D&T Progression of Skills and Knowledge

National Curriculum Objective	Class 1	Class 2	Class 3
Design *Understand Contexts, users and purposes* KS1 design purposeful, functional, appealing products for themselves and other users based on design criteria KS2 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	• work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment • state what products they are designing and making • say whether their products are for themselves or other users • describe what their products are for • say how their products will work • say how they will make their products suitable for their intended users • use simple design criteria to help develop their ideas	• work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment • describe the purpose of their products • indicate the design features of their products that will appeal to intended users • explain how particular parts of their products work • gather information about the needs and wants of particular individuals and groups • develop their own design criteria and use these to inform their ideas	• carry out research, using surveys, interviews, questionnaires and web-based resources • identify the needs, wants, preferences and values of particular individuals and groups • *develop a simple design specification to guide their thinking*
Generating, developing, modelling and communicating ideas KS1 generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology KS2 generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	• generate ideas by drawing on their own experiences • use knowledge of existing products to help come up with ideas • develop and communicate ideas by talking and drawing • model ideas by exploring materials, components and construction kits and by making templates and mock-ups • use information and communication technology, where appropriate, to develop and communicate their ideas	• share and clarify ideas through discussion • model their ideas using prototypes and pattern pieces • use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas • use computer-aided design to develop and communicate their ideas • generate realistic ideas, focusing on the needs of the user • *make design decisions that take account of the availability of resources*	• generate innovative ideas, drawing on research • *make design decisions, taking account of constraints such as time, resources and cost*
Making *Planning* KS 1 select from and use a range of tools and equipment to perform practical tasks KS 2 select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	• *plan by suggesting what to do next* • select from a range of tools and equipment, *explaining their choices* • select from a range of materials and components according to their characteristics	• select tools and equipment suitable for the task • *explain their choice of tools and equipment in relation to the skills and techniques they will be using* • select materials and components suitable for the task • explain their choice of materials and components according to functional properties and aesthetic qualities • *order the main stages of making*	• *produce appropriate lists of tools, equipment and materials that they need* • *formulate step-by-step plans as a guide to making*
Practical skills and techniques KS1 select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics KS2 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	• follow procedures for safety and hygiene • use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components • measure, mark out, cut and shape materials and components • assemble, join and combine materials and components • use finishing techniques, including those from art and design	• follow procedures for safety and hygiene • use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components • measure, mark out, cut and shape materials and components with some accuracy • assemble, join and combine materials and components with some accuracy • apply a range of finishing techniques, including those from art and design, with some accuracy	• accurately measure, mark out, cut and shape materials and components • accurately assemble, join and combine materials and components • accurately apply a range of finishing techniques, including those from art and design • *use techniques that involve a number of steps* • demonstrate resourcefulness when tackling practical problems
Evaluating *Own ideas and products*	• talk about their design ideas and what they are making	• identify the strengths and areas for development in their ideas and products • consider the views of others, including intended users, to improve their work	

KS1 evaluate their ideas and products against design criteria KS2 evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	• make simple judgements about their products and ideas against design criteria • *suggest how their products could be improved*	• refer to their design criteria as they design and make • use their design criteria to evaluate their completed products	• critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make • *evaluate their ideas and products against their original design specification*
Existing products KS1 explore and evaluate a range of existing products KS2 investigate and analyse a range of existing products	explore: • what products are • who products are for • what products are for • how products work • how products are used • where products might be used • what materials products are made from • what they like and dislike about products	investigate and analyse: • how well products have been designed • how well products have been made • why materials have been chosen • what methods of construction have been used • how well products work • how well products achieve their purposes • how well products meet user needs and wants	
		investigate and analyse: • who designed and made the products • where products were designed and made • when products were designed and made • whether products can be recycled or reused	investigate and analyse: • how much products cost to make • how innovative products are • how sustainable the materials in products are • what impact products have beyond their intended purpose
Key events and individuals KS2 understand how key events and individuals in design and technology have helped shape the world	Not a requirement in KS1	know: • about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	
Technical Knowledge *Making products work* KS 1 build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms KS2 Apply their understanding of how to strengthen, stiffen and reinforce more complex structures Understand and use mechanical systems in their products Understand and use electrical systems in their products Apply their understanding of computing to program, monitor and control their products	know: • about the simple working characteristics of materials and components • about the movement of simple mechanisms such as levers, sliders, wheels and axles • how freestanding structures can be made stronger, stiffer and more stable • *that a 3-D textiles product can be assembled from two identical fabric shapes* • *that food ingredients should be combined according to their sensory characteristics* • *the correct technical vocabulary for the projects they are undertaking*	know: • how to use learning from science to help design and make products that work • how to use learning from mathematics to help design and make products that work • that materials have both functional properties and aesthetic qualities • *that materials can be combined and mixed to create more useful characteristics* • that mechanical and electrical systems have an input, process and output • *the correct technical vocabulary for the projects they are undertaking*	
		know: know: • how mechanical systems such as levers and linkages or cams or pulleys or gears create movement create • how more create movement functional products • how simple electrical circuits and components can be used • • how to program a computer to monitor changes in the functional products control their products • how to program a computer to control their products • • how to make strong, stiff shell structures • *that a 3D textiles product can be made from a combination of fabric shapes* • *that a single fabric shape can be used to make a 3D textiles product • that a recipe can be adapted by adding or substituting one or more • that food ingredients can be fresh, pre-cooked and processed ingredients*	pneumatic systems • how mechanical systems such as complex electrical circuits and components can be used to create environment and how to reinforce and strengthen a 3D framework
Food Technology *Where food comes from* KS 1 Understand where food comes from. KS2 Understand and apply the principles of a healthy and varied diet	know: • that all food comes from plants or animals • that food has to be farmed, grown elsewhere (e.g. home) or caught	know: • that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world	
			know: • that seasons may affect the food available • how food is processed into ingredients that can be eaten or used in cooking
Food preparation, cooking and nutrition KS1 use the basic principles of a healthy and varied diet to prepare dishes	know: • how to name and sort foods into the five groups in The eatwell plate • that everyone should eat at least five portions of fruit and vegetables every day • how to prepare simple dishes safely and hygienically, without using a heat source	know: • how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking	

KS2 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.	• how to use techniques such as cutting, peeling and grating	know: • that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate • that to be active and healthy, food and drink are needed to provide energy for the body	know: • *that recipes can be adapted to change the appearance, taste, texture and aroma* • that different food and drink contain different substances – nutrients, water and fibre – that are needed for health

		Autumn	Spring	Summer
Cycle A	EYFS-Understanding the World	**In the Forest** Explore different materials to develop their ideas about how to use them and what to make Develop their own ideas and decide which materials to use to express them Join different materials and explore different textures	**Toys** Explore different materials to develop their ideas about how to use them and what to make Develop their own ideas and decide which materials to use to express them Join different materials and explore different textures	**Journeys** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function Share their creations, explaining the process they have used
	Class 1 Year 1	**In the Forest** understanding of structures, understanding how structures can be made stronger, stiffer and more stable. They will design, make and evaluate their own snack box for Forest School.	**Toys: Victorians – history focus** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function Explore, use and refine a variety of artistic effects to express their ideas and feelings Return to and build on their previous learning, refining ideas and developing their ability to represent them Share their creations, explaining the process they have used	**Journeys around the world** develop their understanding of mechanisms, wheels and axles. They will design, make and evaluate a moving vehicle.
	Class 2	**Invasion: Romans** designing purposeful, functional, appealing products as well as exploring and using mechanisms [for example, levers, sliders, wheels and axles] just like the Romans did for their chariots and catapults.	**Wild Water** Designing a product suitable for water by considering its purposefulness and functionality based on design criteria. The children will investigate and analyse their product.	**Comparisons: location study** the different cuisines within the continent of Africa. We will be comparing and understanding where food comes from in the UK and in Africa. In DT, we will prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.
	Class 3	**Invaders and Settlers: Anglo-Saxons & Vikings** Techniques of dying and joining textiles to make a model of Anglo-Saxon clothing.	**Survival: Natural Disasters** Use the skills of cutting, shaping and joining materials to make geographical models. Use technical knowledge to apply understanding of how to strengthen and reinforce a more complex structure, thinking about properties of materials using natural materials.	**Discovery: Mayans** Processes involved in growing and processing certain foods. Preparing and cooking dishes within a historical context.

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Cycle B	EYFS-Understanding the World	**You and Me-Where I live**	**Traditional Stories from a range of cultures** They will design, create and evaluate their fabric bunting	**Out and about-Exploring Clun** Food technology is the focus for DT. After exploring a variety of fruit and vegetable products, the children will investigate using different cutting, slicing and peeling tools. They will then design, make and evaluate their own fruit or vegetable product.
	Class 1 Year 1	**You and Me-Where I live**	**Traditional Stories from a range of cultures: Fire of London** They will design, create and evaluate their fabric bunting	**Out and about-Exploring Clun: Local Study** Food technology is the focus for DT. After exploring a variety of fruit and vegetable products, the children will investigate using different cutting, slicing and peeling tools. They will then design, make and evaluate their own fruit or vegetable product.
	Class 2	**Grand Designers: Egyptians** Wat contributed to the ancient Egyptians being great designers. We will explore the creations they invented, inspiring us to design, make and evaluate our own products.	**Extreme Survival: Physical Geography** the constraints when designing and building models and reflect on how they can adapt their design to solve technical problems that people may face in an extreme environment.	**Captivating Creators: Stone Age** using research and developing design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. We will explore only using natural and available resources to build a shelter.

	Class 3	**Britain at War** Understanding seasonality, knowing where and how a variety of ingredients are grown, reared, caught and processed. Preparing and cooking dishes within a historical context using a range of cooking techniques. Design, make and evaluate moving models, using mechanical systems.	**Going Places** Design skills by communicating ideas through annotated sketches, cross-sections and exploded diagrams.	**Legacy: Ancient Greeks** Use of a wider range of tools and materials to create sculptures and models, evaluating our own and others work.

		Autumn	Spring	Summer
Cycle C	C 3	**Crime & Punishment** Take Inspiration from design throughout history to design and evaluate products. Construction: develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding). Mechanics: Convert motion e.g: pulleys or rotary to linear using cams.	**Climate Control** the constraints when designing and building models and reflect on how they can adapt their design to solve technical problems that people may face in a change to our environment & climate.	**Fit for a King?** Work with a variety of fabrics evaluating their design and use. They will design, create and evaluate a fabric design for a King. 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.