Progression in threshold concepts DT

Threshold concepts	Milestone 1 (Year 1 and 2)	Milestone 2 (Year 3 and 4)	Milestone 3 (Year 5 and 6)
To understand the principles of nutrition and healthy eating	• Say where some food comes from and give examples of food that is grown • Understand that some foods are grown and some are made up of numerous ingredients • Understand the need for a variety of food in a diet • Prepare a healthy food product	• Use a variety of ingredients and techniques to prepare and combine ingredients safely • Evaluate a diet and say whether it is healthy and varied and suggest improvements • Understand what makes a healthy balanced diet, and that different foods and drinks provide different substances the body needs to be healthy and active	• Understand how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable/tasty to eat • Produce a food product with seasonal vegetables
To design purposeful products.	• Design purposeful, functional, appealing products for himself/herself and other users based on design criteria	• Create designs using annotated sketches, cross sectional diagrams and simple computer programmes • Use knowledge of existing products to design a functional and appealing	• Create prototypes to show design ideas evaluating their strengths and weaknesses • Produce a detailed step-by-step plan • Use market research to inform plans

	• Talk with others about how he/she wants to construct a product • Generate, develop, model and communicate his/her ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	product for a particular purpose and audience • Put together step-by-step plan which shows the order and also what equipment and tools he/she needs • Create designs using exploded diagrams • Take account of the ideas of others when designing • Produce a plan and explain it to others	• Generate, develop, model and communicate his/her ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
To make purposeful and attractive products.	• Use a range of simple tools to cut, join and combine materials and components safely • Choose appropriate tools, equipment, techniques and materials from a wide range • Safely measure, mark out, cut and shape materials and components using a range of tools	• Safely measure, mark out, cut, assemble and join with some accuracy • Work accurately to make cuts and holes • Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them • Make sure that a product looks attractive	• Use a range of practical skills to create a product including cutting, drilling, screwing, filing and sanding • Refine and improve products • Justify why he/she selected specific materials • Ensure own product meet all design criteria

	• Measure materials to use in a model or structure		
To evaluate a range of their own and existing products.	• Ask simple questions about existing products and those that he/she has made • Evaluate a product against design criteria • Evaluate and assess existing products and those that he/she has made using a design criteria • Explain what went well with own work • Evaluate an existing product suggesting improvements	• Show that own designs meet a range of requirements • Investigate and analyse existing products and those he/she has made, considering a wide range of factors • Evaluate own product, thinking of both appearance and the way it works • Know how key events/ individuals' designs have shaped the world • Consider how existing products and his/her own finished products might be improved and how well they meet the needs of the intended user	• Make detailed evaluations about existing products and his/her own considering the views of others to improve his/her work • Explain how the final product will appeal to the audience • Evaluate appearance and function against original criteria • Use his/her knowledge of famous designs to further explain the effectiveness of existing products and products he/she have made • Convincingly justify own plan to someone else • Test and evaluate a final product in detail • Think about how the final product could be sold

To develop a deeper technical knowledge	• Make a model stronger by altering shape and structure • Make a product which moves using wheels and axles • Investigate different techniques for stiffening a variety of materials and explore different methods of enabling structures to remain stable • Join things (materials/ components) together in different ways • Explore and use mechanisms e.g. levers, sliders, wheels and axles, in his/her products	• Choose suitable techniques to strengthen a product • Make a product which uses both electrical and mechanical components • Apply techniques he/she has learnt to strengthen structures and explore his/her own ideas • Use knowledge of transference of forces to choose appropriate mechanisms for a product (e.g. levers, winding mechanisms, pulleys and gears) • Understand and use electrical systems in products	• Build more complex 3D structures and apply his/her knowledge of strengthening techniques to make them stronger or more stable • Use a range of tools and equipment expertly • Understand how to use more complex mechanical and electrical systems • Apply his/her own understanding of computing to program, monitor and control his/her product • Use innovative combinations of electronics (or computing) and mechanisms in a design