

Design Technology Year 9 Long Term Plan

Year 9 Product Design

Key: **Recap/Retrieval**

Rigour (Vocabulary/Disciplinary knowledge/Reading/Careers)

Cultural Capital/SMSC

Numeracy

Cross Curricular

Rationale (with end points):				
Term	Topic	Knowledge	Skills Complex activity: Writing genre:	Reading /wider reading
Autumn T1 Project 1 <i>*Summative Assessment dates TBC</i>	Summer Project Review (Interleaving)	<ul style="list-style-type: none"> Introduction to Robotics and CAD/CAM 		Makers: The New Industrial Revolution by Chris Anderson
	Automation	<ul style="list-style-type: none"> Understand the development and impact of automation Understanding CAD/CAM/CNC applications in the real world 	Complex activity: Apply Kaizen/Lean Engineering to a problem (Real world solutions)	

	Lean/Sustainable Technology	<ul style="list-style-type: none"> Understanding the impact of Lean Manufacturing/ FMS/JIT. Understand how to create products sustainably Weekly recap (Formative Test) 		
	Contextual Challenge	<ul style="list-style-type: none"> Identify key contextual areas Identify problems and potential design solutions Analyse clients' needs and wants. 		
	Research	<ul style="list-style-type: none"> Analyse primary, secondary and work of others to inform design strategies. 	Writing genre: 'My key designer' (Literacy focus)	
	Design Specification	<ul style="list-style-type: none"> Developing a client focussed specification using relevant research. 		

	Initial ideas	<ul style="list-style-type: none"> Apply research and specification to produce a range of creative design ideas 		
	Initial/Developing ideas.	<ul style="list-style-type: none"> Understand how to effectively annotate ideas 	Effective use of keywords (vocabulary)	
Autumn T2	Developing Ideas	<ul style="list-style-type: none"> Develop a final design idea Weekly recap (Design skills) 		
	<i>Summative Assessment (DD 1)</i>		Complex activity: Producing a high quality 3D model (Disciplinary Knowledge)	
	Modern Materials	<ul style="list-style-type: none"> Recognise a range of modern materials Describe how modern materials improved functionality 		
	Smart materials	<ul style="list-style-type: none"> Define a smart material Recognise a range of smart Materials Understand how 	Gatsby Benchmark No.4: External Trip to Thomas Dudley Ltdl (Careers)	

		<p>the functional properties of a range of smart materials can be changed by external stimuli</p> <ul style="list-style-type: none"> • Weekly recap (Formative Assessment) 		
	CAD (3D Modelling)	<ul style="list-style-type: none"> • Develop independent decision-making and problem solving through iterative design. • Develop a quality product using on-going evaluation • Weekly recap (CAD) 		
	CAD (3D Modelling)			
	CAD (3D Modelling)			
Spring T1	Practical Making (Modelling)	<ul style="list-style-type: none"> • Accurate recording of manufacturing stages • Ongoing evaluation and iterative improvements 	Writing genre: 'Writing a Manufacturing Specification (Literacy focus/SMSC)	
	Practical Making (Modelling)			
	Practical Making (Modelling)	<ul style="list-style-type: none"> • Testing of alternative 		
	Practical Making (Modelling)			

	Practical Making (Modelling)	appropriate materials, tools and techniques		
Spring T2	Practical Making (Modelling)	<ul style="list-style-type: none"> • Ongoing research and evaluation to fulfilling client needs 		
	<i>Summative Assessment (DD 2)</i>			
	Practical Making (Modelling)	<ul style="list-style-type: none"> • Recognise how to quality assure a product 		
	CAD (3D Modelling)	<ul style="list-style-type: none"> • Develop independent decision-making and problem solving through iterative design. • Develop a quality product using on-going evaluation 		
	CAD (3D Modelling)			
CAD (3D Modelling)				
Summer T1	CAD (2D Modelling)	<ul style="list-style-type: none"> • Develop independent decision-making and problem solving through iterative design. 		
	CAD (2D Modelling)			
	CAD (2D Modelling)			
	CAD (2D Modelling)			
	CAD (2D Modelling)			

		<ul style="list-style-type: none"> Develop a quality product using on-going evaluation 		
Summer T2	Logo Design	<ul style="list-style-type: none"> Understand client needs and links to products Design with use in mind 		
	Logo Design			
	Logo Design			
	Product Assembly	<ul style="list-style-type: none"> Develop a quality product using on-going evaluation 		
	Product Assembly			
	Testing and Evaluation	<ul style="list-style-type: none"> Analyse, Test and Evaluate final outcome considering specification and client needs and wants 	Complex activity: Critical Product Analysis (Literacy/SMSC)	
	Improvements	<ul style="list-style-type: none"> Identify potential product improvements. Suggest how to make the product commercially viable 		
	Final Presentation	<ul style="list-style-type: none"> Develop communication 	Complex activity: Presentation of Final Prototype Ideas	



		skills in presenting a final product	(Literacy/Oracy Focus)	
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