Design Technology – Key Skills, Knowledge and Vocabulary

Programme of study from National Curriculum

Key Stage 1	Key Stage 2
Design Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. **Make** Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. **Evaluate** Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria. **Technical knowledge** Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	**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

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

Key stage 1

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from

Key stage 2

- 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.

Progression of Skills

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Use/ explore/ research	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function	• Use levers and sliders	• Explore and use mechanisms (levers, sliders, wheels and axles) in his/ her products • Explore and evaluate a range of existing products	• Investigate and analyse a range of existing products	• Investigate similar products to the one to be made to give starting points for a design	• Understand how key events and individuals in design and technology have shaped the world	• Use market research to inform plans
Design	• Can talk about their ideas • Can talk about what they want their design to do • Can make marks for their design and give meanings to the marks they make •	• Use pictures and words to describe what he/she wants to do • Choose materials and explain why they are being used • Generate, develop, model and communicate his/her ideas through talking, drawing, templates and, where appropriate , information and communication technology	• Generate ideas and recognise characteristics of familiar products • Design purposeful, functional, appealing products for himself/ herself and other users based on design criteria. • Choose materials and explain why they are being used depending on their characteristics	• Complete a plan that shows the order and also what equipment and tools he/she needs	• Demonstrate that his/ her design meets a range of requirements • Explain how he/ she has selected appropriate materials and components to create a finished product that will be of good quality.	• 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 diagram, prototypes, pattern pieces and computer-aided design
Make	• Can choose from a selection of materials • Can use glue, bluetac, masking tape	• Select from and use a range of tools and equipment to perform practical tasks	• Join materials together as part of a moving structure • Select from and use a wide	• Select from and use a wider range of tools and equipment to perform	• Select and use a wide range of tools to perform specific effects based on their design requirements (joining, finishing, sanding)	• Select from and use a wider range of materials, including construction materials, textiles and ingredients,	• Create prototypes to show his/ her ideas • Select from and use a wider range of materials and components, including

	and sellotape to join different materials together • Use a range of small tools, including scissors, paint brushes and cutlery;	(cutting, shaping, joining and finishing)	range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	practical tasks (cutting, shaping, joining and finishing accurately)		according to their functional properties	construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities • Make modifications to the original design as he/ she proceeds
Evaluate	• Can say what is good about their own or others' work. • Share their creations, explaining the process they have used;	• Evaluate his/her ideas and products	• Evaluate a range of existing products • Evaluate his/her ideas and products against design criteria	• Consider how the finished product might be improved and how well it meets the needs of the user	• Generate alternative plans and expound on the good points and draw backs of his/ her original design • Explain how his/ her choices of materials and components have contributed to the aesthetic qualities of his/ her finished product	• Evaluate his/ her ideas and products against his/ her own design criteria including the pros and cons of the finished product (functionally and aesthetically)	• Evaluate his/ her ideas and products against his/ her own design criteria and consider the views of others to improve his/ her work.
Technical knowledge	• Talks about why things happen and how things work.	• Can identify sliders/ levers in their models	• Build structures, exploring how they can be made stronger, stiffer and more stable	• Use equipment and tools accurately • Join and combine materials and components accurately in temporary and permanent way • Strengthen frames using diagonal struts	• Cut and join with accuracy to ensure a high quality finish to his/ her product • Apply his/ her understanding of how to strengthen, stiffen and reinforce more complex structures • Use a simple circuit in his/ her product	• Construct products using different joining techniques • Use tools and materials precisely • Understand and use electrical systems in his/ her products (series circuits incorporating switches, bulbs, buzzers and motors) •	• Understand and use mechanical systems in his/ her products (gears, pulleys, cams, levers and linkages) • Apply his/ her understanding of computing to program, monitor and control his/ her product •
Cooking and Nutrition	• Eats a healthy range of foods and understands need for variety in food.	• Cut food safely • Measure and weigh food items- using informal methods	• Group familiar food groups (fruit and veg) • Understand the need for a variety of food in a diet	• Say what to do to be hygienic and safe • Measure and weigh ingredients appropriately • Understand what makes a healthy and balanced diet and that different foods and drinks provide different substances the body needs to be healthy and active	• Begin to read and understand food labels • Understand seasonality and know how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable/ tasty to eat	• Use information on food labels to inform choices • Understand some of the basic processes to get food from farm to plate • Taste a range of ingredients and food items to develop a food vocabulary when designing	• Join and combine ingredients appropriately (beating, rubbing etc.) • Understand the main food groups and the different nutrients that are important for health • Know appropriate portion sizes and the importance of not skipping meals, including breakfast
		Vocabulary					
	Plan, idea, make, build, stick, glue, sellotape, paper, card, draw, lines	design, purpose, product, function, materials, evaluate, needle, thread, stab stitch, wool	Fruit, vegetable, sugars, fats, carbohydrates, meat, dairy, Product, functional, appealing, design, criteria, drawings, mock-ups, materials, function, needle, thread, stab stitch, running stitch, evaluate	*Protein, vitamins, minerals, balanced, energy, back stitch*, diagonal, strut, packaging, appealing, design, seasonality, rearing, processing, tools, cutting, joining and finishing,	To know names of seasonal vegetables and fruits grown in the kitchen (this will be dependent on the time of the year when the topic is delivered) garden, seasonal, seed, seedling, germinate, seasonality, Rearing, processing rearing, gears, levers, linkages, CAM, effort, beam, fulcrum, load.	Market audience, Gears, levers, linkages, cams, pulleys, series circuits, CAD design Design, purpose, product, function, templates, patterns, to know a range of textile names and methods of joining textiles including sewing. Product, functional, appealing, design, criteria, drawings, mock-ups, materials, finishing.	Product, functional, appealing, design, criteria, drawings, cross sectional, exploded diagrams, mock-ups. Healthy, balanced, meals, diet, mix, beat, bake, roast, fry, nutrients, portions, healthy plate,