



DESIGN TECHNOLOGY

LEARNING LADDER



DT Learning Ladder

Explore

Discover

Create

	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
Design	<p>Understanding contexts, users and purposes</p> <p>Work confidently within a range of contexts, such as imaginary, story-based. Home, school, gardens, playgrounds, local community, industry and the wider environment</p> <p>State what products they are designing and making</p> <p>Say whether their products are for themselves or other users</p> <p>Describe what their products are for</p> <p>Say how their products will work</p> <p>Say how they will make their products suitable for intended users</p> <p>Use simple design criteria to help develop their ideas</p>	<p>Understanding contexts, users and purposes</p> <p>Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment</p> <p>Describe the purpose of their products</p> <p>Indicate the design features of their products that will appeal to intended users</p> <p>Explain how particular parts of their products work</p> <p>Gather information about the needs and wants of particular individuals and groups</p> <p>Develop their own design criteria and use these to inform their ideas</p>	<p>Understanding contexts, users and purposes</p> <p>Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment</p> <p>Describe the purpose of their products</p> <p>Indicate the design features of their products that will appeal to intended users</p> <p>Explain how particular parts of their products work</p> <p>Carry out research, using surveys, interviews, questionnaires and web-based resources</p> <p>Identify the needs, wants, preferences and values of particular individuals and groups</p> <p><i>Develop a simple design specification to guide their thinking</i></p>
	<p>Generating, developing, modelling and communicating ideas</p> <p>Generate ideas by drawing on their experience</p> <p>Use knowledge of existing products to help come up with ideas</p> <p>Develop and communicate ideas by talking and drawing</p> <p>Model ideas by exploring materials, components and construction kits and by making templates and mockups</p> <p>Use information and communication technology, where appropriate, to develop and communicate their ideas</p>	<p>Generating, developing, modelling and communicating ideas</p> <p>Share and clarify ideas through discussion</p> <p>Model their ideas using prototypes and pattern pieces</p> <p>Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas</p> <p>Use computer-aided design to develop and communicate their ideas</p> <p>Generate realistic ideas, focusing on the needs of the user</p> <p>Make design decisions that take account of the availability of resources</p>	<p>Generating, developing, modelling and communicating ideas</p> <p>Share and clarify ideas through discussion</p> <p>Model their ideas using prototypes and pattern pieces</p> <p>Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas</p> <p>Use computer-aided design to develop and communicate their ideas</p> <p>Generate innovative ideas, drawing on research</p> <p>Make design decisions, taking account of constraints such as time, resources and cost</p>

Make	<p>Planning</p> <p><i>Plan by suggesting what to do next</i></p> <p>Select from a range of tools and equipment, explaining their choices</p> <p>Select from a range of materials and components according to their characteristics</p>	<p>Planning</p> <p>Select tools and equipment suitable for the task</p> <p><i>Explain their choice of tools and equipment in relation to the skills and techniques they will be using</i></p> <p>Select materials and components suitable for the task</p> <p>Explain their choice of materials and components according to functional properties and aesthetic qualities</p> <p><i>Order the main stages of making</i></p> <p><i>Refer to their design criteria as they design and make</i></p>	<p>Planning</p> <p>Select tools and equipment suitable for the task</p> <p><i>Explain their choice of tools and equipment in relation to the skills and techniques they will be using</i></p> <p>Select materials and components suitable for the task</p> <p>Explain their choice of materials and components according to functional properties and aesthetic qualities</p> <p><i>Produce appropriate lists of tools, equipment and materials that they need</i></p> <p><i>Formulate step-by-step plans as a guide to making</i></p> <p><i>Refer to their design criteria as they design and make</i></p>
	<p>Practical skills and techniques</p> <p>Follow procedures for safety and hygiene</p> <p>Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components</p> <p>Measure, mark out, cut and shape materials and components</p> <p>Assemble, join and combine materials and components</p> <p>Use finishing techniques, including those from art and design</p>	<p>Practical skills and techniques</p> <p>Follow procedures for safety and hygiene</p> <p>Use a wider range of materials and components than KSI, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</p> <p>Measure, mark out, cut and shape materials and components with some accuracy</p> <p>Assemble, join and combine materials and components with some accuracy</p> <p>Apply a range of finishing techniques, including those from art and design, with some accuracy</p>	<p>Practical skills and techniques</p> <p>Follow procedures for safety and hygiene</p> <p>Use a wider range of materials and components than KSI, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</p> <p>Accurately measure, mark out, cut and shape materials and components</p> <p>Accurately assemble, join and combine materials and components</p> <p>Accurately apply a range of finishing techniques, including those from art and design</p> <p><i>Use techniques that involve a number of steps</i></p> <p>Demonstrate resourcefulness when tackling practical problems</p>

Evaluate	<p>Own ideas and products</p> <p>Talk about their design ideas and what they are making</p> <p>Make simple judgements about their products and ideas against design criteria</p> <p><i>Suggest how their products could be improved</i></p>	<p>Own ideas and products</p> <p>Identify the strengths and areas for development in their ideas and products</p> <p>Consider the views of others, including intended users, to improve their work</p> <p>Use their design criteria to evaluate their completed products</p>	<p>Own ideas and products</p> <p>Identify the strengths and areas for development in their ideas and products</p> <p>Consider the views of others, including intended users, to improve their work</p> <p>Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make</p> <p>Evaluate their ideas and products against their original design specification</p>
	<p>Existing products</p> <p>What products are</p> <p>Who products are for</p> <p>What products are for</p> <p>How products work</p> <p>How products are used</p> <p>Where products might be used</p> <p>What materials products are made from</p> <p>What they like and dislike about products</p>	<p>Existing products</p> <p>How well products have been designed</p> <p>How well products have been made</p> <p>Why materials have been chosen</p> <p>What methods of construction have been used</p> <p>How well products work</p> <p>How well products achieve their purposes</p> <p>How well products meet user needs and wants</p> <p>Who designed and made the products</p> <p>Where products were designed and made</p> <p>When products were designed and made</p> <p>Whether products can be recycled or reused</p>	<p>Existing products</p> <p>How well products have been designed</p> <p>How well products have been made</p> <p>Why materials have been chosen</p> <p>What methods of construction have been used</p> <p>How well products work</p> <p>How well products achieve their purposes</p> <p>How well products meet user needs and wants</p> <p>How much products cost to make</p> <p>How innovative products are</p> <p>How sustainable the materials in products are</p> <p>What impact products have beyond their intended purpose</p>
	<p>Key events and individuals</p> <p>Not a requirement in KS1</p>	<p>Key events and individuals</p> <p>About inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</p>	<p>Key events and individuals</p> <p>About inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</p>

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