



Kingsland CE Primary School

Design and Technology Skills Progression



Curriculum Area	Class 1	Class 2	Class 3	Class 4	Class 5
Design	<p>DM Explore different materials freely, to develop their ideas about how to use them and what to make.</p> <p>Develop their own ideas and then decide which materials to use to express them.</p> <p>ELG Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function</p>	<p>National Curriculum Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].</p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Design purposeful, functional, appealing products for themselves and other users based on design criteria Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology 		<p>National Curriculum Pupils should be taught to:</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 Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design 	
	<p>Regular opportunities to use construction materials e.g. Lego, Duplo, bricks, mobile</p> <p>Communicate ideas via drawings</p> <p>Topic related challenges</p>	<ul style="list-style-type: none"> Think of ideas and with help put them into practice Know what a design is and its purpose Use pictures and words to describe what they want to do (materials and tools) Communicate their ideas using labelled sketches giving reasons for choices 	<ul style="list-style-type: none"> Think of ideas and plan what to do next, based on what they know about materials and components Plan using specific materials and explain their choices Select the appropriate tools, techniques and materials explaining their choices Use pictures and words to describe what they want to do (materials, techniques, features-mechanics etc. and tools) Start to produce step by step plans 	<ul style="list-style-type: none"> Create models or prototypes to show aspects of design Produce step by step plans Come up with solutions to problems as they happen Take part in technical discussions about ideas 	<ul style="list-style-type: none"> Use computer aided design Use their knowledge of design and designers to further research to help influence their own design
Make	<p>DM Join different materials and explore different textures</p>	<p>National Curriculum Pupils should be taught to:</p> <ul style="list-style-type: none"> Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] 		<p>National Curriculum Pupils should be taught to:</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, 	

	<p>Explore, use and refine a variety of artistic effects to express their ideas and feelings</p> <p>Create collaboratively, sharing ideas, resources and skills.</p> <p>ELG Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function</p> <p>Use a range of small tools, including scissors, paint brushes and cutlery</p>	<ul style="list-style-type: none"> Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics 	<p>shaping, joining and finishing], accurately</p> <ul style="list-style-type: none"> 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>Make junk models - experiment with joining techniques, range of materials, manipulation of scissors</p> <p>Regular opportunities to use construction materials e.g. Lego, Duplo, bricks, mobile</p> <p>Use a range of media in topic work e.g. clay, dough, construction kits, junk etc.</p>	<ul style="list-style-type: none"> Know what materials can be used for a structure Know what a join is and use one Measure (non-standard) and mark out materials with care and increasing accuracy Cut materials safely (scissors) Be careful to make work look as neat as possible Know that textiles have different properties: touch, insulation, texture and waterproof Select the appropriate textile so that it does the job Describe textiles by the way they feel 	<ul style="list-style-type: none"> Use appropriate materials and an appropriate join Measure and mark out materials with care and increasing accuracy (cm) Use scoring and folding to shape materials accurately Make cuts accurately (scissors and saws) Methods of working are increasingly precise aiming for a high quality finish Select the appropriate textile(s) for a product Combine materials to add strength or visual appeal Find out how to make materials for structure stronger (folding, rolling and joining, columns and triangles) Measure, mark out and cut fabric Join fabrics using glue and other techniques 	<ul style="list-style-type: none"> Select from a variety of materials best suited to a design Make cuts accurately and reject pieces that are not accurate and improve their technique Combine art skills to add colour and texture to work Use art textiles skills such as stitching to help create a product that is sturdy and fit for purpose Use sharp scissors 	<ul style="list-style-type: none"> Measure using mm and then use scoring, and folding to shape materials accurately Joins are strong and stable, giving extra strength to products Some joins are flexible to allow for dismantling or folding Methods of working are precise so that products have a high quality finish Use computer programming when creating a product Mark out using patterns and templates Join textiles using art skills of stitching / embroidering to

				<p>accurately to cut textiles</p> <ul style="list-style-type: none"> • Make holes accurately (drill, punch) • Join materials to make products using both permanent and temporary fastenings 	<p>make durable and desirable products</p>
Evaluate	<p>DM Return to and build on their previous learning, refining ideas and developing their ability to represent them.</p> <p>ELG Share their creations, explaining the process they have used</p>	<p>National Curriculum Pupils should be taught to:</p> <ul style="list-style-type: none"> • Explore and evaluate a range of existing products • Evaluate their ideas and products against design criteria 		<p>National Curriculum Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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 	
	<p>Opportunities to look at their and peers' achievements</p> <p>Better / different if...</p> <p>Will it sink / float?</p>	<ul style="list-style-type: none"> • Know / say what a product is • Describe a product (who is it for, what is made from, how is it made, how it works) • Talk about their own work (features, design, opinion) • Describe how their product works • Know the features of familiar products • Give reasons for some features (colour choice, material used, joining technique) • Explain why they chose certain materials, techniques and tools 	<ul style="list-style-type: none"> • Research and evaluate existing products to inform planning • Understand that products are designed for a purpose (e.g. a problem, an audience, an event) • Talk about own and others' work (features, design, opinion) • Explain why they chose certain materials, techniques and tools • Identify what is working well and what can be improved 	<ul style="list-style-type: none"> • Use the ideas from current designers to help with plans • Reflect on designs and develop them bearing in mind the way they will be used (during the process) 	<ul style="list-style-type: none"> • Research and evaluate existing products giving reasons for the decisions of the designers (materials, design, tools, techniques)

Technical Knowledge Knowledge of Designers	ELG Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function	National Curriculum Pupils should be taught to: <ul style="list-style-type: none"> • Build structures, exploring how they can be made stronger, stiffer and more stable • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. 		National Curriculum Pupils should be taught to: <ul style="list-style-type: none"> • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • Apply their understanding of computing to program, monitor and control their products 	
	Make junk models - experiment with joining techniques, range of materials, manipulation of scissors	<ul style="list-style-type: none"> • Explore how moving objects work • Look at wheels, axels, turning mechanisms, hinges or simple levers • Make a product that moves using a turning mechanism (e.g. wheels, winding) or a lever or a hinge (to make a movement) • Know what a designer does • Know the names and the products of some designers • Say what they like and dislike about the product and the designer 	<ul style="list-style-type: none"> • Know the application of mechanisms to create movement • Combine a number of components well in a product • Make a product that uses either electrical / mechanical components • Know that products have a good finish so that a user will find it both useful and attractive • Know some designers from history • Talk about some of the tools, techniques and designs used by the designer 	<ul style="list-style-type: none"> • Use simple circuits to either illuminate or create motion • Choose components that can be controlled by switches • Use other DT skills to create housings for mechanical components • Products are well finished in a way that would appeal to users 	<ul style="list-style-type: none"> • Use science skills (resistance, circuits etc) to alter the way electrical products behave • Know how key events and individuals have influenced the world (in terms of products) • Compare and contrast the work of different designers (e.g. historical and modern)
Cooking and Nutrition	ELG Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function	National Curriculum Pupils should be taught to: <ul style="list-style-type: none"> • Use the basic principles of a healthy and varied diet to prepare dishes • Understand where food comes from. 		National Curriculum Pupils should be taught to: <ul style="list-style-type: none"> • Understand and apply the principles of a healthy and varied diet • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques 	

	<p>Use a range of small tools, including scissors, paint brushes and cutlery</p> <p>Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices</p>			<ul style="list-style-type: none"> Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed 	
	<p>Use knives, peelers etc. safely</p> <p>Understand the importance of good hygiene, hand washing, hair tied back.</p> <p>Make healthy food topic related e.g. Chinese, veg soup, Christmas cakes, porridge, ginger bread</p>	<ul style="list-style-type: none"> With help, use knives safely Use a mixing bowl Be aware of hygiene for cooking Know some things are made and some things are natural Know some things are dangerous to eat raw Use a variety of utensils safely Know where some foods come from Be aware there are different ways to cook Prepare a healthy snack 	<ul style="list-style-type: none"> Select ingredients for a product with reasons Work in a safe, hygienic way Begin to measure out ingredients Understand what is healthy and unhealthy Understand why we need a healthy diet Know where food comes from 	<ul style="list-style-type: none"> Prepare a healthy plate (e.g. Wartime meals and rationing) Boil and bake to cook Use knowledge of the food groups to plan a lunch Explain why they have chosen ingredients in a dish Know heat changes food 	<ul style="list-style-type: none"> Know why we need certain food types Know about local produce Know where different crops can be found around the world and understand the concept of carbon footprints Know different cultures have different diets Design and prepare a balanced plate Know what the food groups are
Vocabulary	cut, design, join, made, make, measure, neat, tidy, tools, work	axel, hinge, joining, lever, rolling, scissors, stitch, strong, turning, wheels	column, designer, evaluate, folding, healthy, mixing, product, purpose, structure, utensil, bake, boil, measure, ingredients	accuracy, hacksaw, hygienic, mechanics, properties, scoring, components, features, plaiting, research, strength, structural, technique, visual, weaving	affordable, appropriate, commercial, connections, desirable, durable, embroidery, experiment, influence, template

Design and Technology Curriculum
Activities could include:

Topic-related projects
Christmas cards
Easter cards
Food technology projects
Calendars
Healthy School Week / Science Week
Christmas fayre