



| Key | Key Stage 1 | Lower Key Stage 2 | Upper Key Stage 2 |
|---|--|---|--|
|  <p>Master Practical Skills</p> | <p>Materials</p> <ul style="list-style-type: none"> Select from a range of tools and equipment Select from and use a wide range of materials and components including construction materials, textiles and ingredients, according to their characteristics Cut materials safely using tools provided Measure and mark out to the nearest centimetre Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling) Demonstrate a range of joining techniques (such as gluing, using hinges or combining materials to strengthen) | <p>Materials</p> <ul style="list-style-type: none"> Select from and use a wide range of tools and equipment Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties Cut materials accurately and safely by selecting appropriate tools Measure and mark out to the nearest millimetre Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut-outs) Select appropriate joining techniques | <p>Materials</p> <ul style="list-style-type: none"> Select from and use a wide range of tools and equipment Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or using a more precise scissor cut after roughly cutting out a shape). Show an understanding of the qualities of materials in order to choose appropriate tools to cut and shape (e.g. the nature of fabric may require sharper scissors than would be used to cut paper) |
| | <p>Structures</p> <ul style="list-style-type: none"> Practise drilling, screwing, gluing and nailing materials to make, strengthen and stabilise products. | <p>Structures</p> <ul style="list-style-type: none"> Choose suitable techniques to construct products or to repair items Strengthen and stabilise materials using suitable techniques | <p>Structures</p> <ul style="list-style-type: none"> Develop an increasing knowledge of how to strengthen and stabilise products Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding) |
| | <p>Mechanisms</p> <ul style="list-style-type: none"> Explore and create products using levers, wheels and winding mechanisms | <p>Mechanisms</p> <ul style="list-style-type: none"> Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as linked levers or pneumatics) | <p>Mechanisms</p> <ul style="list-style-type: none"> Convert rotary motion to linear using cams Use innovative combinations of electronics (or computing) and mechanics in product designs |
| | | <p>Electrics and computing</p> <ul style="list-style-type: none"> Create products with series and parallel circuits Control and monitor models using apps designed for this purpose | <p>Electrics and computing</p> <ul style="list-style-type: none"> Create products using electronics kits that employ a number of components (such as LEDs and resistors) Write code to control and monitor models or products |
| | <p>Food and nutrition</p> <ul style="list-style-type: none"> Use the basic principles of a healthy and varied diet to prepare dishes Cut, peel and grate ingredients safely and hygienically Measure or weigh using measuring cups or electronic scales Assemble and cook ingredients Understand where food comes from | <p>Food and nutrition (<i>predominantly creating savoury dishes</i>)</p> <ul style="list-style-type: none"> Understand and apply the principles of a healthy and varied diet Develop an understanding of seasonality and how and where ingredients are grown and processed Prepare ingredients hygienically using appropriate utensils Measure ingredients accurately to the nearest gram Follow a recipe Assemble and cook ingredients (controlling the temperature of the hob, if cooking) | <p>Food and nutrition (<i>predominantly creating savoury dishes</i>)</p> <ul style="list-style-type: none"> Understand and apply the principles of a healthy and varied diet to all planning and cooking Understand seasonality and how and where a variety of ingredients are grown and processed Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms) Measure accurately and calculate ratios of ingredients to scale up or down from a recipe Demonstrate a range of baking and cooking techniques Create and refine recipes, including ingredients, methods, cooking times and temperature |
|  <p>Inspiration from Design</p> | <ul style="list-style-type: none"> Explore objects and designs to identify likes and dislikes Suggest improvements to existing designs Explore how products have been created | <ul style="list-style-type: none"> Investigate a range of existing products Understand how key events in D&T have helped to shape the world Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques to generate ideas for designs) Improve upon existing designs, giving reasons for choices Use research to develop design criteria. Disassemble products to understand how they work | <ul style="list-style-type: none"> Investigate and analyse a range of existing products Understand how key events and individuals in D&T have helped to shape the world Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices Create innovative designs that improve upon existing products Evaluate the design of products so as to suggest improvements to the user experience |
|  <p>Design, Make, Evaluate, Improve</p> | <ul style="list-style-type: none"> In a range of relevant contexts, design functional products that have a clear purpose and an intended user (which meet design criteria) Generate and communicate ideas through talking, drawing, mock-ups and IT Make appealing products Demonstrate resilience needed to make products, refining the design as work progresses Use software to design Evaluate ideas and products against design criteria | <ul style="list-style-type: none"> In a range of relevant contexts, design with purpose by identifying opportunities to design (meeting design criteria) Generate and communicate ideas through discussion, annotated sketches, exploded diagrams, pattern pieces, mock-ups and IT Make functional products by working efficiently (such as by carefully selecting materials) Make appealing products Demonstrate resilience - refine work and techniques as work progresses, continually evaluating the product design Use apps to design and represent product design | <ul style="list-style-type: none"> Design with the specific user/s in mind, motivated by the service a product will offer (rather than simply for profit) Generate and communicate ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and computer-aided design Demonstrate resilience - make innovative products through stages of prototypes, making continual refinements Ensure products have a high-quality finish, using art skills where appropriate Use prototypes, cross-sectional diagrams and computer-aided designs to represent designs |