 		
		<ul style="list-style-type: none"> • Refine work and techniques as work progresses, continually evaluating the product design. 		

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To take inspiration from design throughout history		<ul style="list-style-type: none"> • Improve upon existing designs, giving reasons for choices. 		
		<ul style="list-style-type: none"> • Disassemble products to understand how they work. 		

		Milestone 3	What this looks like in Year 5	What this looks like in Year 6
To master practical skills	Food	<ul style="list-style-type: none"> • Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). 	<ul style="list-style-type: none"> • Recap kitchen hygiene including washing hand properly and making sure all equipment is clean before starting • Learn how to read food labels for ingredients and correct storage • Learn what microorganisms are and the differences between good and bad ones 	<ul style="list-style-type: none"> • Recap kitchen hygiene including washing hand properly and making sure all equipment is clean before starting • Learn about how we store different foods in different places eg vegetables in a cool, dry place, meat / dairy in the fridge, cooked and uncooked food etc • Recap what microorganisms are and the differences between good and bad ones • Learn how we can stop the spreading of harmful microorganisms

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	<ul style="list-style-type: none"> • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. 	<ul style="list-style-type: none"> • Recap how to measure ingredients to nearest gram using electronic and non-electronic scales • Begin to scale up and scale down ingredients so that the recipe can feed more/less eg double, triple, halve etc ingredients in a problem solving capacity 	<ul style="list-style-type: none"> • Recap basics of using electronic and non-electronic measuring scales • Recap scaling ingredients up and down to feed more / less • Use ratio to problem solve the volume of the different ingredients that are required
	<ul style="list-style-type: none"> • Demonstrate a range of baking and cooking techniques. 	<ul style="list-style-type: none"> • Follow recipes where combining ingredients and cooking are the main tasks • Recap how to turn on and off an oven • Understand the need to warm up the oven before cooking 	<ul style="list-style-type: none"> • Follow recipes where combining ingredients and cooking are the main tasks • Recap how to turn on and off an oven • Understand the need to warm up the oven before cooking
	<ul style="list-style-type: none"> • Create and refine recipes, including ingredients, methods, cooking times and temperatures. 	<ul style="list-style-type: none"> • Create and refine recipes, including ingredients, methods, cooking times and temperatures. 	<ul style="list-style-type: none"> • Create and refine recipes, including ingredients, methods, cooking times and temperatures.
	<ul style="list-style-type: none"> • Understand and apply the principles of a healthy and varied diet 		<ul style="list-style-type: none"> • Recap that different foods contain different substances eg nutrients, water and fibre – that are needed for health
	<ul style="list-style-type: none"> • Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. 		<ul style="list-style-type: none"> • Recap the foods that are grown, reared and caught in the UK, Europe and the wider world include pigs, chicken, cattle, fish Look at different techniques that are used across the world • Recap food availability and some of the things that have an effect on this • Recap how food is processed into ingredients that can be eaten or used in cooking and some of their uses

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Materials	<ul style="list-style-type: none"> • 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). 		<ul style="list-style-type: none"> • Give many opportunities for measuring and cutting materials in different ways including teaching children to solve problems when they arise
	<ul style="list-style-type: none"> • 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). 		<ul style="list-style-type: none"> • Cut slots • Cut accurately and safely to a marked line • Join and combing materials with temporary, fixed or moving joinings • Use craft knife, cutting mat and safety ruler under one to one supervision if appropriate • Choose an appropriate sheet material for the purpose
Textiles	<ul style="list-style-type: none"> • Create objects (such as a cushion) that employ a seam allowance. 		<ul style="list-style-type: none"> • Create 3D products using pattern pieces and seam allowance • Understand pattern layout • Pin and tack fabric pieces together before sewing • Combine fabrics to create more useful properties • Make quality products
	<ul style="list-style-type: none"> • Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). 		<ul style="list-style-type: none"> • Join fabrics using over sewing, back stitch, blanket stitch or machine stitching (closer supervision)
	<ul style="list-style-type: none"> • 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). 		<ul style="list-style-type: none"> • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a warmth and comfort in a coat – insulation and padding)
Electricals and electronics	<ul style="list-style-type: none"> • Create circuits using electronics kits that employ a number of components (such 	<ul style="list-style-type: none"> • Create circuits using electronics kits that employ a number of components (such 	

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	as LEDs, resistors, transistors and chips).	as LEDs,microbit, resistors).	
Computing	• Write code to control and monitor models or products.	<ul style="list-style-type: none"> • Incorporate motor and a switch into a model 	<ul style="list-style-type: none"> • Control a model using an ICT control programme
Construction	• Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding).		<ul style="list-style-type: none"> • Use bradawl to mark hole positions • Use hand drill to drill tight and loose fit holes • Cut strip wood, dowel, square section wood accurately to 1mm • Join materials using appropriate methods • Build frameworks using a range of materials e.g. wood, card corrugated plastic to support mechanisms • Use glue gun with close supervision
Mechanics	• Convert rotary motion to linear using cams.	<ul style="list-style-type: none"> • Use a cam to make an up and down mechanism • Design and make a litter ocean picker 	<ul style="list-style-type: none"> • Use a cam to make an up and down mechanism.
	• Use innovative combinations of electronics (or computing) and mechanics in product designs.	• Use innovative combinations of electronics (or computing) and mechanics in product designs – microbit.	• Use innovative combinations of electronics (or computing) and mechanics in product designs.

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To design, make, evaluate and improve	<ul style="list-style-type: none"> • Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Make products through stages of prototypes, making continual refinements. 	<ul style="list-style-type: none"> • Investigate products/images to collect ideas • Sketch and model alternative ideas • Develop one idea in depth • Combine modelling and drawing to refine ideas • Plan the sequence of work using a storyboard • Record ideas using annotated diagrams • Use models, kits and drawings to help formulate design ideas • Use found information to inform decisions • Draw plans which can be read/followed by someone else • Give a report using correct technical vocabulary 	<ul style="list-style-type: none"> • Investigate products/images to collect ideas • Sketch and model alternative ideas • Develop one idea in depth • Combine modelling and drawing to refine ideas • Plan the sequence of work using a storyboard • Record ideas using annotated diagrams • Use models, kits and drawings to help formulate design ideas • Make prototypes • Use found information to inform decisions • Draw plans which can be read/followed by someone else • Give a report using correct technical vocabulary
	<ul style="list-style-type: none"> • Ensure products have a high quality finish, using art skills where appropriate. 	<ul style="list-style-type: none"> • Use the design criteria to inform their decisions about ways to proceed • Justify their decisions about materials and methods of construction • Reflect on their work using design criteria stating how well the design fits the needs of the user • Identify what does and does not work in the product. • Make suggestions as how their design could be improved 	<ul style="list-style-type: none"> • Use the design criteria to inform their decisions about ways to proceed • Justify their decisions about materials and methods of construction • Reflect on their work using design criteria stating how well the design fits the needs of the user • Identify what does and does not work in the product. • Make suggestions as how their design could be improved
	<ul style="list-style-type: none"> • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs. 		<ul style="list-style-type: none"> • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.
To take inspiration from design throughout history	<ul style="list-style-type: none"> • Create innovative designs that improve upon existing products. 		
	<ul style="list-style-type: none"> • Evaluate the design of products so as to suggest improvements to the user experience. 		

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