



SUBJECT: Design Technology

Statement of INTENT: To encourage innovation, creativity and practicality in design, technical skill in making and realistic evaluation of completed items. To facilitate an understanding of the subject and enable the growth of knowledge in an increasingly technological world. To understand and apply the principles of nutrition and to learn how to cook.

Age related Breadth of Study

	EYFS	KS1	KS2
	<p>Through adult modelling and guidance, they will learn how to look after their bodies, including healthy eating, and manage personal needs independently.</p> <p>Early Learning Goals:</p> <p>PSED -Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</p> <p>PD -Use a range of small tools, including scissors, paint brushes and cutlery;</p> <p>EAD -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>National Curriculum statements: When designing and making, pupils should be taught to:</p> <p>Design -Design purposeful, functional, appealing products for themselves and other users based on design criteria -Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.</p> <p>Make -Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. -Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.</p> <p>Evaluate -Explore and evaluate a range of existing products. -Evaluate their ideas and products against design criteria.</p> <p>Technical knowledge -Build structures, exploring how they can be made stronger, stiffer and more stable. -Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</p>	<p>National Curriculum statements: When designing and making, pupils should be taught to:</p> <p>Design -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 -Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>Make -Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately -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.</p> <p>Evaluate -Investigate and analyse a range of existing products -Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work - Understand how key events and individuals in design and technology have helped shape the world</p> <p>Technical knowledge -Apply their understanding of how to strengthen, stiffen and reinforce more complex structures - understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] - understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] - apply their understanding of computing to program, monitor and control their products.</p>

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Cooking and Nutrition	<p>3-4 (Pre-Key Stage) Make healthy choices about food, drink, activity and toothbrushing (PSED)</p> <p>Reception Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons (PD)</p> <p>Know and talk about the different factors that support their overall health and wellbeing – healthy eating (PSED)</p>	<p>Talk about what he/she eats at home and begin to discuss what healthy foods are.</p> <p>Say where some food comes from and give examples of food that is grown.</p> <p>Use simple tools with help to prepare food safely.</p>	<p>Understand the need for a variety of food in a diet.</p> <p>Understand that all food has to be farmed, grown or caught.</p> <p>Use a wider range of cookery techniques to prepare food safely.</p>	<p>Talk about the different food groups and name food from each group.</p> <p>Understand that food has to be grown, farmed or caught in Europe and the wider world.</p> <p>Use a wider variety of ingredients and techniques to prepare and combine ingredients safely.</p>	<p>Understand what makes a healthy and balanced diet, and that different foods and drinks provide different substances the body needs to be healthy and active.</p> <p>Understand seasonality and the advantages of eating seasonal and locally produced food.</p> <p>Read and follow recipes which involve several processes, skills and techniques.</p>	<p>Understand the main food groups and the different nutrients that are important for health.</p> <p>Understand how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable / tasty to eat.</p> <p>Select appropriate ingredients and use a wide range of techniques to combine them.</p>	<p>Confidently plan a series of healthy meals based on the principles of a healthy and varied diet.</p> <p>Use information on food labels to inform choices.</p> <p>Research, plan and prepare and cook a savoury dish, applying his/her knowledge of ingredients and his/her technical skills.</p>

Textiles

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>3-4 (Pre-Key Stage) Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen, or one which is suggested to them (PSED)</p> <p>Explore different materials freely, to develop their ideas about how to use them and what to make (EAD).</p> <p>Develop their own ideas and then decide which materials to use to express them (EAD).</p> <p>Join different materials and explore different textures (EAD).</p> <p>Reception: Articulate their ideas and thoughts in well-formed sentences (CL)</p> <p>Show resilience and perseverance in the face of challenge (PSED).</p> <p>Return to and build on their previous learning, refining ideas and developing their ability to represent them (EAD)</p> <p>Create collaboratively, sharing ideas, resources and skills (EAD)</p>	<p>Use a range of simple tools to cut, join and combine materials and components safely.</p> <p>Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing.</p> <p>Ask simple questions about existing products and those that he/she has made.</p>	<p>Design purposeful, functional, appealing products for himself/herself and other users based on design criteria.</p> <p>Generate, develop, model and communicate his/her ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.</p> <p>Choose appropriate tools, equipment, techniques and materials from a wide range.</p> <p>Safely measure, mark out, cut and shape materials and components using a range of tools.</p> <p>Evaluate and assess existing products and those that he/she has made using a design criteria.</p>	<p>Use knowledge of existing products to design his/her own functional product.</p> <p>Create designs using annotated sketches, cross-sectional diagrams and simple computer programmes.</p> <p>Safely measure, mark out, cut, assemble and join with some accuracy.</p> <p>Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them.</p> <p>Investigate and analyse existing products and those he/she has made, considering a wide range of factors.</p>	<p>Use knowledge of existing products to design a functional and appealing product for a particular purpose and audience.</p> <p>Create designs using exploded diagrams.</p> <p>Use techniques which require more accuracy to cut, shape, join and finish his/her work e.g. Cutting internal shapes, slots in frameworks.</p> <p>Use his/her knowledge of techniques and the functional and aesthetic qualities of a wide range of materials to plan how to use them.</p> <p>Consider how existing products and his/her own finished products might be improved and how well they meet the needs of the intended user.</p>	<p>Use his/her research into existing products and his/her market research to inform the design of his/her own innovative product.</p> <p>Create prototypes to show his/her ideas.</p> <p>Make careful and precise measurements so that joins, holes and openings are in exactly the right place.</p> <p>Produce step by step plans to guide his/her making, demonstrating that he/she can apply his/her knowledge of different materials, tools and techniques.</p> <p>Make detailed evaluations about existing products and his/her own considering the views of others to improve his/her work.</p>	<p>Use research he/she has done into famous designers and inventors to inform the design of his/her own innovative products.</p> <p>Generate, develop, model and communicate his/her ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p> <p>Apply his/her knowledge of materials and techniques to refine and rework his/her product to improve its functional properties and aesthetic qualities.</p> <p>Use technical knowledge accurate skills to problem solve during the making process.</p> <p>Use his/her knowledge of famous designs to further explain the effectiveness of existing products and products he/she have made.</p>

Structures

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>3-4 (Pre-Key Stage) Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen, or one which is suggested to them (PSED).</p> <p>Explore different materials freely, to develop their ideas about how to use them and what to make (EAD).</p> <p>Develop their own ideas and then decide which materials to use to express them (EAD).</p> <p>Join different materials and explore different textures (EAD).</p> <p>Choose the right resources to carry out their own plan. For example, choosing a spade to enlarge a small hole they dug with a trowel (PD).</p> <p>Collaborate with others to manage large items, such as moving a long plank safely, carrying large hollow blocks (PD).</p> <p>Use one-handed tools and equipment, for</p>	<p>Create simple designs for a product.</p> <p>Use pictures and words to describe what he/she wants to do.</p> <p>Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing.</p> <p>Ask simple questions about existing products and those that he/she has made.</p> <p>Build structures, exploring how they can be made stronger, stiffer and more stable.</p>	<p>Design purposeful, functional, appealing products for himself/herself and other users based on design criteria.</p> <p>Generate, develop, model and communicate his/her ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.</p> <p>Choose appropriate tools, equipment, techniques and materials from a wide range.</p> <p>Safely measure, mark out, cut and shape materials and components using a range of tools.</p> <p>Evaluate and assess existing products and those that he/she has made using a design criteria.</p> <p>Investigate different techniques for stiffening a variety of materials and explore different methods of enabling structures to remain stable.</p>	<p>Use knowledge of existing products to design his/her own functional product.</p> <p>Create designs using annotated sketches, cross-sectional diagrams and simple computer programmes.</p> <p>Safely measure, mark out, cut, assemble and join with some accuracy.</p> <p>Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them.</p> <p>Investigate and analyse existing products and those he/she has made, considering a wide range of factors.</p> <p>Strengthen frames using diagonal struts.</p>	<p>Use knowledge of existing products to design a functional and appealing product for a particular purpose and audience.</p> <p>Create designs using exploded diagrams.</p> <p>Use techniques which require more accuracy to cut, shape, join and finish his/her work e.g. Cutting internal shapes, slots in frameworks.</p> <p>Use his/her knowledge of techniques and the functional and aesthetic qualities of a wide range of materials to plan how to use them.</p> <p>Consider how existing products and his/her own finished products might be improved and how well they meet the needs of the intended user.</p> <p>Apply techniques he/she has learnt to strengthen structures and explore his/her own ideas.</p>	<p>Use his/her research into existing products and his/her market research to inform the design of his/her own innovative product.</p> <p>Create prototypes to show his/her ideas.</p> <p>Make careful and precise measurements so that joins, holes and openings are in exactly the right place.</p> <p>Produce step by step plans to guide his/her making, demonstrating that he/she can apply his/her knowledge of different materials, tools and techniques.</p> <p>Make detailed evaluations about existing products and his/her own considering the views of others to improve his/her work.</p> <p>Build more complex 3D structures and apply his/her knowledge of strengthening techniques to make them stronger or more stable.</p>	<p>Use a wide range of methods to strengthen, stiffen and reinforce complex structures and can use them accurately and appropriately.</p>

	<p>example, making snips in paper with scissors (PD).</p> <p>Reception: Show resilience and perseverance in the face of challenge (PSED).</p> <p>Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen (PSED).</p> <p>Return to and build on their previous learning, refining ideas and developing their ability to represent them (EAD). Create collaboratively, sharing ideas, resources and skills (EAD).</p> <p>Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons (PD).</p>						
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Mechanisms

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<p>Create simple designs for a product.</p> <p>Use pictures and words to describe what he/she wants to do.</p> <p>Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing.</p> <p>Ask simple questions about existing products and those that he/she has made.</p> <p>Use wheels and axles in a product.</p>	<p>Design purposeful, functional, appealing products for himself/herself and other users based on design criteria.</p> <p>Generate, develop, model and communicate his/her ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.</p> <p>Choose appropriate tools, equipment, techniques and materials from a wide range.</p> <p>Safely measure, mark out, cut and shape materials and components using a range of tools.</p> <p>Evaluate and assess existing products and those that he/she has made using a design criteria.</p> <p>Explore and use mechanisms e.g. levers, sliders, wheels and axles, in his/her products.</p>	<p>Use knowledge of existing products to design his/her own functional product.</p> <p>Create designs using annotated sketches, cross-sectional diagrams and simple computer programmes.</p> <p>Safely measure, mark out, cut, assemble and join with some accuracy.</p> <p>Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them.</p> <p>Investigate and analyse existing products and those he/she has made, considering a wide range of factors.</p> <p>Understand how mechanical systems such as levers and linkages or pneumatic systems create movement.</p>			<p>Generate, develop, model and communicate his/her ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p> <p>Apply his/her knowledge of materials and techniques to refine and rework his/her product to improve its functional properties and aesthetic qualities.</p> <p>Use technical knowledge accurate skills to problem solve during the making process.</p> <p>Apply his/her understanding of computing to program, monitor and control his/her product</p> <p>Understand how to use more complex mechanical and electrical systems.</p> <p>Understand and use electrical systems in products.</p>

