Design and Technology Progression

	KS1	Year 3/4	Year 5/6
Design	Describe the purpose of the design and the intended user Describe how the product will work and how it will be suitable for its purpose and user Generate own ideas for design by drawing on own experiences or from reading Use simple design criteria Model ideas by exploring materials, components and construction kits and by making templates and mock-ups Use information and communication technology, where appropriate	Gather information about the needs and wants of particular individuals and groups Identify a purpose and develop design criteria and use these to inform their ideas Share and clarify ideas through discussion Explore, develop and communicate design proposals by modelling ideas; consider materials, tools and techniques Make drawings and diagrams with labels when designing, showing specific features, Begin to use cross-sectional drawings Model their ideas using prototypes and pattern pieces Use computer-aided design	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 Recognise when their products have to fulfil conflicting requirements Generate innovative ideas, drawing on research Make design decisions, taking account of constraints such as time, resources and cost Develop prototypes

Making	Select and use hand tools explaining their choices e.g. scissors, hole punch Select from a range of materials and components according to their characteristics Follow procedures for safety Use and make own templates Measure, mark out, cut out and shape materials and components Assemble, join and combine materials and components Use simple fixing materials e.g. temporary – paper clips tape and permanent – glue, staples Use finishing techniques, including those from art and design	Select tools and equipment suitable for the task Explain 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 Measure, mark out, cut, score and assemble components with more accuracy Measure, tape or pin, cut and join fabric with some accuracy Use finishing techniques to strengthen and improve the appearance of the product using a range of equipment including ICT	Accurately measure, mark out, cut and shape materials and components Pin, sew and stitch materials Accurately assemble, join and combine materials and component using permanent joining techniques Accurately apply a range of finishing techniques, including those from art and design Use techniques that involve a number of steps Make modifications as they make their product Demonstrate resourcefulness when tackling practical problems
Evaluating	Explore and evaluate a range of existing products; what products are, who they are for, how they are made, what materials are used Evaluate their ideas and products against design criteria Talk about their design ideas and what they are making Evaluate their product by discussing how well it works in relation to the purpose Evaluate their products as they are developed, identifying strengths and possible improvements Evaluate their products by discussing the materials and techniques they used	Identify the strengths and weaknesses of their ideas and products Refer back to their design criteria as they design and make Use their design criteria to evaluate their completed products Investigate - how well products have been designed and made; consider materials, methods of construction, how well products work and achieve their purposes, how well products meet user needs and wants Investigate - who designed and made the products, where and when products were designed and made, and whether products can be recycled or reused	Investigate - how much products cost to make, how innovative products are and how sustainable the materials in products are Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make Compare their ideas and products to their original design specification Consider the views of others, including intended users, to improve their work Identify great designers and their work and use research of designers to influence work

Technical Knowledge	Build structures, exploring how they can be made stronger, stiffer and more stable Understand about the simple working characteristics of materials and components Understand about the movement of simple mechanisms including levers, sliders, wheels and axles Know the correct technical vocabulary for the projects they are undertaking Understand how freestanding structures can be made stronger, stiffer and more stable axles Understand that food ingredients should be combined according to their sensory characteristics	Understand how to use learning from science and maths to help design and make products that work Know that materials have both functional properties and aesthetic qualities Know that mechanical and electrical systems have an input, process and output 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 Know how to reinforce/strengthen a 3D framework
Food and Nutrition	Use the basic principles of a healthy and varied diet to prepare dishes Know that food comes from plants or animals and has to be farmed or grown. Use appropriate equipment to weigh and measure ingredients Prepare simple dishes safely and hygienically, without using a heat source Use techniques such as cutting, grating, peeling Name and sort foods into the five groups of the 'eat well' plate Know that everyone should eat at least five portions of fruit and vegetables every day	Understand and apply the principles of a healthy and varied diet Prepare and cook a variety of predominantly savoury dishes, including using a heat source Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking Know where and how a variety of ingredients are grown, reared, caught and processed	Use the basic principles of a healthy and varied diet to prepare dishes Know that different food and drink contain different substances that are needed for health (nutrients, water and fibre) Understand how food is processed into ingredients that can be eaten and cooked Know that seasons may affect the food available