

DT LONG TERM PLAN – 2025 2026

	Year 3		Year 4		Year 5		Year 6	
Unit 1	Mechanical Systems: Pneumatic toys	<p>Super key knowledge:</p> <ul style="list-style-type: none"> To understand that pneumatic systems can be used as part of a mechanism. To understand how pneumatic systems work. To understand how sketches, drawings and diagrams can be used to communicate design ideas. 	Electrical Systems: Torches	<p>Super key knowledge:</p> <ul style="list-style-type: none"> To know that an electrical circuit must be complete for electricity to flow. To know facts from the history and invention of the electric light bulb(s) - by Sir Joseph Swan and Thomas Edison. To know the features of a torch: case, contacts, batteries, switch, reflector, lamp, lens. 	Digital World: Monitoring devices	<p>Super key knowledge:</p> <ul style="list-style-type: none"> To know that a 'device' means equipment created for a certain purpose or job and that monitoring devices observe and record. To understand what a virtual model is and the pros and cons of traditional vs CAD modelling. To know the 6Rs of sustainability. To know events or facts that took place over the last 100 years in the history of plastic, and how this is changing our outlook on the future. 	Digital World: Navigating the world	<p>Super key knowledge:</p> <ul style="list-style-type: none"> To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request. To know that accelerometers can detect movement. To know that 'multifunctional' means an object or product has more than one function. To know that magnetometers are devices that measure the Earth's magnetic field to determine which direction you are facing.
Unit 2	Food: eating seasonally	<p>Super key knowledge:</p> <ul style="list-style-type: none"> To know that not all fruits and vegetables can be grown in the UK. To know that climate affects food growth. To know that vegetables and fruit grow in certain seasons. To understand that vitamins, minerals and fibre are important for energy, growth and maintaining health. To know safety rules for using, storing and cleaning a knife safely. 	Textiles: Fastenings	<p>Super key knowledge:</p> <ul style="list-style-type: none"> To know that different fastening types are useful for different purposes. To know that creating a mock up (prototype) of their design is useful for checking ideas and proportions. 	Structures: Bridges	<p>Super key knowledge:</p> <ul style="list-style-type: none"> To understand some different ways to reinforce structures. To understand how triangles can be used to reinforce bridges. To understand the difference between arch, beam, truss and suspension bridges. 	Mechanical Systems: Automata toys	<p>Super key knowledge:</p> <ul style="list-style-type: none"> To understand that the mechanism in an automata uses a system of cams, axles and followers. To know that an automata is a hand powered mechanical toy. To know that a cross-sectional diagram shows the inner workings of a product.
Unit 3	Textiles: Cushions	<p>Super key knowledge:</p> <ul style="list-style-type: none"> To know that applique is a way of mending or decorating a textile by applying smaller pieces of fabric to larger pieces. To know that when two edges of fabric have been joined together it is called a seam. 	Structures: Pavilions	<p>Super key knowledge:</p> <ul style="list-style-type: none"> To know that a pavilion is a decorative building or structure for leisure activities. To understand that the target audience means the person or group of people a product is designed for. 	Food: What could be healthier?	<p>Super key knowledge:</p> <ul style="list-style-type: none"> To know that I can adapt a recipe to make it healthier by substituting ingredients. To know that I can use a nutritional calculator to see how healthy a food option is. 	Electrical Systems: Steady hand games	<p>Super key knowledge:</p> <ul style="list-style-type: none"> To know the names of the components in a basic series circuit, including a buzzer. To know that batteries contain acid, which can be dangerous if they leak. To understand the diagram perspectives 'top view', 'side view' and 'back'.

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				<ul style="list-style-type: none">• To know that a product's function means its purpose.• To understand that the target audience means the person or group of people a product is designed for.• To know that architects consider light, shadow and patterns when designing.			<ul style="list-style-type: none">• To know that analysing existing products helps make a new design successful.• To know that good form and function make a good product.
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