BIG PICTURE CURRICULUM PLANNING - KEY STAGE 3	
The big aims of KS3	● To provide opportunities for pupils to identify problems in a range of contexts, design and make products that they may not want/need, but that meet the needs/wants of other people ● To create and develop pupils whose design ideas are not constrained by a lack of artistic ability; 'This is D&T, not Art.' ● To promote resilience and perseverance, using an iterative process pupils evaluate design ideas and amend as necessary ● To develop in pupils the ability to critically and objectively evaluate their own and commercial products ● To help develop pupils who appreciate the ethical, environmental and economic aspects of D&T - eg using polymers ● To develop confident, safe and increasingly skilled users of hand and machine tools ● To develop pupils' team working, interpersonal and communication skills
Characteristic of a compelling learning experience	● Development of Engineering Habits of mind: creativity, curiosity, problem solving, open-mindedness ● Discussion of and testing and developing of ideas ● Questioning that clarifies, stretches and challenges pupils' understanding ● Pupils involved in tasks that are intrinsically motivating ● ICT including Computer Aided Design being used as a tool to enhance learning and not simply as an end in itself ● Pupils select tools and equipment and can evaluate their effectiveness ● Pupils consider and apply mathematical and scientific principles to develop appropriate design proposals that meet customer needs
Key concepts	● Researching - the work of past present and present professionals ● Designing ● Making and planning ● Evaluating
Key Knowledge	● **Materials:** know that all materials possess properties and these determine the material's suitability for a purpose ● **Components:** identify and explain the function of a range of standard components ● **Tools and equipment:** what are they and what are they used for and not used for ● **Electronics:** understanding of the function of electronic components and use in products ● **Mechanisms:** the ways in which we can use machines to affect the direction and size of a force

	● **New technologies:** how developments need to be critically evaluated taking account of economic, ethical and environmental perspectives ● **Energy:** renewable v non-renewable sources and sustainability issues
Key skills	● Gathering information from source material, analysing, allowing pupils to identify relevant problems ● Writing design briefs and specifications that reflect earlier research and provide a framework for designing ● Apply engineering habits of mind ● Calculating - using maths to improve aspects of a design or manufacturing plan ● Marking out, cutting, shaping, finishing and assembling ● Effective use of CAD CAM in design and manufacturing products ● Annotating and sketching ideas ● Critically evaluating their own and others' work