

Design and Technology Long Term Plan

Year Group	Autumn	Spring	Summer
Year 1	Structures: Stable structure Investigating stable shapes and using an understanding of balance to discover how wide or heavy bases improve stability in freestanding structures. Pupils apply their understanding by designing and making a fun, stable pencil pot for a Year 1 pupil.	Textiles: Simple stitches Examining fabrics, practising basic sewing techniques and identifying how different materials are made from threads.	Mechanisms: Wheels and axles Developing an understanding of how wheels, axles and axle holders work while practising cutting straight and curved shapes with scissors. Pupils' problem-solve to improve their wheel designs before designing, building and evaluating a pull-along toy against design criteria.
Year 2	Structures: A chair for bear Investigating strong shapes and the properties of stiff and flexible materials by designing a chair Inspired by There's a bear on my chair by Ross Collins	Mechanisms: Levers Exploring pivot, lever and linkage mechanisms through designing a moving monster with mechanical parts.	Cooking and nutrition: Balanced diet 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.
Year 3	Structures: Produce packaging Exploring how 3D shell structures are created from nets, investigating their use in packaging and applying this understanding to create original designs	Digital world: Wearable technology Learning about the development of LEDs and how they allow for a range of light-up wearable technology. Pupils build programs of code to control an array of LEDs for a light-up product, followed by designing the form of their product using computer-aided design.	Cooking and nutrition: Eating seasonally Discovering where and when fruit and vegetables are grown by learning about seasonality in the UK. Pupils respond to a brief by designing a seasonal tart using ingredients harvested in the UK during May and June.
Year 4	Cooking & Nutrition: Adapting a recipe Designing and making biscuits for a chosen target audience by exploring existing products, following recipes and evaluating ingredients, taste and appearance. Pupils develop food preparation skills by adapting a biscuit recipe, creating their own design and evaluating how well their finished product meets the design criteria.	Mechanical Systems: Mechanical cars Exploring mechanical systems by building and testing prototype cars to identify effective design features. Pupils conduct market research, create design criteria and evaluate products from a customer perspective before designing their own mechanical car kit.	Electrical systems: Exploring electrical products Investigating electrical components and circuits and how they are used in everyday products to improve safety and convenience. Pupils build simple circuits with switches before designing their own electrical product using a cross-sectional diagram.
Year 5	Electrical systems: Wobble bots Building on existing knowledge of circuits by introducing motors and exploring how they create movement in products.	Mechanical systems: levers and pulleys Investigating the history, mechanics and uses of gears and pulleys. Pupils build a gear-and-pulley mechanism before applying their understanding to design an eco-bike.	Structure: Bridges Investigating different types of bridges and how structural strength is affected by shape and design. Pupils apply

			woodworking tools and techniques to design, build and test the durability of their own bridge structure.
Year 6	Textiles: Bags Designing pattern pieces, making a bag for a specific user and thinking about aesthetics and functionality.	Digital World: Navigating the World Designing a product and programming it to function as a compass and a pedometer.	Food and Nutrition: Come dine with me Developing food preparation and evaluation skills by researching and preparing a three-course meal. Pupils investigate the journey of a main ingredient from 'farm to fork', taste-test and score their dishes, and write a recipe for a favourite meal.