THE EARLS HIGH SCHOOL

EXCELLENCE | CARE | PARTNERSHIP

KS4 Curriculum overview: RESISTANT MATERIALS

Year 10 Curriculum Map

Autumn Term	Spring Term	Summer Term
10 WEEK STORAGE BOX PROJECT **KNOWLEDGE & UNDERSTANDING** • Health & safety induction • Industry & Enterprise • Sustainability • People & Culture • Society & Environment • Social, Cultural & Moral Challenges • Production Techniques & Systems • Informing Design Decisions • Energy storage systems • Personal Protective equipment • Crowd Funding • Co-operative • Fairtrade • 6Rs • Technology push & market pull • Social, cultural & moral challenges • Scales of production **DESIGNING** • Rendering & oblique drawing • Two-point perspective & linking boxes	**9 WEEK CLOCK PROJECT** **KNOWLEDGE & UNDERSTANDING** • Selection of **TIMBER** materials and components • Selection of **METAL** materials and components • Selection of **POLYMER** materials and components • Forces & stresses • Sources & origins of **TIMBERS** • Sources & origins of **METALS** • Sources & origins of **POLYMERS** • **TIMBER** Stock forms, types & sizes • **METAL** Stock forms, types & sizes • **POLYMER** Stock forms, types & sizes **DESIGNING** • Design brief • Specification • Needs & wants • Analysis of context (thought shower) • Mood board • Scruffiti & Geometric shapes	**8 WEEK PEWTER CASTING PROJECT** **KNOWLEDGE & UNDERSTANDING** • Finishes for **TIMBER** • Finishes for **METAL** • Types of **TIMBER** joints • Types of Adhesives • Joining **METALS** • Moulding& forming **PLASTICS DESIGNING** • Design brief • Specification • Jack Straws & Geometric shapes • Design development • Planning flow chart & Gantt charts • Evaluations • Product testing **HOME LEARNING** • Electrical System • Fossil Fuels & Nuclear Power • Renewable energy • Motion & levers • Linkages and Mechanisms

• Isometric drawing, scale & line weighting • Orthographic projection & dimensioning • Design brief • Specification • Needs & wants • Product analysis • Production diary • Evaluations **HOME LEARNING**	• Development • Production diary • Evaluations **HOME LEARNING** • Famous designers • Past & present companies • Physical Material Properties • Mechanical Material properties Modern Materials	• KD fittings & components • Moulding polymers **KNOWLEDGE & UNDERSTANDING TEST 3** **4-5 WEEK NEA PREPERATION PROJECT** **PPE 1** **NEA STARTS 1ST JUNE**

Year 11 Curriculum Map

Autumn Term	Spring Term	Summer Term
GCSE Non-Exam Assessment (section A) • Design opportunities • Client / Use needs & wants • The work of others • Product impacts • Initial Research **GCSE Non-Exam Assessment (section B)** • Research analysis • Design brief • Analysis of the brief • Product specification **GCSE Non-Exam Assessment (section C)** • Initial ideas X3 • Initial CAD ideas • Design Evaluation • Concept modelling X3 **PPE 2**	**GCSE Non-Exam Assessment (section D)** • Client feedback • Further research • Design development • Design testing • Further modelling • Final design • Working drawing • Manufacturing specification • Cutting list & costing **GCSE Non-Exam Assessment (section E)** • Manufacturing the prototype **PPE 3**	**GCSE Non-Exam Assessment (section F)** • Prototype testing • Evaluation against brief & specification • Client feedback • Summary • Modifications **GCSE Exam preparations** Analysing and Evaluating -20marks