

Design and Technology
Long Term Plan
KS3

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7	<i>Materials, sustainability, waisting and reforming.</i> <i>Core material Knowledge</i>	Practical Application Wooden Model Train. Design using First Angle Orthographic Projection. Hand tools, H&S	Sketching and drawing, Crating Techniques, Rendering, One Point Perspective, Orthographic Projection.	Practical Application: Desk Phone Holder. Design Brief, CAD/CAM,H&S	CAD/CAM, 2D Design, Sketchup (Design a Kitchen), Laser Cutting, 5D Planner (architecture)	Practical Application: Night Light, Introduction to electricity, electronic components, Soldering, CAD/CAM,H&S
Year 8	Smart Materials, Modern materials, Quality Standards, Reverse Engineering	Practical application: Lamp Project. Market Research, Initial designs, development and final design, Using hand tools and assembling electronic components, Soldering and finishing techniques, H&S	Cad/CAM: An introduction to the basic tools in Sketchup, 2D Design and 5D Planner	Practical Application: Design a desk tidy using 2D design and SketchUp. Using hand and electrical tools to manufacture the desk tidy, laser cutting and H&S	Scales of production, Collaborative design, manufacturing specification, Quality control and evaluations	Practical application: Kitchen design using Sketchup. Make a scale model of their kitchen using paper and board, DTP, Soft wood based on a design style of their choice,H&S
Year 9	Innovation, Biomimicry, Environmental impact, SCAMPER, AI in design, Properties and scale and presentation	Practical Application: Storage project, Reverse engineering, product disassembly, Design and development, Hand and electric tools, CAD?CAM, Finishing and presentation, H&S	Core knowledge in modern materials, New Technologies, Energy generation, Modern materials, Smart materials, Electronic Systems, Programmable systems, Mechanical systems,	Practical Application: Design and make a self-standing clock, Bauhaus and Art Deco design movements, CAD/CAM. Design and Develop, Laser Cutting and 3D printing. Assembly and presentation H&S	CAD/CAM, Sketchup, 2D Design, 5D planner,	Practical Application: design the interior of a 3 bedroom house with 2 ensuite and another bathroom, open plan kitchen dining area, Double garage, and another room of your choice. The total surface area of the house is 140m squared.