

Design and Technology – Progression of Knowledge, Skill and Understanding

DESIGN					
	Key Stage 1	Curriculum	Lower Key Stage 2	Upper Key Stage 2	Curriculum
Understanding contexts, users and purposes	<p>Work within a range of contexts (e.g. home, school, garden).</p> <p>State what products they are making, who their product is for and the purpose of their product.</p> <p>Say how their product will work.</p> <p>Say how their product is suitable for their intended users.</p> <p>Use simple design criteria to help develop their ideas.</p>	<p>Design purposeful, functional, appealing products for themselves and other users based on design criteria</p>	<p>Describe the purpose of their products.</p> <p>Identify how their products appeal to the intended audience.</p> <p>Explain how a specific part of their product works.</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 form their own ideas.</p>	<p>Explain how each part of their product works to contribute to the overall function of the product</p> <p>Carry out research, using surveys, interviews and questionnaires to identify the needs, wants, preferences and values of particular individuals and groups</p> <p>Develop a simple design specification to guide their thinking</p>	<p>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</p>
Generating, developing, modelling and communicating ideas	<p>Generate ideas by drawing on their own experiences and knowledge of existing products.</p> <p>Model ideas by exploring materials, components and making templates.</p> <p>Use IT where appropriate, to develop and communicate their ideas.</p>	<p>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</p>	<p>Share ideas through discussion.</p> <p>Begin to model ideas using prototypes and pattern pieces.</p> <p>Use annotated sketches to develop and communicate their ideas.</p> <p>Generate realistic ideas, focusing on the needs of the user.</p>	<p>Clarify ideas through discussion.</p> <p>Model ideas using prototypes and pattern pieces.</p> <p>Use annotated sketches including cross-sectional drawings and exploded diagrams to develop and communicate ideas.</p> <p>Generate innovative ideas, focusing on the needs of the user.</p> <p>Make design decisions that take in to account constraints such as time, resources and cost.</p> <p>Use CAD to develop and communicate ideas.</p>	<p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p>

Design and Technology – Progression of Knowledge, Skill and Understanding

MAKE					
	Key Stage 1	Curriculum	Lower Key Stage 2	Upper Key Stage 2	Curriculum
Planning	Plan by suggesting what to do next. Select from a range of tools, materials and components according to their characteristics.	Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing]	Select tools, equipment and materials that are suitable for the task. Explain choice of materials according to functional properties and aesthetic qualities.	Select and explain their choice of tools and equipment in relation to the skills and techniques that they will be using. Explain choice of components according to functional properties and aesthetic qualities.	Select from and use a wider range of tools and equipment to perform practical tasks accurately e.g. cutting, shaping, joining and finishing.
Practical skills and techniques	Follow procedures for safety Use a range of materials and components. Measure, mark out, cut and shape materials and components. Assemble, join and combine materials and components Use finishing techniques.	Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	Order the main stages of making. Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. Measure, mark out, cut and shape materials and components with some accuracy. Assemble, join and combine materials and components with some accuracy. Apply a range of finishing techniques, including those from art and design, with some accuracy.	Formulate step-by-step plans as a guide to making. Accurately measure, mark out, cut and shape materials and components. Accurately apply a range of finishing techniques, including those from art and design. Use techniques that involve a number of steps. Demonstrate resourcefulness when tackling practical problems.	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.

Design and Technology – Progression of Knowledge, Skill and Understanding

EVALUATE

	Key Stage 1	Curriculum	Lower Key Stage 2	Upper Key Stage 2	Curriculum
Own ideas and products	<p>Talk about design ideas and what they are making. Make simple judgements about their products and ideas against the design criteria. Suggest how products could be improved.</p> <p>Pupils should explore: What products are. Who products are for. How products work. How products are used. Where products might be used. What materials are made from. What they like and dislike about products.</p> <p>Know about some of the significant individuals in the field of design</p>	<p>Evaluate their ideas and products against design criteria.</p> <p>Explore and evaluate a range of existing products.</p>	<p>Identify strengths and areas for development in their ideas and products. Refer to their design criteria as they design and make. Use their design criteria to evaluate their completed products.</p> <p>Investigate and analyse: How well products have been designed and made. Why materials have been chosen. What methods of constructions have been used. How well products work, achieve their purposes and meet their user needs and wants.</p> <p>Investigate and analyse: who designed and made the products. Where and when products were designed and made. Whether products can be recycled or reused.</p> <p>Know about inventors, designers, engineers and manufacturers who have developed ground-breaking products.</p>	<p>Consider the views of others, including intended users, to improve their work. Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make. Evaluate their ideas and products against their original design specification</p> <p>Investigate and analyse: How much products cost to make How innovative products are. How sustainable the materials in the products are. What impact products have beyond their intended purpose</p>	<p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</p> <p>Investigate and analyse a range of existing products.</p>

Design and Technology – Progression of Knowledge, Skill and Understanding

Technical Knowledge					
	Key Stage 1	Curriculum	Lower Key Stage 2	Upper Key Stage 2	Curriculum
Making Products Work	<p>Know about the movement of simple mechanisms and wheels (Y1).</p> <p>Know how freestanding structures can be made stronger, stiffer and more stable (Y2).</p> <p>Know that two identical fabric shapes can be assembled to make a 3D product.</p> <p>Understand the correct technical vocabulary for the projects that they are undertaking.</p>	<p>Build structures, exploring how they can be made stronger, stiffer and more stable</p> <p>Explore and use mechanisms in their products e.g. levers, sliders, wheels and axles,</p>	<p>Use learning from science and mathematics to help design and make products that work.</p> <p>Know that materials have both functional and aesthetic qualities.</p> <p>Know that mechanical systems have and input, process and output.</p> <p>Know the correct technical vocabulary for the projects that they are undertaking.</p> <p>Know how mechanical systems such as pneumatic systems create movement.</p> <p>Know how to make strong, stiff shell structures (Y3).</p> <p>Know that a single fabric shape can make a 3D textiles product (Y4).</p>	<p>Know that electrical systems have and input, process and output.</p> <p>Know the correct technical vocabulary for the projects that they are undertaking.</p> <p>Know how mechanical systems such as cams can create movement.</p> <p>Know how electrical circuits and components can be used to create functional products.</p> <p>Know how to programme a computer to monitor changes in the environment and control their products.</p> <p>Know how to reinforce and strengthen a 3D framework.</p> <p>Know that a 3D textiles product can be made from a combination of fabric shapes.</p>	<p>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.</p> <p>Understand and use mechanical systems in their products e.g. gears, pulleys, cams, levers and linkages.</p> <p>Understand and use electrical systems in their products e.g. series circuits incorporating switches, bulbs, buzzers and motors.</p> <p>Apply their understanding of computing to program, monitor and control their products.</p>

Design and Technology – Progression of Knowledge, Skill and Understanding

Cooking and Nutrition

	Key Stage 1	Curriculum	Lower Key Stage 2	Upper Key Stage 2	Curriculum
Where food comes from	<p>Children know that all food comes from plants or animals.</p> <p>Children know that food has to be grown, farmed or caught.</p>	<p>Understand where food comes from.</p>	<p>Children know that food is grown, reared and caught in the UK, Europe and the wider world.</p>	<p>Children know that seasons may affect the food available.</p> <p>Children know how food is processed into ingredients that can be eaten or used in cooking.</p>	<p>Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed</p>
Food preparation, cooking and nutrition	<p>Children know how to prepare simple dishes safely and hygienically, without using a heat source.</p> <p>Children know how to use simple food preparation techniques: cutting, peeling, grating.</p> <p>Children can name the 5 good groups in the Eatwell Guide.</p> <p>Children know that everybody should eat at least five portions of fruit and vegetables every day.</p>	<p>Use the basic principles of a healthy and varied diet</p>	<p>Children know how to prepare and cook a variety of dishes safely and hygienically</p> <p>Children know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading</p> <p>Children know that a healthy diet is made up from a variety and balance of different foods and drinks (depicted in the Eatwell Guide)</p> <p>Children know that to be active and healthy, food and drink are needed to provide energy for the body</p>	<p>Children know how to prepare and cook a variety of dishes safely and hygienically including, where appropriate, the use of a heat source</p> <p>Children know that recipes can be adapted to change the appearance, taste, texture and aroma</p> <p>Children know that different food and drink contain different substances – nutrients, water and fibre – that are needed for health</p>	<p>Understand and apply the principles of a healthy and varied diet</p> <p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</p>