Y13 Product Design Revision Checklist

Paper 1 - Technical Principles

		Familiar	Revised	Tested Knowledge
Materials and their applications	Material properties definitions			
	Classification of materials			
	Methods for investigating and testing materials			
Performance characteristics of materials	Papers and boards			
	Polymer based sheet and film			
	Woods			
	Metals			
	Polymers			
	Elastomers			
	Biodegradable polymers			
	Composites			
	Smart materials			
	Modern materials			
Enhancement of materials	Polymer enhancement			
	Wood enhancement			
	Metal enhancement			
Forming, redistribution and addition processes	Paper and board			
	Polymer			
	Metal			
	Wood			
	The use of adhesives and fixings			
	Jigs and fixtures			
The use of finishes	Paper and board finishing			
	Paper and board printing processes			
	Polymer finishing			

	Metal finishing			
	Wood finishing			
Modern and industrial commercial practice	Scales of production			
	Efficient use of materials			
	The use of computer systems			
	Sub-assembly			
Digital design and manufacture	Computer aided design (CAD)			
	Copmuter aided manufacture			
	Virtual modelling			
	Rapid prototyping processes			
	Electronic data interchange			
	Production, planning and control (PPC) networking			
The requirements for product design and development	Product development and improvement			
	Inclusive design			
Health & safety	Safe working practices			
	Safety in products and services to the customer			
Protecting designs and intellectual property	Protecting designs and intellectual property			
Design for manufacturing, maintenance, repair and disposal	Manufacturing, maintenance, repair and disposal			
	Ease of manufacture			
	Disassembly			
Feasibilty studies	Feasibilty studies			
Enterprise and marketing in the development of products	Enterprise and marketing in the development of products			
Design communication	Design communication			

Paper 2 - Designing and Making Principles

		Familiar	**Revised**	**Tested Knowledge**
Design methods and processes	Design influences			
Design theory	Design styles and movements			

	Designers and their work			
Technology and cultural changes	Socio economic influences			
	Major developments in technology			
	Social, moral and ethical issues			
	Product life cycle			
Design processes	The use of a design process			
	Prototype development			
	The iterative design process in industrial or commercial contexts			
Critical analysis and evaluation	Testing and evaluating prototypes and commercial products			
	Use of third party feedback in the testing and evaluation process			
Selecting appropriate tools, equipment and processes	Selecting appropriate tools, equipment and processes			
Accuracy in design and manufacture	Accuracy in design and manufacture			
Responsible design	Environmental issues			
	Conservation of energy and resources			
Design for manufacture and project management	Planning for accuracy and efficiency			
	Quality assurance			
	Quality control			
National and international standards in product design	National and international standards in product design			

Maths skills - both papers		**Familiar**	**Revised**	**Tested Knowledge**
Mathematical skills	Number and percentages			
	Ratios			
	Calculating surface area and volume			
	Combining forms			

	Area and volume scale factors			
	Trigonometry			
	Construction, use and analysis of charts and graphs			
	Co-ordinates and geometry			
	Statistics and probability			