

Design and Technology: Long Term Overview

	Autumn 2	Spring 2	Summer 2
Y1	<p>Structures Freestanding structures</p> <p>Describe different characteristics of materials. Measure and mark out the materials needed for the structure.</p> <p>Use joining, rolling and folding to make structures stronger, stiffer and more stable.</p> <p>Build structures, joining components together to create a finished product.</p> <p>Work in order when making a structure.</p>	<p>Mechanisms Sliders and Levers</p> <p>Understand that different mechanisms produce different types of movements, e.g. wheels, sliders, levers and hinges.</p> <p>Explore and use simple mechanisms. e.g. use sliders in moving pictures, hinges into models.</p> <p>Cut, shape and join using scissors, glue, paper fasteners and masking tape.</p>	<p>Food Preparing fruit and vegetables</p> <p>Understand the principles of a healthy and varied diet- five portions of fruit and vegetables every day.</p> <p>Identify where a range of fruit and vegetables come from.</p> <p>Use simple tools with help to prepare food safely (a knife and knife skills (bridge method) to cut and slice: using a peeler to peel – new skill Y1).</p> <p>Wash hands and keep work surfaces clean.</p> <p>Prepare a dish that is healthy and contains a variety of food (design, make, evaluate).</p>
Y2	<p>Mechanisms Wheels and axles</p> <p>Identify how different mechanisms, produce different types of movement- wheels, axles, sliders, turning mechanisms, hinges and levers.</p> <p>Explore and use winding mechanisms.</p> <p>Incorporate wheels and axles into their products.</p> <p>Describe the properties of the materials that I have used.</p>	<p>Textiles Templates and joining techniques</p> <p>Identify different forms of textiles/fabric e.g. felt, velvet, cotton.</p> <p>To describe textiles by the way they feel.</p> <p>To identify why fabrics are chosen based on their properties (i.e. wool is used because it is soft and warm).</p> <p>To use certain fabrics based on their suitability to product.</p> <p>To understand why templates are used.</p> <p>To use different fabrics and materials in collages.</p> <p>To use a needle and thread</p> <p>To use a running stitch to join fabrics.</p>	<p>Food Preparing fruit and vegetables</p> <p>To identify food groups and sort onto the Eatwell plate and identify that this makes up a healthy diet.</p> <p>To know what a 'portion' might look like using different categories of food.</p> <p>To understand where a range of food comes from (plant or animal).</p> <p>To prepare food safely and hygienically and understand what that means and why it is important.</p> <p>To describe the properties of food ingredients: taste, smell, texture and consistency.</p> <p>To use tools with help to prepare food safely. (cut, slice, peel, juice and blend – new skills Y2).</p> <p>To measure ingredients using cup, tsp, tbsps.</p> <p>To prepare a dish that contains a variety of food and is healthy.</p> <p>To learn how to store my product for long life and hygiene.</p>

<p>Y3</p>	<p style="text-align: center;">Structures Shell Structures</p> <p>Choose and use appropriate materials.</p> <p>Use appropriate tools for cutting (e.g. using a junior hacksaw) and scoring materials.</p> <p>Measure materials.</p> <p>Join materials using a range of joining skills .</p> <p>Use methods to stiffen and strengthen structures (e.g. Triangles, stacking, etc)</p> <p>Work in order when making a structure.</p> <p>To develop and use knowledge of nets of cubes and cuboids to create a product.</p>	<p style="text-align: center;">Textiles 2D shape to 3D product</p> <p>Investigate the different properties that textiles have e.g. feel, insulation, texture and waterproof.</p> <p>Thread a needle independently.</p> <p>Select appropriate material for my product</p> <p>Join textiles in a range of different ways including running stitch, back stitch and blanket stitching.</p> <p>Create and use templates to accurately cut out textile design</p> <p>Leave a seam allowance.</p> <p>Use finishing techniques to achieve a required effect e.g. using buttons, beads, sequins.</p> <p>Combine materials to add strength and visual appeal.</p>	<p style="text-align: center;">Food Healthy and varied diet</p> <p>Explain that variety, balance of food and drink are required for a healthy diet- using the Eatwell plate.</p> <p>Identify whether foods are grown (underground, on plants), reared or caught.</p> <p>Describe the properties of ingredients and importance of a varied diet to keep healthy.</p> <p>Use utensils and equipment to prepare and combine food in order to prepare a dish (peeling, chopping, slicing, grating, mixing, spreading, kneading and baking)</p> <p>Measure or weigh ingredients using scales.</p> <p>To prepare and cook dishes safely and hygienically.</p> <p>Present my food product well.</p>
<p>Y4</p>	<p style="text-align: center;">Mechanical Systems Pneumatics</p> <p>Understand how levers and linkages or pneumatic systems create movement.</p> <p>Understand why levers and linkages or pneumatic systems are used.</p> <p>Identify the difference between fixed and loose pivots.</p> <p>Identify where fixed and loose pivots are used in products</p> <p>Join materials to make product using both permanent and temporary fastening.</p> <p>Measure, mark out and cut with increasing accuracy.</p> <p>Produce models that incorporate mechanical systems such as levers, linkages or pneumatic systems to create movement.</p>	<p style="text-align: center;">Electronics Electrical Systems - Simple circuits and switches</p> <p>Understand a range of electrical components and their functions such as a bulb, buzzer and switch.</p> <p>Use a number of components in a series circuit- switches, buzzers and bulbs.</p> <p>Apply scientific knowledge to create series and parallel circuits.</p>	<p style="text-align: center;">Food Healthy and varied diet</p> <p>Explain how food and drinks are required for healthy active bodies.</p> <p>Use appropriate utensils, equipment and techniques to prepare and combine food in order to prepare a dish (peeling, chopping, slicing, grating, mixing, spreading, kneading and baking).</p> <p>Identify where food comes from – UK and the wider world.</p> <p>Measure accurately to the nearest gram.</p> <p>Prepare and cook a variety of dishes safely and hygienically.</p> <p>Use the principles of a healthy and varied diet to research, plan prepare savoury dishes.</p> <p>Present food ensuring that it is interesting, appealing and fit for purpose.</p> <p>Describe food product in terms of taste, texture, flavour and relate this to the intended purpose of the food.</p>

<p>Y5</p>	<p style="text-align: center;">Structures Frame Structures</p> <p>To select materials considering intended use of product, the aesthetics and functionality.</p> <p>To select materials which are best suited to stiffen and reinforce the product.</p> <p>To reinforce and strengthen a 3D frame.</p> <p>To use a range of tools i.e. junior hacksaws, G clamps, bench hooks, hand drills safely</p> <p>To explain how the product meets the design criteria.</p> <p>To stiffen, strengthen and reinforce a range of 3D structures.</p> <p>To use finishing techniques to strengthen and improve the appearance of their models.</p>	<p style="text-align: center;">Electronics Complex switches</p> <p>Create circuits using electronic kits that employ a number of components (such as LED's, resistors, transistors and chips).</p> <p>Understand and use electrical systems in their product-series circuits incorporating switches, bulbs, buzzers and motors.</p> <p>Apply computing skills to program, monitor and control their products.</p> <p>Test components in more complex circuits (series and parallel).</p> <p>Identify faults in their own electrical system.</p>	<p style="text-align: center;">Food Celebrating culture and seasonality</p> <p>Explain how there are different substances in food and drink required for good health.</p> <p>Understand food can be grown, reared or caught in the UK and the wider world.</p> <p>Understand the seasonality of food.</p> <p>Understand that some foods may not be eaten raw as it is unsafe.</p> <p>Understand that cooking and heating alters the flavour and texture of foods and use this knowledge in my designs.</p> <p>Explain how to be safe and hygienic when preparing food.</p> <p>Understand that recipes can be adapted by adding or substituting ingredients.</p> <p>Measure ingredients accurately using different units.</p> <p>Use a range of utensils and equipment to prepare a dish.</p> <p>Use a range of techniques to prepare and combine food (kneading and baking) in order to prepare a dish.</p> <p>Prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of a heat source.</p> <p>Present and package food using a range of DT skills.</p>
<p>Y6</p>	<p style="text-align: center;">Mechanical Systems Pulleys or gears</p> <p>Understand that mechanical systems have an input and an output system.</p> <p>Develop a greater understanding of how cams, pulley or gears create movement.</p> <p>Draw an exploded diagram of my design.</p> <p>Design and make a product that incorporates a cam mechanism, pulleys or gears.</p> <p>Create and use prototypes.</p>	<p style="text-align: center;">Textiles Combining different fabric shapes</p> <p>Choose textiles appropriate to the user and intended use.</p> <p>Design, plan and decorate a fabric piece.</p> <p>Use own patterns and template.</p> <p>Use a range of techniques to join materials, e.g. over sewing, back stitch and/or blanket stitch</p> <p>Join textiles using art skills such as stitching, embroidering and plaiting to make a durable and desirable product.</p>	<p style="text-align: center;">Food Celebrating culture and seasonality</p> <p>Explain how there are different substances in food and drink required for good health.</p> <p>Understand food can be grown, reared or caught in the UK and the wider world.</p> <p>Understand the seasonality of food.</p> <p>Understand that some foods may not be eaten raw as it is unsafe.</p> <p>Understand that cooking and heating alters the flavour and texture of foods and use this knowledge in my designs.</p> <p>Explain how to be safe and hygienic when preparing food.</p>

	<p>Apply a high-quality finish (e.g. using carving, paint, glaze, varnish).</p> <p>Refine product after testing considering aesthetics, functionality, and purpose.</p>	<p>Produce a 3D textile product from a combination of accurately made pattern pieces, fabric shapes and different fabrics.</p> <p>Create a product that is strong and fit for purpose.</p>	<p>Understand that recipes can be adapted by adding or substituting ingredients.</p> <p>Measure ingredients accurately using different units.</p> <p>Use a range of utensils and equipment to prepare a dish.</p> <p>Use a range of techniques to prepare and combine food (kneading and baking) in order to prepare a dish.</p> <p>Prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of a heat source.</p> <p>Present and package food using a range of DT skills.</p>
--	---	--	--