Unit = Year 13 Theory	Road Map				
In this unit you will	Assessment Grades				
complete your final NEA worth 50% of you're A Level					
grade.					
Themes	Learning Goals/Outcomes/Content				
What are the	L1 The requirements for product design and developm	nent			
requirements for product design and development?	Through the study and critical analysis of				
	existing products, students should develop an				
	understanding of the requirements of the				
	following:				
	the design, development and manufacture				
	of products to meet specification criteria				
	fitness for purpose				
	accuracy of production				
	how the critical assessment of products				
	can lead to the development of new				
	designs.				
	Students should develop the skills to critically				
	assess products and develop new design				
	proposals.				
Have day you as not day	12 Due dont development and improvement				
How do you consider aesthetics, ergonomics	L2 Product development and improvement				
and anthropometrics?	Students should development their ability to				
	work with a variety of materials, including two and				
	three-dimensional forms, to produce				
	creative and original products which satisfy the				
	demands of the target market, and consider				
	accurate and efficient manufacture.				
	When designing products Students should				
	consider aesthetics, ergonomics and				
What is inclusive design?	anthropometrics. L3 Inclusive design				
The second secon	Students should be aware of, and be able to				
	explain, the development of products that are				
	oxplain, the development of products that are				

used by a wide range of users including the disabled, children and the elderly. 4 Safe working practices? Students should be aware of, and able to explain, health and safety procedures related to products and manufacturing, including: *knowledge of the Health and Safety at Work Act (1974), and how it influences the safe manufacture of products *control of Substances Hazardous to Health (COSHH) and safety precautions that should be taken with relevant materials *safe working practices and identifying potential hazards for the school or college workshop and industrial contexts *safety precautions that should be taken with specific manufacturing processes *the concept of risk assessment and its application to given manufacturing processes *Students should be aware of, and able to explain, how designers and manufacturers ensure products are safe for consumers to use, including: *legislation used to protect consumers and its impact on product design, eg Consumer Rights Act (2015), Sales of Goods Act (1979) *the British Standards Institute (BSI), and how specific products might be tested to meet safety standards *measures to ensure the safety of toys, eg Lion Mark		inclusive in their design so that they can be		
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		meet safety standards		
Lion Mark		measures to ensure the safety of toys, eg		
		Lion Mark		

	advice to consumers:		
	manufacturer's instructions		
	• safety warnings		
	aftercare advice.		
How do you protect	L6 Protecting designs and intellectual property		
designs and intellectual	Students should be aware of, and able to		
property?	explain, the importance of the following to the		
	designer:		
	copyright and design rights		
	• patents		
	registered designs		
	trademarks		
	• logos.		
What is open design?	L7 Open Design		
	Students should be aware of, and able to		
	explain, the concept of 'open design'.		
	Specifically referring to the development of		
	products for the common good of society,		
	including potential use. Students should be able		
	to give examples of this in practice, eg		
	humanitarian projects and file sharing for 3D		
	printing.		
How do you plan for	L1 Manufacture, repair, maintenance and disposal		
repair and maintenance?			
	Students should be aware of, and able to		
	explain, the need to modify designs to make		
	them more efficient to manufacture, including:		
	reducing the number of manufacturing		
	processes		
	how the choice of materials affects the		
	use, care and disposal of products:		
	labelling of materials to aid separation		
	for recycling		
	making products easy to disassemble		
	or separate		
	application of the six Rs of sustainability:		

toxic materials, of damaging materials and associated energy use • reuse components and parts • rethink by using eco friendly alternative materials • recycle materials and/or components into new products • maintenance: • temporary and integral fixings • use of standardised parts • allowing for service and repair/ replacement of parts • ability to upgrade with software downloads. How do you plan for efficient manufacture? Students should be aware of, and able to explain, the different ways in which a product can be designed to allow for more efficient manufacture, including: • ribs and webbing to reduce material thicknesses • snap fittings to remove the need for fixings/adhesives • internal moulded screw posts for use with self tapping screws • use of pre made components • use of standardised patterns and sizes • addition of texture in moulding to reduce number of manufacturing processes • addition of texture in moulding to reduce number of manufacturing processes • addition of texture in moulding to reduce number of manufacturing processes • all Disassembly Students should be aware of, and able to explain, how a product can be designed and		reduce the quantity of materials, of		
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use of pre made components use of standardised patterns and sizes addition of texture in moulding to reduce number of manufacturing processes self finishing. How do you plan for product disassembly? Students should be aware of, and able to		• internal moulded screw posts for use with		
use of standardised patterns and sizes addition of texture in moulding to reduce number of manufacturing processes self finishing. How do you plan for product disassembly? Students should be aware of, and able to		self tapping screws		
addition of texture in moulding to reduce number of manufacturing processes self finishing. How do you plan for product disassembly? Students should be aware of, and able to		use of pre made components		
number of manufacturing processes • self finishing. How do you plan for product disassembly? Students should be aware of, and able to		use of standardised patterns and sizes		
• self finishing. How do you plan for product disassembly? Students should be aware of, and able to		addition of texture in moulding to reduce		
How do you plan for product disassembly? Students should be aware of, and able to		number of manufacturing processes		
product disassembly? Students should be aware of, and able to		-		
Students should be aware of, and able to		L3 Disassembly		
explain, how a product can be designed and	product disassembly:	Students should be aware of, and able to		
		explain, how a product can be designed and		

	manufactured with disassembly in mind,		
	including integral fixings and active disassembly		
	using smart materials such as SMA and		
	biodegradable parts.		
What role does a	L4 Feasibility studies		
feasibility study play?	Students should be aware of, and able to		
	explain, the use of feasibility studies to assess		
	the practicality for production of proposed		
	designs, including the testing of prototypes with		
	potential consumers.		
What role does	L5 Enterprise and marketing in the development of products		
enterprise and marketing play?	Students should be aware of, and able to		
	explain, the importance of marketing and brand		
	identity, including:		
	customer identification		
	• labelling		
	packaging		
	corporate identification		
	concept of global marketing:		
	the promotion and advertisement of		
	products including the use of new		
	technologies, eg social media, viral		
	marketing		
	product costing and profit		
	awareness of the role of entrepreneurs.		
	Students should be aware of, and able to		
	explain, the collaborative working of designers		
	in the development of new and innovative		
	products, including virtual and face-to-face		
	collaborative working systems.		
How do you	L6 Design communication		
communicate designs?	Students should be aware of, and able to		
	explain and demonstrate the skills, in a range of		
	communication and presentation techniques for		
	conveying proposals and intentions to clients,		

potential users and manufacturers, including:	
• report writing	
• the use of graphs	
• tables and charts	
• 2D/3D sketching	
the use of mixed media and rendering to	
enhance drawings	
dimensioning and details for manufacture.	