



Key Stage: 4

Subject: Design & Technology: Resistant Materials

Aims of the subject:

We provide a high-quality design and technology education that should give pupils opportunities to create, innovate, design, make and evaluate a variety of well-crafted products that are fit for purpose. Pupils will be taught the technical skills and craftsmanship to execute practical tasks, thereby developing confidence to increase their skills, knowledge and competence in using materials, machinery, techniques and processes. Pupils should develop valuable practical skills and use these safely with a range of resistant and non-resistant materials, drawing media tools and equipment, in both 2D and 3D. They will be shown how to communicate their ideas and designs skillfully and accurately in 2D and 3D, using a variety of techniques, including digital technology. They should know about good design, everyday products and use correct technical terminology with Design & Technology literacy. They will be allowed to investigate and analyse the rich history of design and technological innovation and the work of others, including iconic designs, to inform their own work. They will be shown developments in design and technology and the responsibilities of designers, including environmental responsibilities. Pupils should clearly enjoy the subject, whilst developing a mastery of Resistant Materials. They will be guided by a teacher who themselves demonstrates a passion for Design & Technology.

Year 9

Year	What will I learn?	What will I do?
Year 9 (2014 – 15)	<p>Term 1 – Theoretical Underpinning & Wooden Container project Theoretical underpinning of Woods, Design of a Traditional wooden container (influence by Charles Rennie Mackintosh) – sketching (2D / 3D – boxes / 2pt perspective), communication & presentation skills, research, hardwoods, leather, CAD (Illustrator) / CAM (laser Cutter), industrial manufacture, cutting / sawing wood joints, sanding, finishing, detailing, Testing & Evaluation, Development / Extension – Japanese Secret boxes</p> <p>Term 2 – Theoretical Underpinning & Secret Container project 'Karim Rashid' Secret Container / Box, Sketching (2D / 3D - organic), communication & presentation skills, research, hardwoods / modelling board, 3D printing, CAD (CREO) / CAM (Boxford), industrial manufacture, cutting / CAM machining of container, sanding, finishing, detailing, fitting, Testing & Evaluation, Development / Extension – Japanese</p>	<p>Research, Sketching & Presentation skills, Initial Design Ideas, Development, Final Design, Wood Joints, Sawing, Cutting, Joining, Detailing, Finishing, Laser Cutting, Assembling, testing & evaluation</p> <p>Research, Sketching & Presentation skills, Initial Design Ideas, Development, Final Design Solution</p>

	<p>Secret boxes, 3D complex forms</p> <p>Term 3 - Theoretical Underpinning & Secret Container project 'Karim Rashid' Secret Container / Box, Sketching (2D / 3D - organic), communication & presentation skills, research, hardwoods / modelling board, 3D printing, CAD (CREO) / CAM (Boxford), industrial manufacture, cutting / CAM machining of container, sanding, finishing, detailing, fitting, Testing & Evaluation, Development / Extension – Japanese Secret boxes, 3D complex forms, Comparative testing between traditional and modern approaches</p>	<p>CAD, CAM (Boxford), 3D Printing, Detailing, Finishing, Assembling, testing & evaluation, Comparative testing</p>
<p>Year 10 (2014 – 15)</p>	<p>Term 1 – Theoretical Underpinning & Wooden Container project Theoretical underpinning of Woods, Design of a Traditional wooden container (influence by Charles Rennie Mackintosh) – sketching (2D / 3D – boxes / 2pt perspective), communication & presentation skills, research, hardwoods, leather, CAD (Illustrator) / CAM (laser Cutter), industrial manufacture, cutting / sawing wood joints, sanding, finishing, detailing, Testing & Evaluation, Development / Extension – Japanese Secret boxes</p> <p>Term 2 – Theoretical Underpinning & Secret Container project 'Karim Rashid' Secret Container / Box, Sketching (2D / 3D - organic), communication & presentation skills, research, hardwoods / modelling board, 3D printing, CAD (CREO) / CAM (Boxford), industrial manufacture, cutting / CAM machining of container, sanding, finishing, detailing, fitting, Testing & Evaluation, Development / Extension – Japanese Secret boxes, 3D complex forms</p> <p>Term 3 - Theoretical Underpinning & Secret Container project 'Karim Rashid' Secret Container / Box, 3D printing, CAD (CREO) / CAM (Boxford), industrial manufacture, cutting / CAM machining of container, sanding, finishing, detailing, fitting, Testing & Evaluation, Development / Extension – Japanese Secret boxes, 3D complex forms, Comparative testing between traditional and modern approaches. Start Major Coursework Project, Problem Identification, Research, Analysis, Design Ideas.</p>	<p>Research, Sketching & Presentation skills, Initial Design Ideas, Development, Final Design, Wood Joints, Sawing, Cutting, Joining, Detailing, Finishing, Laser Cutting, Assembling, testing & evaluation</p> <p>Research, Sketching & Presentation skills, Initial Design Ideas, Development, Final Design Solution</p> <p>CAD, CAM (Boxford), 3D Printing, Detailing, Finishing, Assembling, testing & evaluation, Comparative testing Select a project for Major Project, Start major project</p>

Year 11 (2014 - 15)	<p>Term 1 – ePortfolio Major Project Coursework Development of Design Ideas, Modelling & Testing, Final Design Solution, CAD, CAM, Planning for Manufacture, Costing</p> <p>Term 2 Component manufacture, Realisation, Finishing, Assembling, Evaluation & testing</p> <p>Term 3 Examination preparation (based on theme provided by examination board). Practise papers, tests, exam practise.</p>	
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Extra-curricular opportunities

Use of workshops with teacher supervision

How you can support your child's progress

Encourage all coursework to be completed to meet the set deadlines. Purchase of essential, basic graphics equipment to ensure high quality presentation skills are developed. All work will be assessed and monitored through Edmodo. If you wish to see what work has been set and the progress of your child then please ask for the Edmodo parent code from the relevant teacher.