

Theme/Concept		(KS2)	Year 7	Year 8	Year 9	KS4	Year 10	Year 11	(Post-16)
Product	Resistant Materials		<b>Pewter Keyring</b> Laser cut mould Pewter cast	<b>Box Lid</b> Laser cut design Cut plywood Finishing	<b>USB Lamp</b> Circuits Basic electronics Mechanisms	<b>Resistant Materials</b>	Pewter keyring CAD/CAM clock	<b>Independent NEA</b> Students select and make models and or a final product or prototype to a brief	<i>Carpentry and joinery, bricklaying, plastering, painter and decorator, electrician and plumber.</i>
	Graphics		<b>Board Game</b> A4 folded board Cardboard net box Graphic design Accompanying cards, spinners, dice, counters	<b>Clock</b> Range of resistant materials combined Graphic design	<b>Magazine cover</b> Graphic design Audience & purpose Use of software	<b>Graphics</b>	Point of sale display T-shirt design and make.		<i>Graphic design, business, advertising, games design, film and television and marketing.</i>
Design	Resistant Materials	<i>use research and develop design criteria to inform the design of products generate, develop, model and communicate ideas</i>	<b>Creativity</b> Generation of ideas Application to CAD/CAM	<b>Design with laser cutter</b> Further use of CAD/CAM for more complex design	<b>USB Lamp</b> Choice of CAD/CAM or hand tools Finishes Recycled materials User needs Biomimicry	<b>Resistant Materials</b>	<b>Design theory</b> Creative modelling using a variety of materials to prototype ideas Solution based design	<b>Independent NEA</b> Designing and developing ideas to a brief with a target client in mind Considering user needs and economic and social challenges Biomimicry	<i>Product design, fashion design, architecture, interior design</i>
	Graphics		<b>Computer Aided Design</b> Use of ICT/PPT to design digital products for a consumer	<b>Graphic design for clock face</b> Using 2-D design tools software	<b>Magazine cover</b> Using industry software i.e. photoshop User needs	<b>Graphics</b>			
Make	Resistant Materials	<i>select from and use a wider range of tools and equipment to perform practical tasks accurately select from and use a wider range of materials and components</i>	Mitre joint Vacuum forming Cutting & shaping wood Using a tenon and coping saw Assembly of products Laser cut mould	Cutting/shaping wood Use of abrasives and files Finger joint Assembly of a product Use of adhesives Attaching fittings Use of wood finishes - wax	Drilling Counter sinking Nuts and bolts Cutting & shaping Use of abrasives and files Use of wood finishes - wood stain	<b>Resistant Materials</b>	Fundamental skills through small projects Wood, metal and polymers	<b>Independent NEA</b> Working with a range of materials and components Producing prototypes use of specialist tools and equipment	<i>Construction studies - Carpentry and joinery, bricklaying, plastering, painter and decorator, electrician and plumber.</i>
	Graphics		Use of PPT for design 3-D packaging/product in paper & board Box nets Box & playing surface	Presenting designs Developing in CAD 2D design tools Graphics software CAD/CAM laser cut clock with paint finish	Photoshop Manipulating graphics and text Producing industry standard product	<b>Graphics</b>	Fundamental skills through small projects Using digital media - photoshop, illustrator		Using handtools and CAD/CAM Shaping, fabrication, construction and assembly
Analyse & evaluate	Resistant Materials	<i>investigate and analyse existing products evaluate their ideas and products understand how key events and individuals have helped shape the world</i>	Basic evaluation of final product Evaluation of material properties	Evaluation of the final product against the specification	Evaluation of existing lamps ACCESS FM  Investigation of new and emerging technologies	<b>Resistant Materials</b>	Analysing against a brief and specification Evaluating to customer needs	Independent NEA Iterative design process Evaluation of existing products and final evaluation of self-made product.	<i>Product innovator, product developer, market researcher,</i>
	Graphics		Evaluation of existing products Aesthetics Cost Consumer Environment Size Safety Functions <b>Materials</b>	Evaluation of the final product against the specification	Evaluation of existing magazine layouts ACCESS FM  Evaluation of final product by target market	<b>Graphics</b>			
Technical Knowledge	Resistant Materials	<i>apply their understanding of how to strengthen, stiffen and reinforce understand and use mechanical systems understand and use electrical systems</i>	Adhesives - PVA Wood joints - mitre Thermo-forming polymers CAD/CAM Pewter casting Alloys	Properties of woods Finger joint Application of wax Fitting hinges	Drilling & countersinking Using a template Soldering Nuts and bolts	<b>Resistant Materials</b>	Core technical principles e.g. environment, finishes	Core technical principles Specialist technical principals Design and making principles	<i>Materials science, Environmental science, production, Design, Engineering, CAD engineer</i>
	Graphics		ICT skills inc. PPT Logging on Saving files Creating and organising work folders	Building CAD skills in 2D design tools Understanding of file types Vector graphics CAM	Developed knowledge of photoshop Use of CAD Understanding use of colour and type Graphic design choices	<b>Graphics</b>	ICT skills in digital editing. Understanding print and suitability of materials.		<i>Business, marketing, radio, film, lighting</i>
						<b>Creative iMedia</b>	Creative iMedia in the digital age. The media industry. Health and safety Regulation and classification. Legal issues		<i>Materials science, Environmental science,</i>

	Graphics	<i>apply their understanding of computing</i>		Professional finishes Target audience	Engineering Design	Mechanical systems: R040 Fusion software 2D design software 3D printers Laser cutters Reading engineering drawings	Producing engineering drawings Microcontrollers Circuits Manual production of freehand sketches	<i>production, Design, Engineering, Software production</i>
--	----------	---	--	--	-----------------------	---	--	---