

# Long Term Plan: Design and Technology Year 9

Half term	Unit title	Key knowledge/ Content to learn and retain	Essential skills to acquire (subject & generic)	Link to subject ethos and driver (rename)	Anticipated misconceptions	Links to previous KS	Links to future KS	Opportunity for stretch for high prior attainers	SMSC & British Values	Cultural Capital	Career Link
One	Building a Product	<p>The design, make, evaluate cycle</p> <p>The use of CAD/CAM</p> <p>Properties of common materials</p> <p>Common electronic components</p> <p>Drawing circuit diagrams</p>	<p>Designing a product for an intended user</p> <p>Accurate measuring and cutting</p>		<p>The difference between CAD and CAM</p> <p>Students may confuse “hard” with “strong” and “ductile” with “malleable”</p>	<p>Students will have explored various common resistant materials as part of the upper KS2 programme of study, as well as simple electrical circuits.</p> <p>In Year 7, students practiced the design, make, evaluate cycle; as well as an introduction to material properties</p>	<p>As a fundamental introductory course, the key stage three programme of study lays the foundation for future study of either a Design and Technology or Engineering qualification at GCSE</p>	<p>Consider different materials that could be used for the casing of their product and justify the uses of the material chosen.</p>	<p>Different products for different target clients, including potential users from all backgrounds and how this affects their needs</p>	<p>Exploration of different designers and materials that students may not have encountered before</p>	<p>As an introductory course, the KS3 technology programme of study lays the foundations for a wide range of STEM field careers.</p>

						In Year 8, students will have explored the simple electrical circuits and the construction of these using solder.					
Two	Programming a Product	<p>The use of solder and a soldering iron</p> <p>The use of different components within a circuit</p> <p>How a simple computer programme works.</p>	<p>Interpret circuit diagrams</p> <p>Accurate and safe use of a soldering iron</p> <p>Evaluating products against a given criteria</p> <p>Write a simple computer programme using a drag and drop language</p>		<p>The difference between a battery and a cell.</p> <p>The circuit diagrams of a number of components are similar and easy to confuse so will require explicit teaching and practice</p> <p>The different uses of each command within the crumble programming language</p>	<p>Students will have explored various common resistant materials as part of the upper KS2 programme of study, as well as simple electrical circuits.</p> <p>In Year 7, students practiced the design, make, evaluate cycle; as well as an introduction to material properties</p> <p>In Year 8, students will have explored the simple electrical</p>	As a fundamental introductory course, the key stage three programme of study lays the foundation for future study of either a Design and Technology or Engineering qualification at GCSE	Students could be challenged to programme more advanced features into their product.	Different products for different target clients, including potential users from all backgrounds and how this affects their needs	<p>Exploration of different designers and materials that students may not have encountered before.</p> <p>The use of programmable products across a wide range of sectors, including both everyday and more niche uses</p>	As an introductory course, the KS3 technology programme of study lays the foundations for a wide range of STEM field careers.

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As a rotation subject at KS3, Design and Technology is taught for 1 full term, before students rotate into another technology subject.