Design and Technology Long-Term Plan

	Unit 1	Unit 2	Unit 3
Year 3	**Cooking and Nutrition** **Eating Seasonally -** Discovering when and where fruits and vegetables are grown. Learning about seasonality in the UK and the relationship between the colour of fruits and vegetables and their health benefits by making three dishes.	**Digital World** **Wearable Technology** - Designing, coding, making and promoting a Micro:bit electronic charm to use in low-light conditions. Children develop their understanding of programming to monitor and control their products.	**Structures** **Constructing a Castle -** Learning about the features of a castle, children design and make one of their own. Using configurations of handmade nets and recycled materials to make towers and turrets and constructing a base to secure them.
Year 4	**Cooking and Nutrition** **Adapting a Recipe -** Evaluating biscuits, following a simple recipe and using skills like measuring and mixing. Pupils adapt ingredients to suit a target audience and budget, then bake and assess how well their changes improve the final product.	**Mechanical Systems** **Mechanical Car -** Transforming lollipop sticks, wheels, dowels and straws into a moving car. Using a glue gun to, making a launch mechanism, designing and making the body of the vehicle using nets and assembling these to the chassis.	**Electrical Systems** **Torches -** Applying their scientific understanding of electrical circuits, children create a torch, designing and evaluating their product against set design criteria.
Year 5	**Electrical Systems** **Doodlers -** Explore series circuits further and introduce motors. Explore how the design cycle can be approached by investigating an existing product, which uses a motor, to encourage pupils to problem-solve and work out how the product has been constructed.	**Cooking and Nutrition** **Developing a Recipe -** Investigating ingredients and nutrition before modifying a familiar dish to meet dietary needs and preferences. Pupils practise skills such as grating, mixing and measuring, then develop and test their own adapted recipe, considering hygiene, safety and the nutritional value of ingredient choices.	**Mechanical Systems** **Gears and Pulleys -** Exploring how gears and pulleys change speed, direction and force by building simple working systems. Pupils investigate real-world examples, create and improve their own mechanisms, and apply these skills when designing a product such as an eco-gadget bike, evaluating how well their system meets a design brief.
Year 6	**Textiles** **Waistcoats -** Selecting suitable fabrics, using templates, pinning, decorating and stitching to create a waistcoat for a person or purpose of their choice.	**Digital World** **Navigating the World -** Programming a navigation tool to produce a multifunctional device for trekkers. Combining 3D objects to form a complete product in CAD 3D modelling software and presenting a pitch to 'sell' their product.	**Structures** **Playground -** Designing and creating a model of a new playground featuring five apparatus, made from three different structures. Creating a footprint as the base, pupils visualise objects in plan view and get creative with their use of natural features.