

DT LONG TERM PLAN – 2024 2025

	Year 3		Year 4		Year 5		Year 6	
Unit 1	Mechanical Systems: Pneumatic toys	Explore pneumatic systems, then apply this understanding to design and make a pneumatic toy including thumbnail sketches and exploded diagrams.	Electrical Systems: Torches	Identify the difference between electrical and electronic products. Evaluate a range of existing torches and their features, then develop a new functional torch design	Digital World: Monitoring devices	Applying Computing knowledge and understanding to program a Micro:bit animal monitoring device that will support animal care and alert their owners when the temperature is not optimal using sound and an ELD. Children develop their 3D CAS skills by learning how to navigate the Tinkercad interface and essential tools to combine multiple objects.	Digital World: Navigating the world	Children program a navigation tool to produce a multifunctional device for trekkers. They combine 3D objects to form a complete product in CAD 3D modelling software. The unit accumulates with a pitch to share and sell the children’s final product concepts and programs to the Adventure Awaits company guest panel.
Unit 2	Food: eating seasonally	Learn about various fruits and vegetables, and when, where and why they are grown in different seasons. Discover the relationship between colour and health benefits	Textiles: Fastenings	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.	Structures: Bridges	This topic develops children’s understanding of secure structures and introduces them to measuring, sawing and joining wood accurately. After learning about different types of bridges and also exploring how the strength of structures can be affected by the shapes used. Children create their own wooden bridge and test its durability.	Mechanical Systems: Automata toys	Using woodworking materials and skills, pupils construct a window display using an automata mechanism; measuring and cutting their materials, assembling the frame, choosing cams, designing the characters that sit on the followers and also finishing with a foreground and background.
Unit 3	Textiles: Cushions	Learn and apply two new sewing techniques – cross-stitch and appliqué. Utilise these new skills to design and make a cushion	Structures: Pavilions	Investigate and model frame structures to improve their stability, then apply this research to design and create a stable, decorated pavilion.	Food: What could be healthier?	Focusing on nutrition, children research and modify a traditional bolognese sauce recipe to make it healthier. They will cook their new and improved versions, making appropriate packaging and also learn about the ethical considerations of farming cattle.	Electrical Systems: Steady hand games	Using their understanding of electrical systems and design, pupils are challenged with designing and creating a steady hand game. Pupils will use nets to create their bases and their knowledge of electrical circuits to build a circuit with a buzzer which closes when the handle makes contact with the wire frame
Unit 4	Structures: Constructing a castle	Identify and learn about the key features of a castle, before designing and making a recycled-material castle (structure).	Mechanical Systems: Making a slingshot car	Using a range of materials, design and make a car with a working slingshot mechanism and house the mechanism using a range of nets	Electrical Systems: Doodlers	Our new Doodlers unit explores series circuits further and introduces a new circuit component - the motor. Pupils analyse an existing product that uses a motor - the Doodler (a scribble bot), then redesign it with their own preferred configuration and finally teach others how to make one by writing instructions as part of a DIY kit	Food: Come Dine With Me	Working in groups, children research and prepare a three-course meal taught as a rotational activity over three lessons. They will taste test and score their food when they aren’t cooking, they will research the journey of their main ingredient from farm to fork or write a favourite recipe to include in a class cookbook.