

Design & Technology Overview

	Autumn	Spring	Summer
Nursery & Reception	<p>Making junk models – using scissors; simple joins using glue and tape</p> <p>Building models of familiar objects eg buildings, vehicles using construction eg. blocks, Duplo, Lego, Mobilo, multilink, natural materials</p> <p>Outdoor blocks</p>		
Year 1	<p>Introduction to planning, making & evaluating</p> <p>Structures</p> <ul style="list-style-type: none"> • Know how to design, make and evaluate simple structures for a book character using familiar materials. 	<p>Structures</p> <p>Freestanding structures</p> <ul style="list-style-type: none"> • Know how to make freestanding structures stronger, stiffer and more stable. 	<p>Mechanisms</p> <p>Sliders and levers</p> <ul style="list-style-type: none"> • Explore and use sliders and levers. • Understand that different mechanisms produce different types of movement.
Year 2	<p>Textiles</p> <p>Templates and joining</p> <ul style="list-style-type: none"> • Understand how simple 3-D 	<p>Mechanisms</p> <p>Wheels and axles</p> <ul style="list-style-type: none"> • Explore and use wheels, axles 	<p>Food</p> <p>Preparing fruit and veg</p> <ul style="list-style-type: none"> • Understand where a range of

	<p>textile products are made, using a template to create two identical shapes.</p> <ul style="list-style-type: none"> • Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. • Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. 	<p>and axle holders.</p> <ul style="list-style-type: none"> • Distinguish between fixed and freely moving axles 	<p>fruit and vegetables come from e.g. farmed or grown at home.</p> <ul style="list-style-type: none"> • Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of <i>The eatwell plate</i>.
Year 3	<p>Mechanical systems Levers & linkages</p> <ul style="list-style-type: none"> • Understand and use lever and linkage mechanisms. • Distinguish between fixed and loose pivots. 	<p>Food Healthy and varied diet</p> <ul style="list-style-type: none"> • Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. • Know how to use appropriate equipment and utensils to prepare and combine food. 	<p>Electrical systems Simple circuits (could be swapped with Autumn)</p> <ul style="list-style-type: none"> • Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers. • Apply their understanding of computing to program and control their products.

<p>Year 4</p>	<p>Textiles</p> <p>2-D shape to 3-d product</p> <ul style="list-style-type: none"> • Know how to strengthen, stiffen and reinforce existing fabrics. • Understand how to securely join two pieces of fabric together. • Understand the need for patterns and seam allowances. 	<p>Structures</p> <p>Shell structures</p> <ul style="list-style-type: none"> • Develop and use knowledge of how to construct strong, stiff shell structures. • Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. 	<p>Mechanical systems</p> <p>Pneumatics</p> <ul style="list-style-type: none"> • Understand and use pneumatic mechanisms.
<p>Year 5</p>	<p>Food</p> <p>Celebrating culture & seasonality</p> <ul style="list-style-type: none"> • Know how to use utensils and equipment including heat sources to prepare and cook food. • Understand about seasonality in relation to food products and the source of different food products 	<p>Mechanical systems</p> <p>Cams</p> <ul style="list-style-type: none"> • Understand that mechanical systems have an input, process and an output. • Understand how cams can be used to produce different types of movement and change the direction of movement. 	<p>Electrical systems</p> <p>More complex switches & circuits</p> <ul style="list-style-type: none"> • Understand and use electrical systems in their products. • Apply their understanding of computing to program, monitor and control their products.

Year 6	<p>Structures</p> <p>Frame structures</p> <ul style="list-style-type: none"> • Understand how to strengthen, stiffen and reinforce 3-D frameworks. 	<p>Textiles</p> <p>Combining different fabric shapes</p> <ul style="list-style-type: none"> • A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. • Fabrics can be strengthened, stiffened 	<p>Using CAD in textiles</p> <ul style="list-style-type: none"> • A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. • Fabrics can be strengthened, stiffened and reinforced where appropriate.
---------------	--	--	--

Throughout the process of design, make and evaluate in each unit, pupils also will work on objectives at each stage encompassing:

- Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology.
- Select from and use a range of materials, tools and equipment to perform practical tasks.
- Evaluate their ideas throughout and their final products against original design criteria.
- Know and use technical vocabulary relevant to the project.