

|           |   | Key Stage 1  | Lower Key Stage 2  | Upper Key Stage 2   |
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| Designing | Understanding context, users and purpose                  | <ul style="list-style-type: none"> <li>work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment</li> <li>state what products they are designing and making</li> <li>say whether their products are for themselves or other users</li> <li>describe what their products are for</li> <li>say how their products will work</li> <li>say how they will make their products suitable for their intended users</li> <li>use simple design criteria to help develop their ideas</li> </ul> | <p>Throughout KS2 pupils should:</p> <ul style="list-style-type: none"> <li>work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment</li> <li>describe the purpose of their products</li> <li>indicate the design features of their products that will appeal to intended users</li> <li>explain how particular parts of their products work</li> </ul> <p>In early KS2 pupils should <b>also</b>:</p> <ul style="list-style-type: none"> <li>gather information about the needs and wants of particular individuals and groups</li> <li>develop their own design criteria and use these to inform their ideas</li> </ul> | <p>In late KS2 pupils should <b>also</b>:</p> <ul style="list-style-type: none"> <li>carry out research, using surveys, interviews, questionnaires and web-based resources</li> <li>identify the needs, wants, preferences and values of particular individuals and groups</li> <li><i>develop a simple design specification to guide their thinking</i></li> </ul> |
|           | Generating, developing, modelling and communicating ideas | <ul style="list-style-type: none"> <li>generate ideas by drawing on their own experiences</li> <li>use knowledge of existing products to help come up with ideas</li> <li>develop and communicate ideas by talking and drawing</li> <li>model ideas by exploring materials, components and construction kits and by making templates and mock-ups</li> <li>use information and communication technology, where appropriate, to develop and communicate their ideas</li> </ul>  | <p>Throughout KS2 pupils should:</p> <ul style="list-style-type: none"> <li>share and clarify ideas through discussion</li> <li>model their ideas using prototypes and pattern pieces</li> <li>use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas</li> <li>use computer-aided design to develop and communicate their ideas</li> </ul> <p>In early KS2 pupils should <b>also</b>:</p> <ul style="list-style-type: none"> <li>generate realistic ideas, focusing on the needs of the user</li> <li><i>make design decisions that take account of the availability of resources</i></li> </ul>  | <p>In late KS2 pupils should <b>also</b>:</p> <ul style="list-style-type: none"> <li>generate innovative ideas, drawing on research</li> <li><i>make design decisions, taking account of constraints such as time, resources and cost</i></li> </ul>  |
| Making    | Planning  | <ul style="list-style-type: none"> <li><i>plan by suggesting what to do next</i></li> <li>select from a range of tools and equipment, <i>explaining their choices</i></li> <li>select from a range of materials and components according to their characteristics</li> </ul>   | <p>Throughout KS2 pupils should:</p> <ul style="list-style-type: none"> <li>select tools and equipment suitable for the task</li> <li><i>explain their choice of tools and equipment in relation to the skills and techniques they will be using</i></li> <li>select materials and components suitable for the task</li> <li>explain their choice of materials and components according to functional properties and aesthetic qualities</li> </ul> <p>In early KS2 pupils should <b>also</b>:</p> <ul style="list-style-type: none"> <li><i>order the main stages of making</i></li> </ul>  | <p>In late KS2 pupils should <b>also</b>:</p> <ul style="list-style-type: none"> <li><i>produce appropriate lists of tools, equipment and materials that they need</i></li> <li><i>formulate step-by-step plans as a guide to making</i></li> </ul>   |

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|  | <p><b>Practical Skill and Techniques</b></p> | <ul style="list-style-type: none"> <li>• follow procedures for safety and hygiene</li> <li>• use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components</li> <li>• measure, mark out, cut and shape materials and components</li> <li>• assemble, join and combine materials and components</li> <li>• use finishing techniques, including those from art and design</li> </ul> | <p>Throughout KS2 pupils should:</p> <ul style="list-style-type: none"> <li>• follow procedures for safety and hygiene</li> <li>• use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</li> </ul> <p>In early KS2 pupils should <b>also</b>:</p> <ul style="list-style-type: none"> <li>• measure, mark out, cut and shape materials and components with some accuracy</li> <li>• assemble, join and combine materials and components with some accuracy</li> <li>• apply a range of finishing techniques, including those from art and design, with some accuracy</li> </ul>  | <p>In late KS2 pupils should <b>also</b>:</p> <ul style="list-style-type: none"> <li>• accurately measure, mark out, cut and shape materials and components</li> <li>• accurately assemble, join and combine materials and components</li> <li>• accurately apply a range of finishing techniques, including those from art and design</li> <li>• <i>use techniques that involve a number of steps</i></li> <li>• demonstrate resourcefulness when tackling practical problems</li> </ul> |
| <p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>Evaluating</b></p> | <p><b>Own ideas and products</b></p>         | <ul style="list-style-type: none"> <li>• talk about their design ideas and what they are making</li> <li>• make simple judgements about their products and ideas against design criteria</li> <li>• <i>suggest how their products could be improved</i></li> </ul>  | <p>Throughout KS2 pupils should:</p> <ul style="list-style-type: none"> <li>• identify the strengths and areas for development in their ideas and products</li> <li>• consider the views of others, including intended users, to improve their work</li> </ul> <p>In early KS2 pupils should <b>also</b>:</p> <ul style="list-style-type: none"> <li>• refer to their design criteria as they design and make</li> <li>• use their design criteria to evaluate their completed products</li> </ul>   | <p>In late KS2 pupils should <b>also</b>:</p> <ul style="list-style-type: none"> <li>• critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make</li> <li>• <i>evaluate their ideas and products against their original design specification</i></li> </ul>  |
|  | <p><b>Existing products</b></p>              | <ul style="list-style-type: none"> <li>• what products are</li> <li>• who products are for</li> <li>• what products are for</li> <li>• how products work</li> <li>• how products are used</li> <li>• where products might be used</li> <li>• what materials products are made from</li> <li>• what they like and dislike about products</li> </ul>  | <p>Across KS2 pupils should investigate and analyse:</p> <ul style="list-style-type: none"> <li>• how well products have been designed</li> <li>• how well products have been made</li> <li>• why materials have been chosen</li> <li>• what methods of construction have been used</li> <li>• how well products work</li> <li>• how well products achieve their purposes</li> <li>• how well products meet user needs and wants</li> </ul> <p>In early KS2 pupils should <b>also</b> investigate and analyse:</p> <ul style="list-style-type: none"> <li>• who designed and made the products</li> <li>• where products were designed and made</li> <li>• when products were designed and made</li> <li>• whether products can be recycled or reused</li> </ul> | <p>In late KS2 pupils should <b>also</b> investigate and analyse:</p> <ul style="list-style-type: none"> <li>• how much products cost to make</li> <li>• how innovative products are</li> <li>• how sustainable the materials in products are</li> <li>• what impact products have beyond their intended purpose</li> </ul>   |

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| <b>Technical Knowledge</b> | <b>Making products work</b>  | See subject specific skills | <p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> <li>• how to use learning from science to help design and make products that work</li> <li>• how to use learning from mathematics to help design and make products that work</li> <li>• that materials have both functional properties and aesthetic qualities</li> <li>• <i>that materials can be combined and mixed to create more useful characteristics</i></li> <li>• <i>the correct technical vocabulary for the projects they are undertaking</i></li> </ul> | See previous |
| <b>Individuals</b>         | <b>Inventors, designers, engineers, chefs, manufacturers, milestones</b> | Not a requirement in KS1    | <p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> <li>• about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products</li> </ul>   | See previous |

