

## A level Design and Technology - Graphics

Year 12						
When	WHAT & WHY WILL THEY LEARN? (SOW overview linked to assessment Objectives) What do Yr12/13 need to know and be able to do by the time they leave TENC? How do you sequence the teaching? How do you revisit, revise and reinforce?		New Skill = NS Revisit = R Revision = RV	Stretch and Challenge (Differentiation – how will you stretch the most able to achieve top grades?)	CIEAG/Extension	KS4 PRIOR LEARNING
Term Plan	KNOWLEDGE & SKILLS	Assessment Objective (s)		Band 5 = Informed Band 6 = Mature	Enrichment Trips, workshops, speakers, local environment and experiences	
	<b>Transition Task</b> <b>Design Brief</b> <b>The Client:</b> Cocoloco Respond to a design brief for a company called Cocoloco a small start-up artisan chocolate company. Develop a brand identity for the company and product packaging style for their first packaging range, to coincide with the launch of their delicious 'bean to bar' product range.	AO2	<b>RV</b> Designing and making skills	This exercise will demonstrate the creativity and independence of the group. Most able will demonstrate a depth of understanding for proportion, scale, colour and lettering form in design composition.		Checking prior knowledge of the design process, and design ability in response to a specific client requirement.
Term 1	<b>Component 1: Knowledge and understanding</b> Materials, Performance characteristics of materials. Students need to apply a knowledge and understanding of working properties, characteristics, applications, advantages and disadvantages of the following types of materials in order to discriminate between them and select appropriately. <b>Component 2: Extended project skills</b> Students need to develop the following techniques <ul style="list-style-type: none"> <li>- Drawing technique</li> <li>- CAD</li> <li>- Modelling techniques</li> </ul>	C1- 1-2  AO4	<b>RV</b> C1 Topic 1-2 <b>NS/R</b> CAD and modelling skills	<b>C1:</b> To achieve the top grades students will need to demonstrate clear subject knowledge understanding and be able to respond to specific topic questioning and apply thinking. <b>C2:</b> To achieve the top grades students will need to demonstrate accuracy and precision within their response to the chosen themes.		This term will bring together prior skills from GCSE and develop them further.  Prior CAD skills may have been taught.

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<b>Term 2</b>	<p><b>Component 1: Knowledge and understanding</b> Processes and techniques. Students need to understand processes, applications, characteristics, advantages and disadvantages in order to discriminate between them and select appropriately including the selection of specific tools to be used for domestic and commercial and industrial products and systems.</p> <p><b>Component 2: Extended project skills</b> Students need to develop their manufacturing skill sets.</p> <ul style="list-style-type: none"> <li>- Lego man, workshop skills</li> </ul>	<p>C1- 1-3 A04</p>	<p><b>RV</b> C1 Topic 1-3 <b>NS/R</b> Workshop manufacturing from dimensioned drawings skill</p>	<p><b>C1:</b> To achieve the top grades students will need to demonstrate clear subject knowledge understanding and be able to respond to specific topic questioning and apply thinking. <b>C2:</b> To achieve the top grades students will need to demonstrate accuracy and precision within manufacturing when assessed against the working drawings. They will demonstrate high quality finish and quality control.</p>	<p>NEC Grand Designs exhibition Birmingham to establish and investigate NEA</p>	<p>Processes and techniques will be built upon from GCSE.</p> <p>Prior workshop manufacturing skills from GCSE will support skills development.</p>
<b>Term 3</b>	<p><b>Component 1: Knowledge and understanding</b> Digital technologies. Students need to understand safe and accurate operation, advantages and disadvantages of a range of digital technologies.</p> <p><b>Component 2: Extended project</b> Introduction to the NEA. Students need to work on their NEA by doing the following:</p> <ul style="list-style-type: none"> <li>- Identification of design possibility</li> <li>- Investigation of needs and research</li> <li>- Specification</li> </ul>	<p>C1 – 1-4 Mock exam A01</p>	<p><b>RV</b> C1 Topic 1-4 <b>NS</b> Investigation of design possibility</p>	<p><b>C1:</b> To achieve the top grades students will need to demonstrate clear subject knowledge understanding and be able to respond to specific topic questioning and apply thinking. <b>C2:</b> To achieve the top grades students will need to demonstrate clear identification of a workable problem. This will lead to comprehensive investigation of the needs to inform a direction. Research will be targeted specially and provide detailed and purposeful information. Specification will provide clear and</p>	<p>Demonstrate expectation through previous student sketchbooks and teacher exemplar.</p> <p>ENDC – Construction site development agency</p>	<p>Prior knowledge of GCSE exam NEA process will allow students to understand the process and expectations of work load, creativity and independence.</p> <ul style="list-style-type: none"> <li>- Research</li> <li>- Specification</li> </ul>

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				concise requirements that are fully justified.		
<b>Term 4</b>	<p><b>Component 1: Knowledge and understanding</b> Effects of technological developments. Students need to understand current and historical technological developments that have had an effect on the work of designers and technologist and their social, moral and ethical impacts. Factors influencing the development of products. Students need to understand The importance and influence of user centred design in ensuring products are fit for purpose and meet the criteria of specifications when designing, making and evaluating.</p> <p><b>Component 2: Extended project skills</b> Students need to work on their NEA by doing the following:</p> <ul style="list-style-type: none"> <li>- Design ideas</li> <li>- Development of design ideas</li> </ul>	<p>C1 – 1-6 A02</p>	<p><b>RV</b> C1 Topic 1-6 <b>NS/ R</b> Design sketching and annotating skills</p>	<p><b>C1:</b> To achieve the top grades students will need to demonstrate clear subject knowledge understanding and be able to respond to specific topic questioning and apply thinking. <b>C2:</b> To achieve the top grades students will need to demonstrate accurate and precise drawing skills that communicate designs in a range of techniques and show a mature response that has clear links to their research and specification.</p>	<p>Use Unifrog to showcase Design as a career, show videos of practicing Designers and university courses to increase engagement and understanding of future career paths.</p> <p>Link to UCAS applications and Apprenticeships</p>	<p>Prior knowledge of GCSE exam NEA process will allow students to understand the process and expectations of work load, creativity and independence.</p> <ul style="list-style-type: none"> <li>- Design ideas</li> <li>- Development</li> </ul>
<b>Term 5</b>	<p><b>Component 1: Knowledge and understanding</b> Potential hazards. Students need to adopt safe working practices, recognise and react to potential hazards. Understand HASWA 1974, risk assessments and COSHH being able to apply this. Features of manufacturing industries. Students need to understand characteristics and stages of production methods, quality control, quality assurance and TQM. Understand the characteristics, processes, applications, advantages disadvantages and the importance of considering accuracy of production and efficiency of modern manufacturing methods and systems when designing for manufacture for small, medium and large scale production.</p> <p><b>Component 2: Extended project</b> Students need to work on their NEA by doing the following:</p> <ul style="list-style-type: none"> <li>- Development of design ideas</li> </ul>	<p>C1 – 1-8 Mock exam A02 A03</p>	<p><b>RV</b> C1 Topic 1-8 <b>NS/R</b> Development and modelling</p>	<p><b>C1:</b> To achieve the top grades students will need to demonstrate clear subject knowledge understanding and be able to respond to specific topic questioning and apply thinking. <b>C2:</b> To achieve the top grades students will need to demonstrate accurate and precise drawing, CAD and 3 dimensional modelling skills that communicate designs in a range of techniques and show a mature response that has clear links to their research and specification.</p>		<p>Prior knowledge of GCSE exam NEA process will allow students to understand the process and expectations of work load, creativity and independence.</p> <ul style="list-style-type: none"> <li>- Development</li> <li>- Modelling</li> <li>- Final design</li> <li>- Reviewing</li> </ul>

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	- Modelling					
<b>Term 6</b>	<b>Component 1: Knowledge and understanding</b> Designing for maintenance and the cleaner environment. Students need to understand the characteristics, applications, advantages and disadvantages of cleaner design and technology – a products life cycle in relation to sustainable issues. <b>Component 2: Extended project</b> Students need to work on their NEA by doing the following: <ul style="list-style-type: none"> <li>- Modelling</li> <li>- Final design solution</li> </ul> Review of development and final idea	C1 – 1-9  A02 A03 A04	<b>RV</b> C1 Topic 1-9 <b>NS/R</b> Modelling and presentation of design solution skills			

Year 13							
When	WHAT & WHY WILL THEY LEARN? (SOW overview linked to assessment Objectives)		New Skill = NS Revisit = R Revision = RV	Stretch and Challenge (Differentiation – how will you stretch the most able to achieve top grades?)	CIEAG/Extension  Trips, workshops, speakers, local environment and experiences	KS4 PRIOR LEARNING  How will GCSE knowledge support new skills & knowledge	IDENTIFY LINKS  How will you link learning between schools? What common threads do you have?
Term Plan	KNOWLEDGE & SKILLS	Assessment Objective		Band 5 = Informed Band 6 = Mature			
<b>Term 1</b>	<b>Component 1: Knowledge and understanding</b> Current legislation. Students need to understand current legislation from the consumers point of view the implications of consumer rights legislation to consumers and manufacturers.	C1 – 1-10  A03 A04	<b>RV</b> C1 Topic 1-10 <b>NS/R</b> Manufacturing Planning skills	<b>C1:</b> To achieve the top grades students will need to demonstrate clear subject knowledge understanding and be able to respond to specific topic		Prior knowledge of GCSE exam NEA process will allow students to understand the process and expectations of work load, creativity and independence.	

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	<b>Component 2: Extended project</b> Students need to work on their NEA by doing the following: <ul style="list-style-type: none"> <li>- Manufacturing planning</li> </ul>			questioning and apply thinking. <b>C2:</b> To achieve the top grades students will need to demonstrate in depth planning that identifies processes, safety issues and quality control points. These will be time specific against accurate timings.		- Planning	
<b>Term 2</b>	<b>Component 1: Knowledge and understanding</b> Information handling, Modelling and forward planning. Students need to understand collection, collation and analysis of information and the use of this to make informed decisions. Modelling the costing of projects to achieve an optimum outcome. The importance, implications and ways of protecting the intellectual property of designers, inventors and companies. Implications to designers, manufacturers and consumers of standards BSI, CE and ISO when developing designs and manufacturing products. <b>Component 2: Extended project skills</b> Students need to work on their NEA by doing the following: <ul style="list-style-type: none"> <li>- Manufacturing a final prototype</li> </ul>	C1 – 1-11 A04	<b>RV</b> C1 Topic 1-11 <b>NS/R</b> Manufacturing skills	<b>C1:</b> To achieve the top grades students will need to demonstrate clear subject knowledge understanding and be able to respond to specific topic questioning and apply thinking. <b>C2:</b> To achieve the top grades students will need to demonstrate sophisticated selection of materials, fixtures, components and fittings which are fully appropriate to the final prototype, showing an in depth understanding of material properties, the requirements of the end user, and the intended purpose of the prototype.	<b>NEC Grand Designs exhibition Birmingham to establish and investigate NEA</b>	Prior knowledge of GCSE exam NEA process will allow students to understand the process and expectations of work load, creativity and independence. <ul style="list-style-type: none"> <li>- Manufacturing</li> </ul>	
<b>Term 3</b>	<b>Component 1: Knowledge and understanding</b> Further processes and techniques. Students need to understand strategies, techniques and approaches to explore, create and	C1 – 1-12 Mock exam A04	<b>RV</b> C1 Topic 1-12 <b>NS/R</b>				

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	<p>evaluate design ideas. Applications, characteristics, advantages and disadvantages of project management strategies. The cost, sales, profit and market implications to the designer and manufacturer of the stages of a products life cycle.</p> <p><b>Component 2: Extended project skills</b> Students need to work on their NEA by doing the following:</p> <ul style="list-style-type: none"> <li>- Manufacturing a final prototype</li> </ul>		<p>Manufacturing and evaluating skills</p>	<p>They will show accomplished use of tools, equipment and techniques and demonstrate a consistently high degree of safe working practice for self and others.</p>			
<b>Term 4</b>	<p><b>Component 1: Knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>- Revisit and revision of all 12 topics</li> </ul> <p><b>Component 2: Extended project skills</b> Students need to work on their NEA by doing the following:</p> <ul style="list-style-type: none"> <li>- Manufacturing a final prototype</li> <li>- Evaluating design and prototype</li> </ul>	<p>C1 – 1-12 A04</p>	<p><b>RV</b> C1 Topic 1-12 <b>NS/R</b> Manufacturing and evaluating skills</p>	<p><b>C1:</b> To achieve the top grades students will need to demonstrate clear subject knowledge understanding and be able to respond to specific topic questioning and apply thinking.</p> <p><b>C2:</b> To achieve the top grades students will need to demonstrate comprehensively developed analysis of the prototype taking into account refinements implemented during the development and the client /user specification showing a perceptive approach to testing against measurable criteria.</p>		<p>Prior knowledge of GCSE exam NEA process will allow students to understand the process and expectations of work load, creativity and independence.</p> <ul style="list-style-type: none"> <li>- Evaluating</li> </ul>	

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				They will show omprehensively developed analysis of the social, moral, ethical and environmental impact of materials and processes of the prototype.			
<b>Term 5</b>	<b>Component 1: Knowledge and understanding</b> <ul style="list-style-type: none"> <li>- Revisit and revision of all 12 topics</li> </ul>	C1 – 1-12	<b>RV</b> C1 Topic 1-12 <b>NS/R</b> CAD and modelling	<b>C1:</b> To achieve the top grades students will need to demonstrate clear subject knowledge understanding and be able to respond to specific topic questioning and apply thinking.			