



Kingswood Primary School – DT skills progression

By the end of Key Stage 2, through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in the process of designing and making. They should work in a range of relevant contexts (for example, the home, school, leisure, culture, enterprise, industry and the wider environment).

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

	Key Stage 1	Key Stage 2
Design	• 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	• 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
Make	• select from and use a range of tools and equipment to perform practical tasks [e.g. cutting, shaping, joining and finishing] • select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristic	• select from and use a wider range of tools and equipment to perform practical tasks [e.g. 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
Evaluate	• explore and evaluate a range of existing products • evaluate their ideas and products against design criteria	• 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
Technical knowledge	• build structures, exploring how they can be made stronger, stiffer and more stable • explore and use mechanisms [e.g. levers, sliders, wheels and axles], in their products	• 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 [e.g. series circuits incorporating switches, bulbs, buzzers and motors] - apply their understanding of computing to program, monitor and control their products
Cooking and nutrition	- use the basic principles of a healthy and varied diet to prepare dishes - understand where food comes from	- 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 - understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
DT projects		Food – fruit and vegetables Mechanisms – sliders and levers Mechanisms - wheels and axles Structures – lighthouses Indian food Textiles – sewn mini-beast		Food – Anglo Saxon or Viking feast. Structures - Playground equipment. Electrical systems – design a warning system for an earthquake. Food - Roman feast Mechanism - 3d pop up story board Textiles – make a Tudor tool bag or purse.		Textiles - Sock puppets/peg dolls Food - Bread making Structures - Bridges Food – Greek Mechanical systems –controllable vehicle with pulleys or gears Electrical systems - Victorian merry go round/light up a house	
Design	Work within a range of contexts – story based, home, school, playground Use existing examples to generate ideas Begin to talk about their designs EAD EUMM ELG: Children use what they have learnt about media and materials in original ways, thinking about uses and purposes.	Use pictures and words to convey what they want to design and make and say whether it is for themselves or someone else Use drawings to record ideas as they are developed Select materials from a limited range that will meet the design criteria	Use pictures and words to convey what they want to design and make and say whether it is for themselves or someone else. Say how their products will work and how it is suitable for intended user Add notes to drawings to help explanations Model ideas with kits, reclaimed materials	Generate ideas for an item, considering its purpose and the user/s. Identify a purpose and establish criteria for a successful product. Plan the order of their work before starting. Explore, develop and communicate	Generate ideas, considering the purposes for which they are designing. Make labelled drawings from different views showing specific features. Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and	Generate ideas through brainstorming and identify a purpose for their product. Draw up a specification for their design. Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting	Communicate their ideas through detailed labelled drawings. Develop different design ideas and choose a specification. Explore, develop and communicate aspects of their design proposals by

		Explore ideas by rearranging materials Use kits/reclaimed materials to develop an idea		design proposals by modelling ideas. Make drawings with labels when designing.	suggesting alternative	alternative methods of making if the first attempts fail.	modelling their ideas in a variety of ways. Plan the order of their work, choosing appropriate materials, tools and techniques.
Make	Show some planning skills by suggesting what to do next. Begin to follow safety procedures. Select from a range of materials and components. EAD EUMM ELG: They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Through their explorations, they find out and make decisions about how media and materials can be combined and changed.	Name the tools they are using and begins to select tools for a purpose. Explain what they are making and which materials they are using Describe what they need to do next Join appropriately for different materials and situations e.g. glue, tape, See glue gun used by an adult Use own templates Measure, mark out, cut out and shape materials and components Assemble, join	Select and name the tools needed to work with different materials eg Cut wood/dowel using hacksaw and bench hook, see a glue gun used by an adult, Use a hole punch, insert paper fasteners. Mark out materials to be cut using a template Explain what they are making and which materials they are using Select appropriate technique First.....Next.....Last	Select tools and techniques for making their product. Measure, mark out, cut, score and assemble components with more accuracy. Work safely and accurately with a range of simple tools. Think about their ideas as they progress and be willing change things if this improves their work. Measure, tape or pin, cut and join fabric with some accuracy.	Select appropriate tools and techniques for making their product. Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques. Join and combine materials and components accurately in temporary and permanent ways. Sew using a range of different stitches, weave and knit. Measure, tape or pin, cut and join fabric with some accuracy.	Select appropriate materials, tools and techniques. Measure and mark out accurately. Use skills in using different tools and equipment safely and accurately. Cut and join with accuracy to ensure a good-quality finish to the product. Accurately apply a range of finishing techniques, including those from art and design.	Select appropriate tools, materials, components and techniques. Assemble components make working models Use tools safely and accurately. Construct products using permanent joining techniques. Make modifications as they go along. Pin, sew and stitch materials together

		and combine materials and components	Begin to use finishing techniques	Demonstrate hygienic food preparation and storage. Use finishing techniques. Use glue gun with close supervision	Use simple graphical communication techniques. Use appropriate decoration techniques e.g. appliqué(glued or simple stitches)	Use techniques that involve a number of steps. Demonstrate resourcefulness, e.g. make refinements.	create a product. Achieve a quality product.
Evaluate	Begin to talk about ideas and products they have made Begin to talk about and choose the most suitable products EAD EUMM ELG: Children talk about the ideas and processes which have led them to make designs or products. They can talk about features of their own and others' work, recognising the differences between them and the strengths of others.	Talk about likes and dislikes of existing products. Say what they like and do not like about items they have made and attempt to say why	Give reasons for their likes and dislikes of existing products. Talk and write about their designs as they develop and identify good and bad points and changes made during the process Discuss how closely their finished products meet their design criteria.	Evaluate their product against original design criteria e.g. how well it meets its intended purpose. Disassemble and evaluate familiar products. Identify the strengths and weaknesses of their design ideas	Evaluate their work both during and at the end of the assignment. Evaluate their products carrying out appropriate tests.	Evaluate a product against the original design specification. Evaluate it personally and seek evaluation from others.	Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. Record their evaluations using drawings with labels.
Technical knowledge	Recognise that a range of technology is used in places such as homes and schools Select and use technology for particular purposes Show an interest in toys with buttons and mechanisms Begin to know about the simple working	Recognise a range of technology used at home and school. Can operate simple equipment Know about the movement of simple mechanisms eg wheels, axles, levers and sliders Know how to fold, tear, cut, roll and curl paper and card Understand how free standing structures can be made stronger, stiffer and more stable.	Understand how levers and linkages or pneumatic systems create movement. Understand how simple electrical circuits and components can be used to create functional products. Understand how to program a computer to control their products. Know how to make strong, stiff shell structures.			Understand how cams, pulleys and gears create movement. Understand how more complex electrical circuits and components can be used to create functional products. Understand how to program a computer to monitor changes in the environment / control their products.	

	characteristics of materials and components Begin to understand the movement of simple mechanisms such as levers, sliders and wheels	Recognise that food ingredients should be combined according to their sensory characteristics.		Know that a single fabric shape can be used to make a 3D textiles product. Use appropriate decoration techniques e.g. appliqué(glued or simple stitches) Know how to join textiles with running stitch and understand the need for seam allowance. Know that food ingredients can be fresh, pre-cooked and processed.	Know how to reinforce/strengthen a 3D framework. Know that a 3D textiles product can be made from a combination of fabric shapes. Know that textiles can be joined with a combination of stitching techniques eg back stitch, running stitch, blanket stitch. Know that a recipe can be adapted a by adding or substituting one or more ingredients.
Cooking and nutrition	Begin to recognise that food comes from plants or animals Begin to recognise that everyone should eat at least five portions of fruit and vegetables every day Use techniques for cutting and peeling Know that food ingredients should be combined according to their characteristics	Begin to name and sort food into the five groups on the eatwell plate and understand the need for a variety of foods in a diet Group familiar food products e.g. fruit and vegetables Cut, peel, grate, chop a range of ingredients Work safely and hygienically Measure and weigh food items using non-statutory measures e.g. spoons, cups	Know that food comes from plants or animals. Name and sort food into the five groups on the eatwell plate and recognise the need to eat sufficient fruit and vegetables each day. Know how to prepare and cook simple dishes safely and hygienically without using a heat source. Use a range of simple techniques such as cutting, peeling, grating and chopping a range of ingredients	Know that a healthy diet is made up from a variety and balance of different foods and drinks, as depicted in the ‘eat well’ plate. Know that to be active and healthy, food is needed to provide energy for the body. Measure using grams. Follow a recipe. Know that food is grown, reared and caught in the UK, Europe and the wider world. Know that seasons may affect the food available. Understand how food is processed into ingredients that can be eaten or used in cooking. Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.	Know that recipes can be adapted to change the appearance, taste, texture and aroma. Know that different foods contain different substances - nutrients, water and fibre - that are needed for health. Understand the need for correct storage. Measure accurately. Work out ratios in recipes. Know that food is grown, reared and caught in the UK, Europe and the wider world. Know that seasons may affect the food available. Understand how food is processed into ingredients that can be eaten or used in cooking. Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically

		Begin to use vocabulary related to smell, taste, texture and feel	Begin to develop sensory vocabulary/ knowledge using, smell, taste, texture and feel	Know to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Develop sensory vocabulary/ knowledge using, smell, taste, texture and feel	including, where appropriate, the use of a heat source. Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.		
Vocabulary		Year 1/2		Year 3/4	Year 5/6		
		design designer materials tools brief product evaluate label technology problem-solving <u>CONSTRUCTION</u> boat buoyant (Science) water-proof (Science) stable	<u>TEXTILES</u> textiles needle thread pin pattern piece applique <u>FOOD</u> ingredients hygiene balanced nutritious appealing	design technology product intended user annotated sketch component design criteria computer-aided design <u>CONSTRUCTION</u> net scoring tab accuracy packaging product designer graphic designer shelf-appeal battery circuit switch bulb electrical engineer	<u>TEXTILES</u> pattern piece running stitch cross stitch applique embroidery textile designer <u>FOOD</u> hygiene grown reared Local producer seasonal produce dough knead bake	Design technology product intended user design criteria cross- sectional diagram exploded diagram innovation <u>CONSTRUCTION</u> frame structure triangulation strengthen reinforce architect mechanical system pulley driver follower load transport mechanical engineer	<u>TEXTILES</u> pattern pieces back stitch tension seam allowance turn out fastener fashion designer ethical product corporate social responsibility <u>FOOD</u> hygiene cross contamination local produce seasonality cooking technique deconstructed food