



## Design and Technology - Key Concepts Overview

Key Concepts	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Design</b> 	<p>I generate ideas by drawing on my own experiences and using knowledge of existing products</p> <p>I can state what my product is and who it is for (myself or others)</p> <p>I am beginning to generate and communicate my ideas through talking, drawing and the use of templates and mock ups</p> <p>I design purposeful, functional and appealing products that are based on given design criteria</p> <p>I explore a variety of materials, components and construction kits</p>	<p>I can state what my product is for and how it will work</p> <p>I can explain how my product is suitable for its intended user</p> <p>I use simple design criteria to help develop their ideas</p> <p>I generate and communicate my ideas through simple drawings and labels (and including methods mentioned in Y1)</p> <p>I design purposeful, functional and appealing products that are based on agreed design criteria</p> <p>I am beginning to use ICT to support the design process</p>	<p>I generate realistic ideas, focused on the needs of the user</p> <p>I can indicate the design features of my products that will appeal to intended users</p> <p>I am beginning to develop my own design criteria and use these to inform my ideas</p> <p>I share and clarify ideas through discussion</p> <p>I can describe the purpose of my products and explain how particular parts work</p> <p>I can use computer-aided design to develop and communicate my ideas</p> <p>I model my ideas using prototypes and pattern pieces</p> <p>I can use annotated sketches and cross-sectional drawings to develop and communicate my ideas</p>	<p>I can gather information about the needs and wants of particular individuals and groups</p> <p>I can use annotated sketches and cross-sectional drawings to develop and communicate my ideas</p> <p>I can make design decisions that take account of the availability of resources</p> <p>I can develop my own design criteria and use these to inform my ideas</p>	<p>I can identify the needs, wants, preferences and values of particular individuals and groups</p> <p>I can use annotated sketches and cross-sectional drawings and exploded diagrams to develop and communicate my ideas</p> <p>I generate innovative ideas, drawing on research</p>	<p>I can carry out research, using surveys, interviews, questionnaires and web-based resources</p> <p>I can develop a simple design specification to guide my thinking</p> <p>I can make design decisions, taking account of constraints such as time, resources and cost individuals and groups</p>

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<div style="text-align: center;">  </div>	<p>I can plan by suggesting what to do next</p> <p>I can select from a range of tools and equipment</p> <p>I can select from and use a range of materials and components (including construction materials and kits, textiles, food ingredients and mechanical components)</p> <p>I follow procedures for safety and hygiene</p> <p>I can cut and shape materials and components</p> <p>I am beginning to measure and mark out materials and components</p> <p>I can assemble, join and combine materials and components</p>	<p>I can select from a range of tools and equipment, explaining their choices</p> <p>I can measure, mark out, cut and shape materials and components</p> <p>I can assemble, join and combine materials and components</p> <p><b>I can use finishing techniques, including those from art and design</b></p>	<p>I select tools and equipment suitable for the task</p> <p>I can order the main stages of making</p> <p>I can measure, mark out, cut and shape materials and components with some accuracy</p> <p>I can use a wider range of materials and components than KS1, including mechanical components</p> <p>I can explain my choice of tools and equipment in relation to the skills and techniques I will be using</p> <p>I can assemble, join and combine materials and components with some accuracy</p> <p><b>I can apply a range of finishing techniques, including those from art and design, with some accuracy</b></p>	<p>I can explain my choice of materials and components according to functional properties and aesthetic qualities</p> <p><b>I can apply a range of finishing techniques, including those from art and design, with some accuracy</b></p>	<p>I can produce appropriate lists of tools, equipment and materials that I need</p> <p>I can use techniques that involve a number of steps</p> <p>I can select materials and components suitable for the task</p> <p>I can demonstrate resourcefulness when tackling practical problems</p> <p><b>I can apply a range of finishing techniques, including those from art and design, with some accuracy</b></p>	<p>I can formulate step-by-step plans as a guide to making</p> <p>I can use a wider range of materials and components than KS1, including electrical components and textiles</p> <p><b>I can apply a range of finishing techniques, including those from art and design, with some accuracy</b></p>
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<p><b>Evaluate</b></p> 	<p>I can talk about my design ideas and what I am making</p> <p>I can suggest how their products could be improved</p> <p>I am able to explore; what products are for who products are for what products are for how products work what materials products are made from</p>	<p>I can make simple judgements about their products and ideas against design criteria</p> <p>I am able to explore; what they like and dislike about products where products might be used</p>	<p>I can identify the strengths and areas for development in my ideas and products</p> <p>I refer to the design criteria as I design and make</p> <p>I use my design criteria to evaluate my completed products</p> <p>I can identify the strengths and areas for development in my ideas and products</p> <p>I can investigate and analyse how well products have been designed and made</p> <p>I can investigate and analyse what methods of construction have been used</p> <p>I can investigate and analyse how well products work and how well they achieve their purpose</p> <p><b>I know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</b></p>	<p>I consider the views of others, including intended users, to improve my work</p> <p>I can investigate and analyse how well products meet user needs and wants</p> <p>I can investigate and analyse who designed and made the products</p> <p>I can investigate and analyse where and when products were designed and made</p> <p>I can investigate and analyse why materials have been chosen</p> <p>I can investigate and analyse whether products can be recycled or reused</p> <p><b>I know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</b></p>	<p>I can critically evaluate the quality of the design, manufacture and fitness for purpose of my products as I design and make</p> <p>I can evaluate my ideas and products against my original design specification</p> <p>I can investigate and analyse how sustainable the materials in products are</p> <p>I can investigate and analyse what impact products have beyond their intended purpose</p> <p><b>I know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</b></p>	<p>I can investigate and analyse how much products cost to make</p> <p>I can investigate and analyse how innovative products are</p> <p><b>I know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</b></p>
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## Design and Technology - Key Concepts Overview

<p><b>Technical Knowledge</b></p> 	<p>I know about the simple working characteristics of materials and components</p> <p>I know about the movement of simple mechanisms such as wheels and axles</p> <p><b>I know the correct technical vocabulary for the projects they are undertaking</b></p>	<p>I know how freestanding structures can be made stronger, stiffer and more stable</p> <p><b>I know the correct technical vocabulary for the projects they are undertaking</b></p>	<p>I know that materials have both functional properties and aesthetic qualities</p> <p>I know how to make strong, stiff, shell structures</p> <p>I know how mechanical systems such as cams or pulleys or gears create movement</p> <p>I know about the movement of simple mechanisms such as levers and sliders</p> <p><b>I know the correct technical vocabulary for the projects they are undertaking</b></p>	<p>I know that materials can be combined and mixed to create more useful characteristics</p> <p>I know how to use learning from science to help design and make products that work</p> <p>I know that mechanical and electrical systems have an input, process and output</p> <p>I know how simple electrical circuits and components can be used to create functional products</p> <p><b>I know the correct technical vocabulary for the projects they are undertaking</b></p>	<p>I know how to reinforce and strengthen a 3D framework</p> <p>I know that food ingredients can be fresh, pre-cooked and processed</p> <p>I know that a recipe can be adapted by adding or substituting one or more ingredients</p> <p>I know how mechanical systems such as levers and linkages or pneumatic systems create movement</p> <p><b>I know the correct technical vocabulary for the projects they are undertaking</b></p>	<p>I know how to use learning from mathematics to help design and make products that work</p> <p>I know that a single fabric shape can be used to make a 3D textiles product</p> <p>I know that a 3D textiles product can be made from a combination of fabric shapes</p> <p>I know how more complex electrical circuits and components can be used to create functional products</p> <p>I know how to program a computer to monitor changes in the environment and control their products</p> <p><b>I know the correct technical vocabulary for the projects they are undertaking</b></p>
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<p><b>Cooking and nutrition</b></p> 	<p>I know that all food comes from plants or animals</p> <p>I know that food has to be farmed, grown elsewhere (e.g. home) or caught</p> <p>I know that everyone should eat at least five portions of fruit and vegetables every day</p> <p>I can demonstrate how to prepare simple dishes safely and hygienically, without using a heat source</p>	<p>I can name and sort foods into the five groups in The Eatwell Plate</p> <p>I know that everyone should eat at least five portions of fruit and vegetables every day</p> <p>I know how to use techniques such as cutting, peeling and grating</p> <p>I know that food ingredients should be combined according to their sensory characteristics</p>	<p>I know 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</p> <p>I know that seasons may affect the food available</p> <p>I can demonstrate how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</p>	<p>I can demonstrate how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</p> <p>I know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell plate</p> <p>I know that to be active and healthy, food and drink are needed to provide energy for the body</p>	<p>I know how food is processed into ingredients that can be eaten or used in cooking</p> <p>I can demonstrate how recipes can be adapted to change the appearance, taste, texture and aroma</p>	<p>I know that different food and drink contain different substances – nutrients, water and fibre – that are needed for health</p>
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