DT Knowledge Map

	Autumn	Spring	Summer
Year 3	**Pneumatic Toys** * Understand how pneumatic systems work * Design a toy with a pneumatic system * Create a pneumatic system * Test and finalise ideas against criteria	**Constructing a Castle** * Identify features of buildings * Incorporate features into a design * Construct 3D nets * Construct 3D model * Evaluate a project **Static Electricity** * Understand static electricity * Design a game aimed at a target audience * Make and test game designs * Evaluate a final product **Eating Seasonally** * Understand how climate change affects food growth * Understand food importation * Create a recipe using seasonal vegetables * Follow a recipe when cooking * Follow health and safety rules whilst cooking	**Cushions** * Use cross stitch * Use applique * Design a product and its template * Follow a design criteria * Assemble a final product
Year 4	**Pavilions** * Create a range of different shapes frame structures * Know what a pavilion is * Design a structure, considering effective and ineffective designs * Understand how different materials create different effects * Use cladding, selecting appropriate materials * Evaluate a project **Microbit** • To understand what variables are in programming. • To know some of the features of a Micro:bit. • To know that an algorithm is a set of instructions to be followed by the computer. • To know that it is important to check my code for errors (bugs). • To know that a simulator can be used as a way of checking your code works before installing it onto an electronic device.	**Fastenings** * Identify different types of fastenings * Explain advantages and disadvantages of different fastenings * Design a product to meet a criteria * Make and test a paper template * Measure, mark and cut fabric using a paper template * Work neatly when sewing * Incorporate a fastening into a design * Evaluate an end product against the original design criteria, suggesting modifications for improvement **Making a slingshot car** * Know that products change and evolve over time * Know that all moving things have kinetic energy * Design a shape that reduces air resistance * Make a model based on a chosen design (using nets) * Assemble and test a complete product	**Adapting a recipe** * Evaluate a product, considering: taste, smell, texture, appearance, packaging and target audience * Follow a recipe * Make and test a prototype * Know about food safety, following hygiene rules * Design a produce considering budget
Year 5	**What could be healthier?** * Understand where food comes from * Understand what constitutes a balanced diet * Understand the ethics around cattle farming * Understand the term 'healthy' * Adapt a traditional recipe to improve nutritious content * Use equipment safely, such as knives, hot pans and hobs * Carefully follow a recipe * Know how to avoid cross-contamination * Design appealing packaging"	**Mechanical Systems - Pop-up books** * Know that mechanisms control movement * Designing a pop-up book which uses a mixture of structures and mechanisms * Follow a design brief * Making mechanisms and/ or structures using sliders, pivots and folds to produce movement * Use paper, card and glue to make a structure * Use layer and spacers * Suggest points for improvement" **Textiles - Stuffed Toys** * Design a stuffed toy considering the main component shapes required and creating an appropriate template parallel circuits	**Playgrounds** * Know about a variety of structures * Improve a design based on peer evaluation * Build a structure - measure, mark and cut wood accurately * Use a range of materials to reinforce and add decoration * Understand the difference between natural and man-made **Microbit** • To know that a 'device' means equipment created for a certain purpose or job and that monitoring devices observe and record. • To know that a sensor is a tool or device that is designed to monitor, detect and respond to changes for a purpose. • To understand that conditional statements (and, or, if booleans) in

		* Design a greetings card which incorporates a circuit * Clearly label the design * Refer to a design criteria whilst making * Suggest improvements to a design" * Create a 3D stuffed toy from a 2D design * Measure, mark and cut fabrics accurately and independently * Thread needles independently * Create strong and secure blanket stitches when joining fabric * Use applique to decorate fabric * Test and evaluate an end product"	programming are a set of rules which are followed if certain conditions are met. • To understand what a virtual model is and the pros and cons of traditional vs CAD modelling.
Year 6	**Steady Hand Games** * Understand how electromagnetic motors work * Make an electromagnetic motor and improve its function by tweaking the motor * Know that batteries contain acid * Design a product, including the names of the components * Draw a plan from different perspectives * Create a prototype * Cut, fold and assemble a net * Assemble electrical components, ensuring the circuit works		**Come Dine with Me** * Know how to research a recipe by ingredient * Follow a recipe accurately, including weighing correct quantities of each ingredient * Know where food comes from * Adapt a recipe based on research * Evaluate health and safety in production to minimise cross contamination **Automata Toys** * Use woodworking tools * Measure, mark and check the accuracy of the jelutong and dowel pieces required * Use a bench hook to saw safely and effectively * Assembly components to make a frame * Explain what an axle is for, create effective joints * Create a design based on a cam * Evaluate a final product **Waistcoats** * Create a design according to a design specification * Identify a target audience * Mark and cut fabric accurately according to a design * Use a template pinned to fabric * Use a strong running stitch, make small neat stitches, follow the edge of the fabric * Tie strong knots * Use decorative stitches * Add a secure fastening * Evaluate work continually as it is created **Microbit** • To know that accelerometers can detect movement. • To understand that sensors can be useful in products as they mean the product can function without human input.