


Year: 10 Subject: DT	Curriculum Intent: Students will build upon the skills and activities learnt in years 7, 8 & 9 and be introduced to new skills. This will be achieved through a design and make project based upon designing an item to be sold in a gift shop. Throughout this unit of work, students will develop their practical skills through both theoretical and physical tasks and be introduced to the technical language and vocabulary related to this topic. Students will explain and discuss their understanding of what they have read, observed, and practiced justifying the methods and techniques used. This will be evidenced through practical tasks and evaluation of the activities.					
	Term 1 <i>Autumn Term</i>		Term 2 <i>Spring Term</i>		Term 3 <i>Summer Term</i>	
	Practical	Theory	Practical	Theory	Practical	Theory
Topic Titles (in order of delivery)	<ol style="list-style-type: none"> 1. Communication of ideas 2. Using 2D design for manufacture 3. CAM skills – laser cutter 4. Shaping polymers (e.g. strip heater and vacuum former) 5. Quality control 	<ol style="list-style-type: none"> 1. Polymers and woods sources and origins 2. Polymers and woods - using and working with 3. Polymers and woods – stock forms and altering properties 4. Polymers and woods – manufacturing 5. Polymers and woods – surface treatments and finishes 	<ol style="list-style-type: none"> 1. Research leading into a design specification 2. Drawing skills and design development 3. Planning manufacture and costing 4. Quality control 5. Modelling skills 6. Batch production 	<ol style="list-style-type: none"> 1. Metals – sources and origins 2. Metals – using and working with 3. Metals – stock forms and altering properties 4. Metals – manufacturing 5. Metals – surface treatments and finishes 6. Ecological footprint 7. Social footprint 8. Energy generation and storage 	<ol style="list-style-type: none"> 1. Set up for NEA 2. Identifying and investigating design possibilities 3. Producing a Design Brief and Specification 4. Generating Design Ideas 	<ol style="list-style-type: none"> 1. Modern materials 2. Smart materials 3. Textiles/technical textiles 4. Exam technique and preparation for PPEs
Key knowledge / Retrieval topics	<ol style="list-style-type: none"> 1. Orthographic Drawing – 3rd Angle Projection 2. Isometric drawings 3. Scale drawings 4. 2D design 		<ol style="list-style-type: none"> 1. CAD skills Fusion/2D Design 2. Health & Safety for workshop practical 3. Tools & Equipment 		<ol style="list-style-type: none"> 1. Exam Techniques and questioning 2. Layout of NEA Project 	
Understanding / Sequence of delivery	<ol style="list-style-type: none"> 1. Developing drawing techniques – isometric and orthographic 	<ol style="list-style-type: none"> 1. Polymers and woods – extracting/felling and turning into a workable material 	<ol style="list-style-type: none"> 1. MK Uni project – practice mini NEA 2. Research into the Uni, existing products and 	<ol style="list-style-type: none"> 1. Metals – extraction and refining 2. Metals – ferrous and non-ferrous 	<ol style="list-style-type: none"> 1. Set up for NEA 2. NEA Section A – research of existing 	<ol style="list-style-type: none"> 1. PPEs – preparing for longer written questions. Looking at key

	<ul style="list-style-type: none"> 2. 2D design development of skills 3. Laser cutter – set up and use. Ensuring repeatability and accuracy of products. 4. Understanding how polymers can be shaped using heat e.g. strip heater 5. Quality control of products and making improvements on products 	<ul style="list-style-type: none"> 2. Polymers and woods – material categories and structure 3. Polymers and woods – stock forms and altering properties 4. Polymers and woods – manufacturing in school and in industry 5. Polymers and woods – surface treatments and finishes 	<ul style="list-style-type: none"> writing a design specification 3. Development of creative ideas. Isometric drawing. 4. Plan of manufacture – processes, materials and tooling 5. Orthographic drawing to manufacture from 6. Modelling/prototyping of an idea 7. Making a duplicate product – looking at how batch production works and ensuring consistency 	<ul style="list-style-type: none"> 3. Metals – stock forms and altering properties 4. Metals – manufacturing in school and in industry 5. Metals – surface treatments and finishes 6. Ecological footprint – 6 R’s, planned obsolescence 7. Social footprint – safe working conditions, carbon footprint and company policies 8. Energy generation and storage – renewable and non-renewable sources. Batteries, pneumatics and kinetic energy 	<ul style="list-style-type: none"> products and target market 3. NEA Section B – design specification using research 4. NEA start of Design Ideas – range of creative initial ideas using isometric drawing style 	<ul style="list-style-type: none"> terminology and command words. Recap of knowledge. 2. Smart and modern materials – what they are, examples, how they can be used in industry 3. Textiles/technical textiles – natural and synthetic fibres, conductive fabrics and micro-encapsulation
Assessment	In class Assessments using NEA mark scheme	In class assessments End of term test Seneca	In class assessment	In class assessment End of term test Seneca	Marked using NEA grade boundaries	In class assessment GCSE Pod