

Plan Overview

Year group	Autumn	Spring	Summer
1	Structures: Stable structures	Cooking and nutrition: Smoothies	Mechanisms: Wheels and axles
2	Structures: A chair for a bear	Textiles: Pouches	Cooking and nutrition: Balanced diet
3	Mechanical systems: Pneumatic toys	Cooking and nutrition: Eating seasonally	Structures: Constructing a castle
4	Electrical systems: Torches	Digital world: Mindful moments timer	Textiles: Fastenings
5	Structure: Bridges	Cooking and nutrition: Developing a recipe	Mechanical systems: Gears and pulleys
6	Electrical systems: Steady hand game	Digital world: Navigating the world	Textiles: Bags

Year 1

Autumn	<p><u>Structures: Stable structures</u></p> <p>6 lessons</p> <p>Exploring how structures can be made more stable with a wide base and extra weight added to the base, the children will apply these skills in designing and making a stable pencil pot for a Year 1 pupil.</p>
Spring	<p><u>Cooking and nutrition: Smoothies</u></p> <p>7 lessons</p> <p>Cutting and juicing fruits and vegetables to create a smoothie that meets a design brief, this unit gives the children opportunities to develop food preparation skills with an increased focus on taste testing and ingredient choices.</p>
Summer	<p><u>Mechanisms: Wheels and axles</u></p> <p>6 lessons</p> <p>Exploring how a wheel's shape, smoothness and attachment affect movement, the children learn how to use a wheel, axle and axle holder to create the mechanism for a pull-along toy.</p>

Year 2

Autumn	<p><u>Structures: A chair for a bear</u></p> <p>6 lessons</p> <p>Exploring how to strengthen materials, the children will make a strong chair for a bear.</p>
Spring	<p><u>Textiles: Pouches</u></p> <p>5 lessons</p> <p>Learn how to sew a running stitch ready to design, make and decorate a pouch using a template.</p>
Summer	<p><u>Cooking and nutrition: Balanced diet</u></p> <p>7 lessons</p> <p>Learning about the importance of a balanced diet and using that knowledge to create a tasty wrap, this unit includes new lessons with both teacher and pupil videos.</p>

Year 3

Autumn	<p><u>Mechanical systems: Pneumatic toys</u></p> <p>6 lessons</p> <p>Exploring pneumatic systems, the children will apply their understanding to design and create a pneumatic toy using different types of diagrams.</p>
Spring	<p><u>Cooking and nutrition: Eating seasonally</u></p> <p>7 lessons</p> <p>Learning about seasonal foods and creating a seasonal food tart, this unit provides new lessons with teacher and pupil videos to develop the children's food preparation skills.</p>
Summer	<p><u>Structures: Constructing a castle</u></p> <p>5 lessons</p> <p>Identifying the key features of castles, using this knowledge to design and make castle structures from recycled materials.</p>

Year 4

Autumn	<p><u>Electrical systems: Torches</u></p> <p>5 lessons</p> <p>Identify the difference between electrical and electronic products. Evaluate a range of existing torches and their features, then develop a new functional torch design.</p>
Spring	<p><u>Digital world: Mindful moments timer</u></p> <p>7 lessons</p> <p>Exploring the concept of mindfulness and writing design criteria to develop a programmed product for timing a mindful moment, this unit includes new teacher and pupil videos, with an increased focus on evaluation and the use of a virtual Micro:bit.</p>
Summer	<p><u>Textiles: Fastenings</u></p> <p>5 lessons</p> <p>Analyse and evaluate a range of existing fastenings, then devise a list of design criteria to design, generate templates and make a fabric book sleeve. Exploring shell structures, the children investigate how they are strengthened to protect or contain, then apply this knowledge to design and construct their own helmets.</p>

Year 5

Autumn	<p><u>Structure: Bridges</u></p> <p>5 lessons</p> <p>Testing and analysing different bridges to determine their strength and stability. Exploring material properties and sources, before marking, sawing and assembling a wooden truss bridge.</p>
Spring	<p><u>Cooking and nutrition: Developing a recipe</u></p> <p>7 lessons</p> <p>Learning a simple bolognese recipe and adapting it to improve nutritional content, this unit provides new lessons with teacher and pupil videos to develop the children's food preparation skills.</p>
Summer	<p><u>Mechanical systems: Gears and pulleys</u></p> <p>6 lessons</p> <p>Exploring the history, mechanics and uses of gears and pulleys, children apply their understanding to make a gear and a pulley system and design an eco-bike that harnesses the energy from an exercise bike to do work.</p>

Year 6

Autumn 1	<p><u>Electrical systems: Steady hand game</u></p> <p>5 lessons</p> <p>Understand what is meant by fit for purpose design and form follows function. Design and develop a steady hand game using a series circuit, including housing and backboard.</p>
Spring 1	<p><u>Digital world: Navigating the world</u></p> <p>6 lessons</p> <p>Design and program a navigation tool to produce a multifunctional device for trekkers using CAD 3D modelling software. Pitch and explain the product to a guest panel.</p>
Summer 1	<p><u>Textiles: Bags</u></p> <p>6 lessons</p> <p>Exploring pattern pieces in textiles, the children investigate how fabric shapes are used to create products while designing and making their own bags.</p>