

# Our Lady Queen of Peace

Catholic Engineering College

## Curriculum Overview

### YEAR 10 GCSE Design & Technology

	Knowledge & Understanding			Subject Specific Literacy Development		Cultural Capital / Enrichment Opportunities
	Composites (Bigger Picture)	Components (Key Concepts)	Recall & Retrieval Practice Focus	Reading for meaning	Key Vocabulary	
Half Term 1	<b>Completion of section A in the NEA Research/Investigation and analysis</b>	<p>Students must have completed the following work in their NEA portfolio:</p> <ul style="list-style-type: none"><li>Understanding the Context / Design Brief</li><li>Primary &amp; Secondary Research</li><li>Product Analysis (ACCESS FM)</li><li>User Needs and Client Profile</li><li>Technical Research</li><li>Sustainability and Ethical Considerations</li><li>Identifying Design Opportunities</li><li>Writing a Design Specification</li></ul>	<p>Building on exam technique and knowledge from year 10</p> <p>Exam style questions on:</p> <p>Sources and origins</p> <p>Properties and characteristics</p> <p>Stock forms, types, and sizes</p> <p>Tools, equipment and processes</p> <p>Surface treatments and finishes</p> <p>Key Piece: Case study on Apple designs.</p>	<p>The positives and negatives of AI</p>	<p>Analysis</p> <p>Primary and Secondary</p> <p>User Needs</p> <p>Sustainability</p> <p>Specification</p>	<p>Subject Enhancement sessions.</p> <p>Motorsports club</p> <p>College links</p> <p>Industry Visit</p>

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Half Term 2	<b>Completion of section B/C in the NEA</b>  <b>Development of design ideas</b>	<p>Students must have completed the following work in their NEA portfolio:</p> <ul style="list-style-type: none"> <li>Generating a Range of Ideas</li> <li>Annotating Ideas Clearly</li> <li>Iterative Design Thinking</li> <li>Modelling and Prototyping</li> <li>Technical Knowledge Integration</li> <li>Meeting the Design Specification</li> <li>Justifying Design Decisions</li> </ul>	<p>Building on exam technique and knowledge from year 10</p> <p>Exam style questions on: Physical Properties Working Properties Modern and Smart Materials. Composites and technical textiles.</p> <p>Key Piece: Manufacturing Plan</p>	How to think Like a designer	Design Fixation Annotation Communication CAD/CAM Modelling Rapid Prototyping Testing Creativity	Subject Enhancement sessions.  Motorsports club  College links  Industry Visit
Half Term 3	<b>Completion of section C/D in the NEA</b>  <b>Realising and evaluating design ideas</b>	<p>Students must have completed the following work in their NEA portfolio:</p> <ul style="list-style-type: none"> <li>Planning for Manufacture</li> <li>Use of Tools, Equipment, and Processes</li> <li>Material Selection and Justification</li> <li>Accuracy, Quality, and Finishing</li> <li>Iterative Improvements During Making</li> <li>Testing Against the Specification</li> <li>User and Client Feedback</li> <li>Evaluating the Design Process</li> <li>Sustainability and Environmental Impact</li> <li>Communication of Final Outcome</li> </ul>	<p>understanding of different types materials including wood, metals and plastics.</p> <p>Exam style questions on: New Materials Metals and alloys Polymers Natural and manufactured timbers Recall practice on CAD/CAM, Tolerances, Quality Control</p>	How iteration supports the design process	Production Plan Justification Tolerance Accuracy Iterative Evaluation Feedback	Subject Enhancement sessions.  Motorsports club  College links  Industry Visit

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Half Term 4	<b>Specialist Technical Principles (Section B – 30 marks Unit 1 Exam Revision)</b>  <b>Designing and Making Principles (Section C – 50 marks Unit 1 Exam Revision)</b>	For section B students will have detailed knowledge of timbers and will be able to analyse questions and formulate responses in the following areas: <ul style="list-style-type: none"> <li>• Sources and origins</li> <li>• Properties and characteristics</li> <li>• Stock forms, types, and sizes</li> <li>• Tools, equipment and processes</li> <li>• Surface treatments and finishes</li> </ul>	Section B exam questions  Section C exam questions  Key Piece: Questions from Section B  Key Piece: Questions from section C	Design of the last 20 years.	Prototype Sketching Modelling Testing Function Cost Availability Research Ergonomics Anthropometrics Packaging	Subject Enhancement sessions.

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		<p>For section C students will have detailed knowledge of how to apply designing and making principles to different scenarios and will be able to respond to exam questions by covering each area:</p> <p><b>1. Investigating</b></p> <ul style="list-style-type: none"> <li>• Analysis of existing products</li> <li>• Primary and secondary research</li> <li>• Identifying user needs</li> </ul> <p><b>2. Designing</b></p> <ul style="list-style-type: none"> <li>• Specification writing</li> <li>• Generating and developing ideas</li> <li>• Communicating and modelling ideas</li> </ul> <p><b>3. Making</b></p> <ul style="list-style-type: none"> <li>• Tools, materials and processes</li> <li>• Quality control and accuracy</li> </ul> <p><b>4. Evaluating</b></p> <ul style="list-style-type: none"> <li>• Testing ideas and final outcomes</li> <li>• Considering environmental, social and economic factors</li> <li>• Using feedback from users/client</li> </ul>		Sustainability on the south bank.	<p>Explain</p> <p>Describe</p> <p>Justify</p> <p>Evaluate</p> <p>Annotate</p>	Subject Enhancement sessions.
Half Term 5	Bespoke revision sessions.	Content based on exam sections question analysis and practise	Past exam paper questions tailored to students knowledge			Subject Enhancement sessions

## Key Assessments

When	What will be assessed?	Why is this being assessed?	How will results be stored & students receive feedback?
Half Term 1	Unit 1 Principles – Exam questions  Unit 2 NEA	Assess Understanding of the content taught for Unit 1 (Exam) so far  Section A Completed section to be graded for coursework marks.	Written feedback given to students and recorded on tracker.
Half Term 2	Unit 1 Principles – Mock Exam  Unit 2 NEA	Assess Understanding of the content taught for Unit 1 (Exam) so far, written mock exam assessment.  Section B Completed section to be graded for coursework marks.	Recorded on tracker and SIMS, students will receive marked papers back with areas for improvement.
Half Term 3	Unit 1 Principles  Unit 2 NEA	Assess Understanding of the content taught for Unit 1 so far, written mock exam assessment.  Section C/D Completed section to be graded for coursework marks.	Recorded on tracker, students will receive marked papers back with areas for improvement. Recorded on tracker with written feedback for students.
Half Term 4	Unit 1 Core Technical Principles – Mock Exam	Assess Understanding of the content taught for Unit 1, written exam assessment in exam conditions.	Live Feedback given on work
Half Term 5	Unit 1 Core Technical Principles	Assess Understanding of the content taught for Unit 1 so far, written exam assessment.	Live feedback given during lessons.