



DT - 5 YEAR PLAN

	Autumn 1 Product Design		Autumn 2 Product Design		Spring 1 Product Design		Spring 2 Product Design		Summer 1 Product Design		Summer 2 Product Design	
KS3 7	Intro to subject- graphic skills. Health & Safety in the workshop. Graphic skills- one point, two point. Front cover design- hand drawing skills, CAD, CAM.	AW1- Nov initial graphic skills to developed design (designing)	Using CAD- Designing a logo for the front of their books. Hand drawing skills, simple card model making skills, CAD skills. Use of CAM- laser cutter stencil		Mini light- polymer theory Circuits and the flow of electricity Manipulating thermoplastics Packaging project Sketching ideas Net development Tabs, complexity CAD Quality control		Mini light- polymer theory Circuits and the flow of electricity Manipulating thermoplastics Packaging project Sketching ideas Net development Tabs, complexity CAD Quality control	AW2- March Mini Light Project (practical)	Structures- producing high quality products Quality Assurance Technical drawing Quality inspection A range of structures, levels theory, mechanisms. Production techniques- One off, batch, mass and continuous.		Structures- using success criteria to establish best design. Ratios and efficiency of design and materials. Strength to weight ratios. Scales of Production Job, Batch, Mass & Continuous. Advanced drawing & CAD skills 2D to 3D construction Orthographic Drawing Formal exam	AW3- Exam (Subject knowledge)
8	Jitterbug- Developing a design brief and specification, target markets, graphic skills and use basic hand tools. Maths linked homework. Graphic skills. Thermoplastic and thermosetting Plastic	AW1- Nov developed designs (designing)	Jitterbug- Developing a final product. Industrial processes, vacuum forming, soldering simple circuits Knowledge of materials Measuring, Marking Holding, Cutting Shaping, Joining Finishing Tools recognition Testing and ongoing evaluation		Laminating project. Surface finishes Mould making CAD- 2D Design and Sketch Up. CAM- Laser cutter. Sustainability 6 R's	AW2-Jan Marking out and cutting (practical)	Laminating project. Surface finishes Mould making CAD- 2D Design and Sketch Up. CAM- Laser cutter. Sustainability 6 R's		Advance skills Graphics Understanding and practice in 2D and 3D drawing skills Rendering shapes and products to appear solid and realistic. Material theory- wood, plastics, metals, smart/ modern materials	AW2-May CAD (designing)	Advance skills Graphics Understanding and practice in 2D and 3D drawing skills Rendering shapes and products to appear solid and realistic. Material theory- wood, plastics, metals, smart/ modern materials Formal exam	AW3- Exam (Subject knowledge)
KS4 9 DT	History of Design Light Research design movements Computer aided design Designing Ideas & development of final idea Modelling CAD Ergonomics Anthropometrics Concept modelling	AW1-Nov CAD light	History of design Light Product analysis Client profiles Soldering/ basic electronics Vacuum forming Drilling Laser cutting and laser etching Evaluation		Pewter casting Theory – Metals Ferrous & non-ferrous Metals & Alloys Manufacturing in metal Hot metal working The casting process Importance of moulds Health & Safety issues Orthographic Drawing		Traditional wood working skills Softwood box Theory- materials Types of wood and their applications Smart and modern materials Advanced drawing skills- hand and CAD	AW2-March Technical drawing (practical)	Steady hand game Advanced electronics and soldering CAD/CAM laser cutter Stencil making Logo design Line bending		Quality Control management in Product Design Technical drawings High quality making skills Presentation skills Evaluating project Sustainability 6 R's Formal exam	AW3- Exam Past GCSE questions (Subject knowledge)
KS4 9 Engineering	Health & Safety Technical drawing skills Isometric Exploded drawing Modern and smart materials CAD/CAM 3D printing	AW1-Nov materials, tools and processes research	Litter picker HDPE polymer Hardwood Non-Ferrous metals Process: Drilling, riveting, recycling polymers Jigs and templates		Litter picker HDPE polymer Hardwood Non-Ferrous metals Process: Drilling, riveting, recycling polymers Jigs and templates		Alimals- Aluminium animals Non-Ferrous metals Process: Drilling, riveting, Jigs and templates Use of 2D design- CAD Laser cutting templates	AW2- March Mold making (practical)	Wiggly Wire game Electronics Hand powered tools Materials- Polymers, metals Processes- Vacuum forming, soldering		Take flight- Catapults, paper planes, water rockets Forces Theory of flight Maths- measurements, angles of projection	AW3- Exam Past Engineering questions (Subject knowledge)
KS4 10 DT	Drawing skills- rendering, One point, two point, isometric Prototype hand held devise Practice NEA Research Client Writing a brief and specification Product Analysis Designing	AW1- Nov Final Hand drawn design	Prototype hand held devise Practice NEA Research Client Writing a brief and specification Product Analysis Designing		Surfs Up! Jewellery and display stand Formal drawing skills Evaluation techniques Art & Design movements Theory Materials Smart Materials	AW2-Jan Practice NEA Section C & D NEA hand held	Surfs Up! Jewellery and display stand Graphic skills Model making Theory – Materials Ergonomics Anthropometrics Theory Materials Smart Materials		Theory- Sustainability 6 R's Theory – Materials Ergonomics Anthropometrics Smart Materials Product analysis How to write effective evaluations	EXAM	Examination results analysis Focus on tackling weaker answers Sketch Up – advance drawing skills PPE answers NEA- Research coursework Main topic& analysis Brief analysis Materials & sustainability Target Client Profile Design Specification Product disassembly	AW3- Exam Past paper (subject knowledge)

KS4 10 <i>Engineering</i>	Follow OCR Scheme- Practice NEA- Phone holder Following technical drawings Making templates	AW1- Nov	Follow OCR Scheme- Practice NEA- Phone holder Following technical drawings Making templates	Follow OCR Scheme- NEA- aluminium hammer Engineers lathe Following technical drawings	AW2- Jan	Follow OCR Scheme- NEA- aluminium hammer Engineers lathe Following technical drawings		Follow OCR Scheme- theory and revision towards R014		Follow OCR Scheme- TDH to update	AW3- Exam (Subject knowledge)
KS4 11 DT	NEA Initial designs Development of Design Modelling CAD Developments Orthographic, working & isometric drawings Planning for production Product manufacture specification	AW1- Nov Section A & B of NEA	NEA Planning for production Product manufacture specification CAD-CAM Marking out Cutting Assembly of parts Product Manufacturing	NEA Product Manufacturing Finishing Evaluating Review of folio and product Refinements and improvements	AW2- Jan Section C & D NEA	Revision Commercial production Quality management Materials Product Analysis Test questions - Exam Technique		Revision Materials Processes Environment Quality management Health and safety Test questions & Study skills Exam Technique	EXAM	Final PPE Walk 'n Talk Mocks Section A speed tests Sketching against the clock Development tips Quality of Written Content questions	AW3- Exam (Subject knowledge)
KS4 11 Engineering	Theory and revision for exam R014	AW1- Nov 2C Materials research	Theory and revision for exam R014	Theory and revision for exam R014	AW2- Jan 2C Processes research	Theory and revision for exam R014 Commercial production Quality management Materials Product Analysis Test questions Exam Technique		Theory and revision for exam R014 Materials Processes Environment Quality management Health and safety		Theory and revision for exam R014 Walk 'n Talk Mocks Section A speed tests Sketching against the clock Development tips Quality of Written Content questions	