

Design Technology Progression of Skills and Knowledge

Substantive Knowledge – Established facts

Disciplinary Knowledge – Methods and concepts

	EYFS -	Key Stage One	Lower key Stage Two	Upper Key Stage Two
Aims	Creating with materials	The national curriculum for design and technology aims to ensure that all pupils: • develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world • build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users • critique, evaluate and test their ideas and products and the work of others • understand and apply the principles of nutrition and learn how to cook.		
Subject Content	• Share their creations, explaining the process they have used.	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 Make ♣ select from and use a range of tools and equipment to perform practical tasks ♣ select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics Evaluate ♣ explore and evaluate a range of existing products ♣ evaluate their ideas and products against design criteria Cooking and nutrition ♣ use the basic principles of a healthy and varied diet to prepare dishes ♣ understand where food comes from	Design ♣ 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 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 Evaluate ♣ 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 Cooking and nutrition ♣ understand 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	
		Technical knowledge ♣ build structures, exploring how they	Technical knowledge ♣ explore and use mechanisms [for	Technical knowledge ♣ apply their understanding of how to strengthen, stiffen and reinforce more complex structures

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		can be made stronger, stiffer and more stable	example, levers, sliders, wheels and axles], in their products.	♣ understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] ♣ understand and use mechanical systems in their products [pulleys] ♣ apply their understanding of how to strengthen, stiffen and reinforce more complex structures ♣ understand and use mechanical systems in their products [levers and linkages] ♣ understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] ♣ understand and use mechanical systems in their products [gears]			
Concept	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Developing, planning and communicating ideas	Share ideas, resources and skills	Draw on their own experience to help generate ideas Suggest ideas and explain what they are going to do Develop their design ideas applying findings from their earlier research	Develop their design ideas through discussion, observation, drawing and modelling Identify a purpose for what they intend to design and make Identify simple design criteria Make simple drawings and label parts	Disassemble and evaluate familiar product Identify criteria that can be used for their own designs. 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 design proposals by modelling ideas	Evaluate familiar products and identify criteria that can be used for their own designs. 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 suggesting alternative methods of making, if the first attempts fail	Evaluate existing products using results of investigations and information sources, when developing design ideas Generate ideas through mind mapping 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 alternative methods of making if the first attempts fail	Evaluate existing products using results of investigations and information sources, when developing design ideas Communicate their ideas through detailed labelled drawings Develop a design specification Explore, develop and communicate aspects of their design proposals by modelling their ideas Plan the order of their work, choosing appropriate materials, tools and techniques

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Working with tools, equipment, materials and components to make quality products	Develop their small motor skills so that they can use a range of tools competently, safely and confidently	With help measure, mark out, cut and shape a range of materials Use tools eg scissors and a hole punch safely Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape Use simple finishing techniques to improve the appearance of their product	Begin to select tools and materials; use vocab' to name and describe them Measure, cut and score with some accuracy Use hand tools safely and appropriately Assemble, join and combine materials in order to make a product Cut, shape and join fabric to make a simple garment. Use basic sewing techniques Choose and use appropriate finishing techniques	With support, 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 make progress and be willing to change things Tape or pin, cut and join fabric with some accuracy Sew on solid material using a simple running stitch. Use finishing techniques strengthen and improve the appearance of their product using a range of equipment	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	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 Pin, sew and stitch materials together create a product Measure, tape or pin, cut and join fabric with some accuracy Sew using a range of different stitches.	Select appropriate tools, materials, components and techniques Assemble components to make working models Use tools safely and accurately Construct products using permanent joining techniques Make modifications as they go along Achieve a quality product
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Evaluating processes and products	Return and build on their previous learning, refining ideas	Evaluate their product by discussing how well it works in relation to the purpose Evaluate their products by explaining what they would do differently next time.	Evaluate against their design criteria Evaluate their products as they are developed, identifying strengths and possible changes they might make Look at a range of existing products to identify likes and dislikes	Evaluate their product against original design criteria e.g. how well it meets its intended purpose Identify existing products related to theirs.	Evaluate their work both during and at the end of the assignment Evaluate their products carrying out appropriate tests Identify and compare their product with existing products	Evaluate a product against the original design specification Evaluate it personally and seek evaluation from others Compare the successes of other products and identify how it has helped to shape the world	Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests Record their evaluations using drawings with labels Evaluate against their original criteria and suggest ways that their product could be improved Compare the successes and weaknesses of other products and identify how it has helped to shape the world
Food and nutrition	Begin to develop a food vocabulary using taste, smell, texture and feel. Explore familiar food products e.g. fruit and vegetables.	Begin to understand that all food comes from plants or animals. Explore common food sources Start to understand how to name and sort foods into the five groups in Know that everyone should eat at least five portions of fruit and vegetables every day.	Understand that all food comes from plants or animals. Develop understanding of where different foods come from Understand how to name and sort foods into the five groups in Know that everyone should eat at least five portions of fruit	Start to know that food is grown, reared and caught in the UK, Europe and the wider world. Understand how to prepare and cook a variety of dishes including experience of using a heat source.	Understand that food is grown, reared and caught in the UK, Europe and the wider world. Understand how to prepare and cook a variety of predominantly savoury dishes including experience of using a heat source.		Explain how ingredients are grown. Understand that seasons may affect the food available. Explain how food is processed into ingredients that can be eaten or used in cooking. Be able to use a range of techniques such

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		Measure and weigh food items using non-standard measures	and vegetables every day Recognise the need for a variety of food in a diet Demonstrate how to prepare simple dishes safely and hygienically, without using a heat source. Measure and weigh food items using standard measures Make dishes from other countries or cultures.	Begin to use a range of techniques such as mixing, spreading, kneading and baking. Know how a healthy diet is made up from a variety and balance of different food and drink Be able to identify foods which come from the UK and other countries in the world	Begin to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Measure and weigh ingredients appropriately Understand what to do to be hygienic and safe Become familiar with some of the processes that foods go through to preserve them/make them more appealing		as peeling, chopping, slicing, grating, mixing, spreading. Use appropriate tools and equipment, weighing and measuring with scales.
Vocabulary	Materials, models,	Structure, stable appearance,	Mechanism, axle, criteria	Disassemble, evaluate, modify	Components, proposal, product analysis	Specification, annotations, prototype	Modifications, aesthetics