
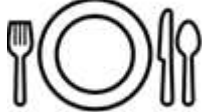


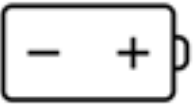


Design and Technology Progression of Knowledge

Substantive Knowledge

Substantive Concepts are concepts used to group the key areas of design and technology together. For example, Mechanisms, design and structure. They are embedded throughout the curriculum so that each one will be encountered within each key stage at least once. Substantive concepts are best understood with repeated encounters in specific, meaningful contexts linking with the project they are working on rather than being taught in an abstract way.

	Mechanisms- How things move 	Food and nutrition 	Textiles 	Structure- 	Electronics 
Curious Caterpillars 2-3 Years				Explore different materials, using all their senses to investigate them. Manipulate and play with different materials. Make simple models which express their ideas. Continuous provision areas building towers and figuring out how to make it tall, stable.	
Blossoming Butterflies 3-4 Years			Join different materials and explore different textures.	Continuous provision areas building towers and	

				<p>figuring out how to make it tall, stable.</p> <p>Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.</p>	
Reception		<p>Look at healthy choices for snack time.</p>	<p>Use of equipment such as scissors to cut and shape.</p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used</p>	<p>Continuous provision areas building towers and figuring out how to make it tall, stable.</p>	
Year 1	<p>Design</p> <p>Draw ideas as drawings</p> <p>Say how the product works</p> <p>Make</p>	<p>That all food comes from plants or animals.</p> <p>How to prepare simple dishes safely and hygienically. I know some key rules about Food Hygiene and keeping myself safe.</p> <p>Sample foods from our local area and China and share</p>	<p>Design</p> <p>Use simple design criteria to help develop my ideas. Describe what my product is for.</p> <p>I will design my own product that is fit for purpose by cutting and shaping fabrics. (not joining materials)</p>		



	<p>Assemble, join and combine materials</p> <p>Use tools safely</p> <p>Evaluate</p> <p>Talk about the design</p> <p>Explore toys—likes and dislikes</p>	<p>some similarities and differences</p> <p>Prepare and cook a Chinese dish and say what I like and dislike about it.</p>	<p>Make</p> <p>I will use a range of materials to create an apron to wear.</p> <p>Evaluate</p> <p>I will evaluate the successfulness of my product to decide if it fit for purpose.</p> <p>I will make simple judgements about my product against the design criteria and suggest how it could be improved.</p>		
Year 2	<p>Make- Plan by suggesting what to do next. select from a range of materials and components according to their characteristics. Follow procedures for safety · measure, mark out, cut and shape materials and components. Assemble, join and combine materials and components. Evaluate</p>	<p>To be able to use a knife safely to slice soft foods– peppers, cucumber How to name and sort foods into the five groups in the eat well plate. That everyone should eat at least 5 portions of fruit and vegetables a day. To be able to use a grater to add carrots to the mixture. To measure the ingredients accurately by following a recipe</p>		<p>Design</p> <p>I will use Santiago as inspiration when planning and designing a bridge. Model ideas by exploring materials, components and by making mock-ups. Make</p> <p>I will construct a bridge that is stable and strong. Evaluate</p> <p>I will evaluate the effectiveness of the bridge and decide if it strong and stable.</p>	



	Who products are for What products are for. How products work				
Year 3	<p>Design I will generate realistic ideas, focussing on the needs of the user. I will look at contexts where they use these systems (home, school, industry) Make I will create a pulley system to create a moving mechanism. I will explain my choice of tools and equipment. Evaluate I will evaluate the purposefulness of my pulley system.</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. Use the bridge hold and claw grip when cutting ingredients. Use a knife correctly support by techniques and support from a chopping board. How to use a range of techniques such as peeling, chopping, slicing, grating and mixing. Know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in the eat well plate</p>	<p>Design Use annotated sketches and exploded diagrams to develop and communicate their idea. Gather information about the needs and wants of particular individuals and groups. Model ideas using prototypes and pattern pieces. Make I will practice using different joining skills such as sewing, gluing and stapling to join different fabrics together. Evaluate I will evaluate the successfulness of the joins within my final product and suggest new joining skills or improvements. Explain their choice of materials and aesthetic qualities.</p>		



Year 4	<p>Design I will plan and a design a mechanism using different types of cams and use a design criteria. Explain how different parts of the cams work.</p> <p>Make I will use different types of cams to show a moving mechanism. Order the main stages of making.</p> <p>Evaluate- Who designed and made the products When products were designed and made Refer to the design criteria and use this to evaluate their product.</p>	<p>I will know how food is processed into ingredients that can be eaten or used in cooking. Follow procedures for safety and hygiene To be able to learn new or improve existing skills such as kneading and sieving To measure the ingredients accurately by following a recipe</p>		<p>Design Describe the purpose of a products know why it will appeal to intended users share and clarify ideas through discussion Make 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. Evaluate- How well products have been designed why materials have been chosen what methods of construction have been used how well products work</p>	
Year 5		<p>That food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and</p>		<p>Design I will use a computer aided design program called SketchUp to design and</p>	<p>Design Make design decisions that take into account the availability of resources.</p>



		<p>caught (such as fish) in the UK, Europe and the wider world. 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>Across KS2 pupils should know: • 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>How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</p> <p>That different food and drink contain different substances – nutrients, water and fibre – that are needed for health</p>		<p>plan my house structure that is fit for purpose.</p> <p>Make</p> <p>I will use materials and varied joining techniques to create a real 3D house using my design from SketchUp.</p> <p>Accurately measure, mark out cut and shape materials.</p> <p>Evaluate</p> <p>How well the product meets user needs and wants.</p> <p>What impact products have beyond their intended purpose and whether anything could be made more sustainably.</p>	<p>Learn about inventors who have developed ground-breaking products.</p> <p>Make</p> <p>Produce an appropriate list of tools and equipment needed.</p> <p>I will design a product which requires an electrical circuit.</p> <p>Evaluate</p> <p>To recognise errors in the design of the circuit and make necessary changes.</p> <p>How well products achieve their purposes.</p> <p>How sustainable the products are.</p>
Year 6	<p>Design</p> <p>Carry out research, using surveys and web-based resources.</p> <p>Make</p> <p>I will learn how a gear mechanism system is</p>	<p>I will recognise appropriate changes that we can make to a product by changing the ingredients of a recipe to make a positive change.</p>		<p>Design</p> <p>Identify the needs, wants, preferences and values of individuals and groups</p> <p>Develop a simple design specification to guide their thinking</p>	



	<p>made and how this makes movement. I will create my own moving mechanism using what I have learnt about gears. Evaluate I will evaluate the technical element of my moving gears system. Evaluate their ideas and products against their original design specification.</p>	<p>I will be able to explain why these healthy changes are a better choice for your body and diet. I will evaluate my outcome and suggest improvements for the future.</p>		<p>Generate innovative ideas, drawing on research. Making Formulate step-by-step plans as a guide to making accurately measure, mark out, cut and shape materials and components Accurately assemble, join and combine materials and components. Accurately apply a range of finishing techniques, including those from art and design Demonstrate resourcefulness when tackling practical problems Evaluating Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make</p>	
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