Design and Technology Progression Framework

	Designing	Making	Evaluating	Technical Knowledge	Cooking and Nutrition
Lower school	**Understanding contexts, users and purposes** gather information about the needs and wants of particular individuals and groups develop their own design criteria and use these to inform their ideas **Generating, developing, modelling and communicating ideas** generate realistic ideas, focusing on the needs of the user make design decisions that take account of the availability of resources	**Planning** order the main stages of making **Practical skills and techniques** 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	**Own ideas and products** refer to their design criteria as they design and make use their design criteria to evaluate their completed products **Existing products** 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	**Making products work** how mechanical systems such as levers and linkages or pneumatic systems create movement how simple electrical circuits and components can be used to create functional products how to make strong, stiff shell structures that food ingredients can be fresh, pre-cooked and processed	**Food preparation, cooking and nutrition** that a healthy diet is made up from a variety and balance of different food and drink, as depicted in the eat well plate that to be active and healthy, food and drink are needed to provide energy for the body
Upper school	**Understanding contexts, users and purposes** 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** generate innovative ideas, drawing on research make design decisions, taking account of constraints such as time, resources and cost	**Planning** 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** 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	**Own ideas and 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** 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	**Making products work** how mechanical systems such as cams or pulleys or gears create movement how more complex electrical circuits and components can be used to create functional products how to program a computer to monitor changes in the environment and control their products how to reinforce and strengthen a 3D framework that a recipe can be adapted by adding or substituting one or more ingredients	**Where food comes from** 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** 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

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Across Key stage	**Understanding contexts, users and purposes** Work confidently within a range of contexts, such as the 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 **Generating, developing, modelling and communicating 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	**Planning** 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 **Practical skills and techniques** 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	**Own ideas and products** identify the strengths and areas for development in their ideas and products consider the views of others, including intended users, to improve their work **Existing products** 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	**Making products work** 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	**Where food comes from** 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 **Food preparation, cooking and nutrition** 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