

## Design and Technology Curriculum Overview

Design & Technology is an inspiring, rigorous and practical subject. Creativity, imagination and practical realisations are core to the delivery of this subject. Students design and make products that solve real world and relevant problems within a variety of set contexts, considering their own, others' and client needs, wants and values. Students are encouraged to inquisitively question the established conventions and seek out innovation whilst using terminology accurately.

The world of D&T is ever changing and our curriculum gives students the foundation of design principles, and processes that can be adapted to whatever new technologies evolve. Curriculum projects are regularly reviewed in order to meet the specific needs of the students and the developments within the local, national and global field.

Sequential lesson plans and explicit lesson resources support a consistent approach to the curriculum. At Key Stage 3 students engage in projects that provide them with an insight into aspirational careers as well as a range of practical skills which they may need in in both their future lives.

Knowledge and skills gained in Key Stage 3 are built upon at Key Stage 4, as students are offered the opportunity to opt for specific qualifications in engineering and construction. We further students' knowledge and understanding of industries linked to these qualifications by establishing links with local colleges and professional companies in order to further prepare them for future career opportunities.

Collaborative learning approaches are used in all lessons in which students are encouraged to gain experiences in leadership, teamwork and project management. Through this approach students learn how to take calculated risks; becoming resourceful, creative, innovative, and capable citizens who are aware of their environment and their impact on the future of the planet.

	<b>Rotation (1/2 year)</b>
<b>Year 7</b>	Introduction to the workshops Intro to planning & GANNT Charts <b>Keyring Project</b> Intro to Risk Assessments <b>Desk Tidy Project</b> Intro to building & structures Intro to engineering drawing & CAD Analysing a design brief Working to a specification Intro to 3D CAD <b>Eco Building Project</b>

<b>Year 8</b>	<p>Developing 3<sup>rd</sup> Angle Projection Skills</p> <p><b>Bottle Opener Project</b> Intro to ergonomics Developing risk assessments</p> <p><b>Ikea Project</b> Modelling designs Introduction to Mass Manufacture Developing CAD &amp; CAM</p> <p><b>Pencil Box Project</b> Developing quality and accuracy checks</p>
<b>Year 9</b>	<p><b>Organiser Project</b> Developing independence in the workshop Understanding engineering tolerances</p> <p><b>Flat Packed Furniture Project</b> 2D &amp; 3D CAD skills. Using CAD as a modelling tool</p> <p><b>Storage Project</b> Designing to a specification Planning and making high quality items independently</p>

<b>Key Stage 4 - Engineering</b>			
	<b>Autumn</b>	<b>Spring</b>	<b>Summer</b>
<b>Year 10</b>	<p>Interpreting Engineering Drawing (BS8888)</p> <p>Planning for manufacture Risk Assessment</p> <p>Turning using a Centre Lathe Drilling and Tapping steel</p> <p>Understanding Engineering Materials</p>	<p>Marking Out Skills Measuring skills</p> <p>Turning Using a Centre Lathe</p> <p><b>G Glamp Project</b> Scales of Manufacture Quality Control</p> <p>Manufacturing Processes</p>	<p>Mock NEA</p> <p><b>Tin Can Lamp</b> Planning Risk Assessment</p> <p>Turning &amp; Fitting Skills Quality Control</p> <p>Evaluation against Specification</p>

	Developing 3D CAD & CAM skills <b>Toolmaker's Clamps</b>	3D CAD & CAM skills	<b>Ro15 NEA</b>
<b>Year 11</b>	<b>Ro15 NEA</b> Ro14 Mock Exam Preparation <b>Ro16 NEA</b>	<b>Ro16 NEA</b> Ro14 Exam Preparation	Ro14 Exam Preparation

<b>Key Stage 4 - Construction</b>			
	<b>Autumn</b>	<b>Spring</b>	<b>Summer</b>
<b>Year 10</b>	Legislation Health & Safety Risk Assessments Introduction to Joinery Project Planning <b>Tool Tray Project</b>	<b>Brickwork Project</b> Structures & Buildings Infrastructure Building Life Cycle Technology & Materials <b>Mock NEA</b>	<b>Mock NEA</b> Sustainability Careers Disposal of Materials <b>Brickwork NEA</b>
<b>Year 11</b>	Exam Preparation & Revision <b>Brickwork NEA</b> <b>Joinery NEA</b>	Exam Preparation & Revision <b>Joinery NEA</b> <b>Tiling NEA</b>	Exam Preparation & Revision