Design and Technology Skills Progression				
	KS2			
Curriculum	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. Technical knowledge • 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 [for example, series circuits incorporating switches, bulbs, buzzers and motors]. • apply their understanding of computing to program, monitor and control their products. Cooking and Nutrition • 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.			
Coverage	**A Year 3 designer can:**	**A Year 4 designer can:**	**A Year 5 designer can:**	**A Year 6 designer can:**
Designing				
Generate, and communicate ideas.	Generate ideas from existing products and design criteria. Design innovative and appealing products that have a clear purpose and are aimed at a specific user. Explain how particular parts of their products work. Communicate ideas through labelled sketches.	Research and use their knowledge of a broad range of existing products to help generate their ideas and make sure they are fit for purpose. Develop several design ideas and explain choices. Create annotated drawing and simple prototypes.	Use their knowledge of a broad range of existing products to help generate their ideas. Design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user. Produce detailed designs considering purpose and user needs.	Use research to inform and develop detailed design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a target market. Independently develop innovative solutions, justifying decisions against design criteria and user requirements.
Making				

Select and use a range of tools and equipment to develop ideas for a user	Experiment by selecting from a range of tools and equipment, explaining their choices. Use a range of tools safely and accurately to cut, shape, join and finish materials. Be introduced to a range of materials and components including construction materials, textiles, ingredients and electrical components. Learn about the functional properties and aesthetic qualities of a range of materials and components.	Select appropriate tools, materials and components according to their functional properties and aesthetic qualities with increasing precision and independence. Use a wider range of materials and components including construction materials, textiles, ingredients and electrical components. Develop skills in using a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures. Assemble, join and combine material and components with some degree of accuracy.	Use tools and materials with greater understanding and confidence. Explain their choices for their selection of tools and materials based on their functional properties and effects. Demonstrate skills in using a range of tools and equipment safely and appropriately and to follow hygiene procedures. Join textiles using a greater variety of stitches.	Know and understand the functional properties and aesthetic qualities of a range of materials and components best suited for the project. Use a wider range of materials and components, including construction materials, textiles, and ingredients assemble, join and combine materials and components with accuracy. Competently use a range of tools and equipment safely and appropriately and to follow hygiene procedures successfully; be able to explain their decisions.
Evaluating				
Investigate and analyse existing products.	Explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose With support, identify strengths and areas for improvement in own and existing products.	Explore what materials/ingredients products are made from and suggest reasons for this. Consider the views of others to improve their work Compare products against design criteria and suggest improvements.	Complete a simple survey of a product analysis and use this to inform their design outcomes. Evaluate their ideas and products against the original design criteria, making changes as needed. Test and refine products throughout the making process.	Complete detailed competitor analysis of other products on the market. Critically evaluate produces considering users, purpose, functionality and innovation.
Understand events and individuals in DT.	Be introduced to key designers.	Begin to understand how designs of individuals in design and technology have helped shape the world.	Know how key designers have influenced products/ designs.	Understand how key events and individuals in design and technology have helped shape the world.
Technical Knowledge				
Technical knowledge	Understand how structures, mechanisms and ingredients work together in products.	Apply understanding of mechanical systems, structures and electrical components.	Understand and use more complex mechanisms, structures and systems.	Apply technical knowledge confidently to solve design problems and improve functionality.
Structures	Understand how structures, mechanisms and ingredients work together in products.	Begin to understand how to strengthen, stiffen and reinforce structures to create a desired outcome for their product. Investigate and apply appropriate methods of reinforcement.	Design structures considering strength, stability and aesthetics.	Use and apply their understanding of how to strengthen, stiffen and reinforce more complex structures to create complex structures that meet a design brief.
Mechanisms	Learn how mechanical systems such as levers and linkages create movement.	Have an awareness of how pneumatic systems that use gas or pressurised air create movement.	Understand and use more complex mechanisms, structures and systems. Investigate cams and mechanisms within products.	Apply a range of mechanisms to create functional products.

		Use and adapt linkages and levers for a purpose.		
Electrical systems	Begin to explore and make simple electrical circuits and components.	Design products using simple electrical systems using inputs and outputs.	Incorporate switches, buzzers and motors into products.	Combine and adapt electrical systems to meet design requirements.
Digital / Computing in D&T	Control simple products using basic programming.	Use digital tools to support research, design and manufacture.	Incorporate programmable components into products.	Apply computing knowledge to design innovative products and systems.
Textiles	Measure, cut and join fabric using simple techniques.	Combine sewing techniques and decorative methods.	Select fabrics and stitching techniques appropriate to purpose.	Design and create high-quality textile products with precision and independence.
Food and Nutrition				
Principles of a healthy and varied diet.	Understand what is meant by 'healthy eating.'	Explain the types of foods on an 'Eatwell' plate and understand the Eatwell Guide and nutritional balance. Know that everyone should eat at least five portions of fruit and vegetables every day.	Understand that to be active and healthy, food and drink are needed to provide energy for the body.	Know some of the consequences of a poor diet. To have experienced a range of cooking techniques and be confident in explaining why some are healthier than others.
Understand seasonality and origin of ingredients	Learn about where common local produce is grown in the UK. 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 and how food is processed into ingredients that can be eaten or used in cooking	Understand the origin of ingredients can come from all around the world and that ingredients that require more heat/ light and specific growing conditions are dependent on the distance near the equator.	Understand the impact of seasonality of ingredients and those which can be grown from overseas. Be able to identify where the origin of ingredients is grown using a map.
Food preparation.	Prepare and cook savoury dishes safely using a range of preparation and cooking techniques.	To talk about which methods are used for different types of food. Use a range of preparation and cooking techniques and talk about how these techniques change the ingredients and their cooking times.	Begin to know that recipes can be adapted to change the appearance, taste, texture and aroma. Adapt recipes and understand seasonality and food provenance.	Plan, prepare and evaluate healthy meals considering nutritional value and budget.