



YEAR 10 DESIGN AND TECHNOLOGY PLANNER (2019/20)

<u>Autumn I</u>	<u>Spring I</u>	<u>Summer I</u>
<p style="text-align: center;"><u>Section A Core Principles</u></p> <ul style="list-style-type: none"> • How are robotics, automation used for production in industry? • What are automated production techniques and systems? • What is enterprise? • How does market pull and technology push affect product development? • How do people, society and culture influence design? • What do we need to consider regarding sustainability and the environment? • What are the new and emerging technologies? What is planned obsolescence? • How do we design for maintenance? • How do ethics impact designs and designers? • What are renewable and non-renewable resources? Where do we find them? • What is nuclear energy? • How is energy stored? • What are kinetic pumped storage systems? • What are the pros and cons of alkaline and rechargeable batteries? • What are the different types of motion?_ • What are modern materials? • What are Smart materials <p style="text-align: center;">Assessment: Trunki Redesign</p>	<p style="text-align: center;"><u>Section B Specialist Technical Principles Continued</u> <u>Non-Exam Assessment Style Project 1</u></p> <ul style="list-style-type: none"> • What specialist techniques and processes do I need to understand? • How are tolerances used? What are tolerances? • What are surface treatments and finishes? • How can I understand the forces and stresses on a product? <p style="text-align: center;"><u>Section C Designing and making Principles</u> <u>Non-Exam Assessment (NEA) Style Project 2</u></p> <ul style="list-style-type: none"> • Can I describe and critique the work of others influential designers? • What design strategies are used in industry? • How can I communicate my design ideas? • What are the environmental, social and economic challenges designers face? • How can I use an investigation and primary and secondary data? <p style="text-align: center;">Assessment: Part 2 Non-Exam Assessment Style Project 1 Part 1 Non-Exam Assessment Style Project 2</p>	<p style="text-align: center;"><u>Revisiting Section B Specialist Technical Principles</u></p> <ul style="list-style-type: none"> • How can materials be altered to change their properties? • What scale of production is most suitable? • Can I describe different commercial processes? <p style="text-align: center;">REVISIT and REVISE A SELECTION OF TOPICS FROM TERM 1 AND TERM 2</p>

<u>Autumn II</u>	<u>Spring II</u>	<u>Summer II</u>
<p style="text-align: center;"><u>Section A Core Principles continued</u></p> <ul style="list-style-type: none"> • What are composite materials? • What are technical textiles? • How do a material's properties affect our material choices? <p style="text-align: center;"><u>Section B Specialist Technical Principles</u> <u>Non-Exam Assessment Style Project 1</u></p> <ul style="list-style-type: none"> • How do we select materials and components? • How do we use and work with materials? • How can I communicate my design ideas? • What are ecological and social footprints? • What different design strategies are used within the design industry? • Where are materials sourced? What are their origins? • What stock forms and sizes are materials available in? • What are the different scales of production? • How do I conduct an investigation and gather primary and secondary data? • What specialist techniques and processes do I need to understand? • What is material management? <p style="text-align: center;">Assessment: Part 1 Non-Exam Assessment Style Project 1</p>	<p style="text-align: center;"><u>Section C Designing and making Principles continued</u> <u>Non-Exam Assessment (NEA) Style Project 2 continued</u></p> <ul style="list-style-type: none"> • What design strategies are used in industry? • How can I communicate my design ideas? • How can I develop a product through Prototyping? • How do we select materials and components? • Why is it important to work accurately? • How do I cut, shape and form materials to a tolerance? • How can I plan my cutting to minimize material waste? • How do I measure and mark-out to create an accurate and quality prototype? • How do we select the correct hand tools and machinery? • How do I use tools safely? • How do I Shape, fabricate and construct my product? • How do I prepare a material for a surface finish? • How do I carefully apply a surface finish? <p style="text-align: center;">Assessment: Part 2 Non-Exam Assessment Style Project 2</p>	<p style="text-align: center;"><u>FINAL Non-Exam Assessment (NEA)</u> 1st June: Students are given the exam themes for their final NEA Assessment</p> <p style="text-align: center;"><u>Section A: Identifying & investigating design possibilities</u></p> <ul style="list-style-type: none"> • Independent research into a designer or company. A range of sources to strengthen research skills and deepen understanding of chosen focus. • Product analysis of a range of key products for that designer. • Market research and investigation <p style="text-align: center;"><u>Section B: Producing a design brief & specification</u></p> <ul style="list-style-type: none"> • Students identify a user/client and discuss briefly their needs and wants. • Produce a design brief based upon market research and designer/company findings. • Produce a specification based on research. <p style="text-align: center;">Assessment: NEA Pages 1-5:</p> <ol style="list-style-type: none"> 1. Contextual challenge Analysis page 2. Secondary research 3. Product Analysis 4. Client Profile <p style="text-align: center;">Design Brief and Specification.</p>