

DESIGN AND TECHNOLOGY

DISCIPLINARY KNOWLEDGE PROGRESSION

	KS1	Y3/4	Y5/6
Master practical skills Textiles	- Shape textiles using templates. - Join textiles using running stitch. - Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing).	- Understand the need for a seam allowance. - Join textiles with appropriate stitching. - Select the most appropriate techniques to decorate textiles.	- Create objects (such as a cushion) that employ a seam allowance. - Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). - Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion)
Master practical skills Electricals and electronics	Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage).	Create series and parallel circuits.	Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips)
Master practical skills Construction	Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. • •	- Choose suitable techniques to construct products. - Strengthen materials using suitable techniques.	Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding)
Master practical skills Mechanics	Create products using levers, wheels and winding mechanisms	Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).	- Convert rotary motion to linear using cams. - Use innovative combinations of electronics (or computing) and mechanics in product designs

Master practical skills Computing	• Model designs using software. •	• Control and monitor models using software designed for this purpose.	• Write code to control and monitor models or products
Master practical skills Design, make, evaluate and improve	• Design products that have a clear purpose and an intended user. • Make products, refining the design as work progresses. • Use software to design. •	• Design with purpose by identifying opportunities to design. • Make products by working efficiently (such as by carefully selecting materials). • Refine work and techniques as work progresses, continually evaluating the product design.	• Use software to design and represent product designs. • Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Make products through stages of prototypes, making continual refinements. • Ensure products have a high quality finish, using art skills where appropriate. • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs
Master practical skills Take inspiration from designs through history	• Explore objects and designs to identify likes and dislikes of the designs. • Suggest improvements to existing designs. • Explore how products have been created. •	• Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. • Improve upon existing designs, giving reasons for choices. • Disassemble products to understand how they work.	• Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. • Create innovative designs that improve upon existing products. • Evaluate the design of products so as to suggest improvements to the user experience.