

ENGINEERING DESIGN

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TERM 1 content and skills	TERM 2 content and skills	TERM 3 content and skills	EXTENDED CURRICULUM (trips/visits/after school activities)
Year 9			
<p>Option Choices Taster Mini projects (Coffee Shop theme):</p> <p>Pupils are given the opportunity to work in each of the subject specialisms we offer at KS4 level. They will spend 3 or 4 weeks in each area, carrying out activities which develop their knowledge, skills and understanding in the wider curriculum of D&T, but also allowing pupils to have an experience of each specialism, leading up to their year 9 option choices.</p> <p>Key specialisms:</p> <ul style="list-style-type: none"> • Graphical Communication • Constructing the Built Environment • Engineering Design / Design & Technology • Hospitality & Catering / Food & Nutrition 	<p>Option Choices Taster Mini projects (Coffee Shop theme):</p> <p>Pupils are given the opportunity to work in each of the subject specialisms we offer at KS4 level. They will spend 3 or 4 weeks in each area, carrying out activities which develop their knowledge, skills and understanding in the wider curriculum of D&T, but also allowing pupils to have an experience of each specialism, leading up to their year 9 option choices.</p> <p>Key specialisms:</p> <ul style="list-style-type: none"> • Graphical Communication • Constructing the Built Environment • Engineering Design / Design & Technology • Hospitality & Catering / Food & Nutrition 	<p>Please see DT Curriculum Map</p>	
<p>Assessment: D&T Curriculum at KS3</p>	<p>Assessment: D&T Curriculum at KS3</p>	<p>Assessment: D&T Curriculum at KS3</p>	

Year 10

<p>Introduction to the Course R105: Knowledge & Understanding The Design Cycle / Identifying Design Needs: Design Briefs / Design Specifications / Product Requirements</p> <p>Key Skills Hand Drawing Techniques- Freehand Sketching / Crating Rendering Skills / Shading / Textures Annotation and Labelling Using ICT Software- Introduction to 2D Design and Google SketchUp. 2D Drawings 3D Drawings Flat Pack Chair Project</p>	<p>R105: Knowledge & Understanding Manufacturing Considerations: Materials and Supply- Materials Availability / Supply Chain Manufacturing Considerations: Ease of Manufacture- Standard Components VS Pre-Manufactured / Design for Manufacturing Assembly Manufacturing Considerations: Scale, Reliability, Safety and Sustainability- Prototypes / One Off / Batch / Mass Production Costs / Regulations and Safeguards</p> <p>R106: Coursework Research Methods for Product Analysis- Primary / Secondary Analysing Existing Products – Strengths / Weaknesses Dyson Box - Disassembly Methods and Procedures. Dyson Box - Safe Product Disassembly Dyson Box - Analysing Products Through Disassembly.</p>	<p>R105: Knowledge & Understanding Market Forces- Market Pull / Technological Push Legislation and Design- Product Safety / Packaging Requirements Inspirational Design and New Materials Technology Life Cycle Analysis / Environmental Pressures</p> <p>R105 Revision – Topics / Practice Exam Questions</p> <p>R106: Coursework Commercial Production Methods- One Off / Batch / Mass Production Manufacturing Processes and Design. End Of Life Considerations- Recycling of Materials / Reusing Components / Safe Disposal of Toxic Hazards. Product Conformity- Legislation / Quality Standards / Patents & Copyrights. Summarising and Presenting Research Outcomes.</p>	<p>Industry Visit when possible</p> <p>Coursework Catch Up Sessions</p>
<p>Assessment:</p>	<p>Assessment:</p>	<p>Assessment: R105 Mock Exam - Easter R105 Exam – June Series R106 Set Assignment - Coursework Submission - (Product Analysis & Research-Dyson Box)</p>	

Year 11

<p><u>R107: Coursework</u> Hand Drawing Techniques- Freehand Sketching / Crating Rendering Skills / Shading / Textures Annotation and Labelling Using ICT Software- Introduction to 2D Design and Google SketchUp. 2D Engineering Drawings- Orthographic Views / Sections 3D Engineering Drawings- Isometric / Oblique / One Point Perspective / Exploded Views CAD Applications Communicating Design Proposals Technical Drawing Project</p>	<p><u>R107: Coursework</u> 3D Engineering Drawings- Isometric / Oblique / One Point Perspective / Exploded Views CAD Applications Communicating Design Proposals Technical Drawing Project</p> <p><u>R108: Coursework</u> Interpreting Product Specifications / Product Design Specification Materials and Processes- Plan of Making Planning and Resources- Detailed Production Plan / Flow Chart / Gantt Chart Risks, Hazards and Risk Assessment Working Safely and PPE- Production Plan Using Hand Tools and Machines</p>	<p><u>R108: Coursework</u> Recording Prototype Making- Production Diary Introduction of Different Materials Tools and Processes- Marking Out / Cutting / CAD/CAM / Bending / Moulding / Prototyping Preparation and Assembly- Jigs / Formers / Patterns / Templates Comparing Prototype, Plan and Specification – Testing / Evaluation Evaluating Improvements Evaluating Personal Performance</p>	<p>Industry Visit?</p> <p>Coursework Catch Up Sessions</p>
<p>Assessment:</p>	<p>Assessment: R105 Exam Resit Opportunity</p>	<p>Assessment: R107 Set Assignment- Coursework Submission - (Speaker Project- Design) R108 Set Assignment- Coursework Submission - (Speaker Project - Make)</p>	