

# Design Technology Year 8 Long Term Plan

## Year 8 Product Design

- Key:
- Recap/Retrieval
  - Rigour (Vocabulary/Disciplinary knowledge/Reading/Careers)
  - Cultural Capital/SMSC
  - Numeracy
  - Cross Curricular

**Rationale (with end points):** By the end of year 8 students will be able to use primary and secondary research from a wide range of sources, including existing products and the work of others to inform the design criteria. **Apply** research to design innovative, functional appealing product that are *fit for purpose*. **Understand** a client’s needs and **Produce** a client interview/questionnaire to review the requirements of a product. **Creates** and **responds** to a detailed specification that links to the majority of the research conducted. **Communicate creativity** with ideas that using research effectively consider **client** and viewpoints of others. **Demonstrate** creativity through a **range** of design techniques. **Develop designs** and show **Progression** in drawing 2d ideas, modelling, experimentation in 2D/3d modelling with appropriate CAD drawings. **Select** material and components with reference to their properties

Term	Topic	Knowledge	Skills Complex activity: Writing genre:	Reading /wider reading
Autumn T1 Project 1	Summer Project Review Interleaving	<ul style="list-style-type: none"> <li>● Introduction to machines and</li> </ul>		Emotional Design: Donald A. Norman

*Summative Assessment dates TBC		mechanical devices/motion		
	Movement and Motion	<ul style="list-style-type: none"> <li>• Understand the 4 types of motion</li> <li>• Understand the 3 types of levers</li> <li>• Equilibrium/Lever Calculations</li> </ul>	<b>Complex activity: Bending moments</b> ( Mathematics/Science Cross-curricular)	
	Rotary Systems and CAMS	<ul style="list-style-type: none"> <li>• Understanding how a rotary system works</li> <li>• Identifying different types of CAM and there applications</li> <li>• <b>Weekly recap / Formative Test</b></li> </ul>		
	Research and Product Analysis	<ul style="list-style-type: none"> <li>• Understand and explain clients' needs and wants.</li> <li>• Understand Form, Fit and Function</li> </ul>		
	Writing a Specification	<ul style="list-style-type: none"> <li>• Developing a client focussed specification using FORM, FIT and FUNCTION</li> </ul>	<b>Writing genre:' The evolution of children's toys'</b> ( Literacy focus)	

	Design Ideas 1	<ul style="list-style-type: none"> <li>Apply research and specification to produce a range of creative design ideas</li> </ul>		
	Design Ideas 2	<ul style="list-style-type: none"> <li>Develop design ideas with annotation and discussion.</li> </ul>		
	Computer Aided Design	<ul style="list-style-type: none"> <li><b>Weekly recap (Formative Test)</b></li> <li>Introduction to CAD software</li> </ul>		
<b>Autumn T2</b>	Computer Aided Design	<ul style="list-style-type: none"> <li>Development of CAD skills</li> </ul>		
	<i>Summative Assessment (DD 1)</i>			
	Practical Making	<ul style="list-style-type: none"> <li>Develop independent decision-making and problem solving through iterative design.</li> <li>Develop a quality product using on-going evaluation</li> <li>Produce a well ordered evidence of</li> </ul>	<b>Complex activity: Producing a high quality wood joint (Disciplinary Knowledge)</b>	
	Practical Making			
	Practical Making			
Practical Making				

		<p>making through a diary or photos.</p> <ul style="list-style-type: none"> <li>• <b>Weekly recap / Formative Test</b></li> </ul>		
	Evaluation	<ul style="list-style-type: none"> <li>• Evaluate the outcome against the design specification showing clear strengths and areas to develop.</li> </ul>	<p><b>Writing genre: 'The Impact of the Industrial Revolution' (Literacy focus/SMSC)</b></p>	
<b>Spring T1 Project 2</b>	Systems and Control	<ul style="list-style-type: none"> <li>• Understand about different types of system( open loop. Closed loop and feedback/decisions)</li> <li>• Understand simple circuits design</li> <li>• Describe inputs and output devices and there applications</li> </ul>		
	Electronic Devices	<ul style="list-style-type: none"> <li>• Describe the difference between analogue and digital signals</li> <li>• Understanding the applications of</li> </ul>	<p><b>Complex activity: Circuit Design (Switching)</b> <b>(Science Cross-curricular)</b></p>	

		<p>microchips and integrated circuits</p> <ul style="list-style-type: none"> <li>• <b>Weekly recap (Formative Test)</b></li> </ul>		
	Research and Product Analysis	<ul style="list-style-type: none"> <li>• Understand and explain clients' needs and wants.</li> <li>• Understand Form, Fit and Function</li> </ul>		
	Writing a Specification	<ul style="list-style-type: none"> <li>• Produce a client focussed specification.</li> </ul>		
	Design Ideas 1	<ul style="list-style-type: none"> <li>• Apply research and specification to produce a range of creative design ideas</li> </ul>		
<b>Spring T2</b>	Design Ideas 2	<ul style="list-style-type: none"> <li>• Develop design ideas with annotation and discussion.</li> </ul>	<b>Written activity: Presentation of Design Ideas</b> <b>(Literacy/Oracy Focus)</b>	
	<i>Summative Assessment (DD 2)</i>			
	Computer Aided Design	<ul style="list-style-type: none"> <li>• Development of CAD skills</li> </ul>		
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	Practical Making	<ul style="list-style-type: none"> <li>• Develop independent decision-making and problem solving through iterative design.</li> <li>• Develop a quality product using on-going evaluation</li> <li>• Produce a well ordered evidence of making through a diary or photos.</li> <li>• <b>Weekly recap (Formative Test)</b></li> </ul>	<b>Complex activity: Soldering Technique</b> <b>(Disciplinary knowledge)</b>	
	Practical Making			
<b>Summer T1</b>	Practical Making	<ul style="list-style-type: none"> <li>• Develop independent decision-making and problem solving through iterative design.</li> <li>• Develop a quality product using on-going evaluation</li> <li>• Produce a well ordered evidence of making through a diary or photos.</li> </ul>		
	Practical Making			
	Practical Making		<b>Writing genre: 'Working Safely' (Literacy)</b>	

	<i>Summative Assessment ( DD 3)</i>			
<b>Summer T2</b>	Practical Making	<ul style="list-style-type: none"> <li>Develop independent decision-making and problem solving through iterative design.</li> <li>Develop a quality product using on-going evaluation</li> <li>Produce a well ordered evidence of making through a diary or photos.</li> <li><b>Weekly recap ( Formative Test)</b></li> </ul>		
	Practical Making			
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	Evaluation	<ul style="list-style-type: none"> <li>Evaluate the outcome against the design specification showing clear strengths and areas to develop.</li> </ul>		
Technical Skills Development	<ul style="list-style-type: none"> <li>Preparation for Year 9</li> </ul>			
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	Technical Skills Development	<ul style="list-style-type: none"><li>Preparation for Year 9</li></ul>	<b>SUMMER PROJECT - Writing genre:</b> <b>The development of Robotics and CAD/CAM)</b> Interleaving	
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