

BIG PICTURE CURRICULUM PLANNING - KEY STAGE 3

<p>The big aims of KS3</p>	<ul style="list-style-type: none"> <li>● 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</li> <li>● To create and develop pupils whose design ideas are not constrained by a lack of artistic ability; ‘This is D&amp;T, not Art.’</li> <li>● To promote resilience and perseverance, using an iterative process pupils evaluate design ideas and amend as necessary</li> <li>● To develop in pupils the ability to critically and objectively evaluate their own and commercial products</li> <li>● To help develop pupils who appreciate the ethical, environmental and economic aspects of D&amp;T</li> <li>● To develop confident, safe and increasingly skilled users of hand and machine tools</li> <li>● To develop pupils’ team working, interpersonal and communication skills</li> </ul>
<p>Characteristic of a compelling learning experience</p>	<ul style="list-style-type: none"> <li>● Development of Engineering Habits of mind: creativity, curiosity, problem solving, open-mindedness</li> <li>● Discussion of and testing and developing of ideas</li> <li>● Questioning that clarifies, stretches and challenges pupils’ understanding</li> <li>● Pupils involved in tasks that are intrinsically motivating</li> <li>● ICT being used as a tool to enhance learning and not simply as an end in itself</li> <li>● Pupils select tools and equipment and can evaluate their effectiveness</li> <li>● Pupils consider and apply mathematical and scientific principles to develop appropriate design proposals that meet customer needs</li> </ul>
<p>Key concepts</p>	<ul style="list-style-type: none"> <li>● Researching - the work of past present and present professionals</li> <li>● Designing</li> <li>● Making</li> <li>● Evaluating</li> </ul>
<p>Key Knowledge</p>	<ul style="list-style-type: none"> <li>● <b>Materials:</b> know that all materials possess properties and these determine the material’s suitability for a purpose</li> <li>● <b>Components:</b> identify and explain the function of a range of standard components</li> <li>● <b>Tools and equipment:</b> what are they and what are they used for and not used for</li> <li>● <b>Mechanisms:</b> the ways in which we can use machines to affect the direction and size of a force</li> <li>● <b>PICs:</b> can be used to embed functionality in a product</li> </ul>

	<ul style="list-style-type: none"><li>● <b>New technologies:</b> how developments need to be critically evaluated taking account of economic, ethical and environmental perspectives</li><li>● <b>Energy:</b> renewable v non-renewable sources and sustainability issues</li></ul>
Key skills	<ul style="list-style-type: none"><li>● Gathering information from source material, analysing, allowing pupils to identify relevant problems</li><li>● Writing design briefs and specifications that reflect earlier research and provide a framework for designing</li><li>● Apply engineering habits of mind</li><li>● Calculating - using maths to improve aspects of a design or manufacturing plan</li><li>● Marking out, cutting, shaping, finishing and assembling</li><li>● Annotating and sketching ideas</li><li>● Critically evaluating their own and others' work</li></ul>