

Design Technology Key Learning Grid – Year 5



	Autumn	Spring	Summer
	Year 5 NC objectives	Year 5 NC objectives	Year 5 NC objectives
DT– Year 5	NC Statement <u>Design</u> ♣ 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 ♣ generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <u>Make</u> ♣ select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately ♣ 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 <u>Evaluate</u> ♣ investigate and analyse a range of existing products ♣ evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ♣ understand how key events and individuals in design and technology have helped shape the world <u>Technical knowledge</u> ♣ apply their understanding of how to strengthen, stiffen and reinforce more complex structures Understand and apply the principles of a healthy and varied diet	NC Statement <u>Design</u> ♣ 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 ♣ generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <u>Make</u> ♣ select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately ♣ 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 <u>Evaluate</u> ♣ investigate and analyse a range of existing products ♣ evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ♣ understand how key events and individuals in design and technology have helped shape the world <u>Technical knowledge</u> ♣ apply their understanding of how to strengthen, stiffen and reinforce more complex structures ♣ understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]	NC Statement <u>Design</u> ♣ 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 ♣ generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <u>Make</u> ♣ select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately ♣ 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 <u>Evaluate</u> ♣ investigate and analyse a range of existing products ♣ evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ♣ understand how key events and individuals in design and technology have helped shape the world.

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	♣ prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques ♣ understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.	♣ apply their understanding of computing to program, monitor and control their products.	
	Year 5 ‘Key Learning’	Year 5 ‘Key Learning’	Year 5 ‘Key Learning’
	<u>Cooking and nutrition</u> <u>Developing a recipe</u> <u>Design</u> • Research existing recipes from the Victorian times. • Suggest alternative ingredients. • Design a label. <u>Make</u> • Write an alternative recipe. • Understand cross-contamination. • Use preparation skills. • Make a developed recipe. <u>Evaluate</u> • Explain the farm to fork process. • Analyse nutritional content. <u>Knowledge</u> • To know that beef comes from cows reared on farms. • To know that recipes can be adapted to suit nutritional needs and dietary requirements. • To know that nutritional information is found on food packaging. • To know that coloured chopping boards can prevent cross-contamination.	<u>Mechanical systems</u> <u>Automata toy</u> <u>Design</u> • Noticing wider-reaching problems or needs in the community. • Coming up with a broader range of ideas and deeper innovation, requiring pupils to think critically about their ideas’ practicality and originality. • Begin to use more complex annotated sketches, such as cross-sectional and exploded diagrams and pattern pieces in design. <u>Make</u> • Produce lists of equipment, materials and tools that they need for a task. • Select materials, components or ingredients based on research or user needs. • Explain their choices, referring to their research. • Consider which equipment will work well together. • Choose from the known range of equipment available to them with little guidance. • Assess risks associated with different tools and equipment.	<u>Textiles</u> <u>Stuffed Toy</u> <u>Design</u> • Design a stuffed toy, considering the main component shapes required and creating an appropriate template. • Consider the proportions of individual components. <u>Make</u> • Create a 3D stuffed toy from a 2D design. • Measure, mark and cut fabric accurately and independently. • Create strong and secure blanket stitches when joining fabric. • Thread needles independently. • Use appliqué to attach pieces of fabric decoration. • Sew blanket stitch to join fabric. • Apply blanket stitch so the spaces between the stitches are even and regular. <u>Evaluate</u> • Test and evaluate an end product and giving point for further improvements. <u>Knowledge</u>

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	• To know that food packaging serves many purposes.	• Understand and explain the importance of each safety rule. • Consistently apply safety instructions. • Cut jelutong or other harder wood with a coping saw or a tenon saw in small groups. • Cut in a back-and-forth sawing motion where appropriate. • In supervised groups, use hot glue guns safely. • Recognise that hot glue is useful for joining materials that need a strong bond that sets quickly. <u>Evaluate</u> • Assess their designs against a more complex set of design criteria that includes functionality, aesthetics, user experience, sustainability and cost. • Provide feedback that is helpful, specific and encouraging. • Incorporate feedback from peers or users to improve their product further, explaining the changes they made and the impact they had. <u>Knowledge</u> • To know that the mechanism in an automata uses a system of cams, axles and followers. • To know that different shaped cams produce different outputs. • To know which mechanisms are working together to make a mechanical system. • To know that there are different directions of movement.	• To know that blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric. • To understand that it is easier to finish simpler designs to a high standard. • To know that soft toys are often made by creating appendages separately and then attaching them to the main body. • To know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely. • To understand what a frame structure is. • To know that a 'free-standing' structure is one which can stand on its own.
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		● To know that mechanisms can change one type of movement to another.	
Vocabulary	balanced, brand, design, equipment, farm, hygiene, label, beef, cook, cut, evaluate, grate, ingredients, measure, recipe, theme, preference, process, safety, abattoir, cross-contamination, adaptation, enhance, nutrient, nutritional value, press, nutrition	diagram, evaluate, feedback, mechanical system, linkage, mechanism, pivot, pneumatic system, accurate, automata, axle, bench hook, cam, cam profile, component, cross-sectional diagram, dowel, evaluate, exploded diagram, frame, housing, visual, function	accurate, annotate, appendage, blanket-stitch, design criteria, detail, evaluation, fabric, sew, shape, stuffed toy, stuffing, template