Year 7

School Vision	**Challenging all of our students supportively to become confident and curious enhancing lives now and in the future**		
Faculty Intent	To nurture and develop curiosity and confidence through active learning: creating challenges for all students through Expression, Experience and Engagement.		
Subject Intent	*"Combining a range of disciplines to find solutions to design problems"*		
	1	**2**	**3**
Topic Name **Key Content**	**<u>Desk Tidy</u>** Manufacture a desk tidy. DT material areas: Polymers, timbers	**<u>Tie Dye Cushion</u>** Tie dye fabric and use it to make a cushion. DT material areas: textiles	**<u>Bauhaus Clock</u>** Design and manufacture a clock inspired by Bauhaus DT material areas: timbers, metals, papers and boards, polymer, textiles
Intent			
How does this link to your intent?	The classification and properties of thermoforming and thermosetting polymers and why these materials have been fundamental in the development of our society.	The classification and properties of some basic textile fibres and the versatility of textiles which account for their use in a wide range of industries.	The classification and properties of ferrous, non-ferrous and alloyed metals and how this important material has been used for many thousands of years and has proved crucial in the evolution of our civilisation.
Sequencing			
Why this and why now?	In this unit, pupils will be introduced to the workshop and learn basic workshop skills through the manufacture of a desk tidy. This unit will focus on workshop health and safety procedures whilst developing skills in shaping, drilling, sanding and finishing materials.	In this unit, pupils will be introduced to the sewing equipment and learn basic sewing skills through the manufacture of a cushion. This unit will focus on health and safety procedures whilst developing skills in pinning, hand stitching and machine sewing.	In this unit, students will return to the workshop to practice and build upon skills from unit 1 whilst learning some new tools and equipment specific to metal work.
National Curriculum Audit			
Design			✅
Make	✅	✅	✅

Evaluate	✅	✅	✅
Technical knowledge	✅	✅	✅
Key concepts / Vocabulary			
12 or less	• Polymer • Thermoforming • Thermosetting • Raw material • Origin • Sustainable • Finite • Properties • Countersink • Pilot hole • Jig • Knock-down fitting	• Fabric • Dye • Synthetic • Natural • Resist method • Wet processing • Mordant • Dye affinity • Properties • Absorbent • Colourfast • Raw material	• Timber • Softwood • Hardwood • Manufactured board • Standard component • Design movement •
Learning Outside the Classroom / Cultural Capital			
Opportunities	Possible beach clean looking at plastic waste.		Collecting natural materials to use as a wind catcher.
Homework			
Description	1. Key term definitions 2. Reading task 3. Tools and equipment task 4. Careers task	1. Key term definitions 2. Reading task 3. Fibre research task 4. Careers task	1. Key term definitions 2. Reading task 3. Material properties task 4. Careers task
Assessment			
Type	1. Baseline assessment 2. End of unit assessment	1. Assessed piece of work: 2. End of unit assessment	1. Assessed piece of work 2. End of unit assessment
Why this style of assessment and why now?	**Baseline:** To ensure content is pitched at the appropriate level and students are challenged or supported as necessary.		

	End of unit: To check students understanding and retention of the topics covered. Grade used for data drop in combination with assessed pieces of work. End of unit assessments are an exam paper and assess AO4 (technical knowledge). Use for forward planning of areas to revisit if required. **Assessed piece of work:** In addition to end of unit assessments, students will have 1 piece of assessed work per unit which cover AO1, 2, 3. (AOs are taken from GCSE Design and Technology. See below) **End of year assessment:** Exam paper covering theory content from units covered throughout the year. The students' level will be determined by a combination of end of unit assessment and assessed work from different strands (design, make, evaluate) to enable a holistic picture overall. Therefore, students are not penalised if they are strong in one area (e.g. practical) but not another. By the end of the academic year, in combination with an end of year assessment a fair and clear picture of the student's progress will be evident.

Year 8

School Vision	**Challenging all of our students supportively to become confident and curious enhancing lives now and in the future.**		
Faculty Intent	To nurture and develop curiosity and confidence through active learning: creating challenges for all students through Expression, Experience and Engagement.		
Subject Intent	*"Combining a range of disciplines to find solutions to design problems"*		
	1	**2**	**3**
Topic Name **Key Content**	**Pewter Casting** Design and make a pewter token inspired by biomimicry. DT material areas: metals	**Food inspired cushions** Design and make a cushion inspired by a food product. DT material areas: textiles	**Flip light** Design and make a box lamp which uses a tilt switch. DT material areas: timbers, systems & control, polymers
Intent			
How does this link to your intent?	Designers often look to nature to solve design problems.	Different fabrics and techniques can be combined to create decorative products.	Electronics can be combined with other materials to create functional products.
Sequencing			
Why this and why now?	The classification and properties of ferrous, non-ferrous and alloyed metals and how this important material has been used for many thousands of years and has proved crucial in the evolution of our	In this unit, students will develop their sewing skills from year 7. They will learn how to create a range of decorative techniques and how these can be exploited to enhance textile products.	In this unit, students will learn how to make a simple circuit and how switches can be used to create different outputs. They will use a tilt switch to make a light which illuminates when turned 90°.

	civilisation. In this unit, students will begin to look at sources of inspiration for design ideas. They will learn how designs can be developed through a variety of strategies. They will be introduced to new metal working processes such as casting, filing and polishing.		
National Curriculum Audit			
Design	✅	✅	✅
Make	✅	✅	✅
Evaluate	✅	✅	✅
Technical knowledge	✅	✅	✅
Key concepts / Vocabulary			
12 or less	• Casting • Melting point • Alloy • Ferrous • Non ferrous • Biomimicry • Biomorphism • CAD • CAM • Pewter • Casting • Sprue • Design development	• Applique • Felt • Non-woven • Knitted • Natural fibre • Synthetic fibre • Component • Embroidery • Interfacing • Stitch • 3 dimensional • Embellishment	• Component • Switch • Circuit • Solder • Lamp • Input • Output • Joint • Conductivity • MDF • Standard component • Battery
Learning Outside the Classroom / Cultural Capital			
Opportunities			

Homework			
Description	1. Key term definitions 2. Reading task 3. Biomimicry research task 4. Careers task	1. Key term definitions 2. Reading task 3. Product range design task 4. Careers task	1. Key term definitions 2. Reading task 3. Advertisement design task 4. Careers task
Assessment			
Type	1. Baseline assessment covering all 4 NC strands. 2. End of unit assessment	1. Assessed piece of work: design 2. End of unit assessment	1. Assessed piece of work: make 2. End of unit assessment
Why this style of assessment and why now?	**Baseline:** To ensure content is pitched at the appropriate level and students are challenged or supported as necessary. **End of unit:** To check students understanding and retention of the topics covered. Grade used for data drop in combination with assessed pieces of work. End of unit assessments are an exam paper and assess AO4 (technical knowledge). Use for forward planning of areas to revisit if required. **Assessed piece of work:** In addition to end of unit assessments, students will have 1 piece of assessed work per unit which cover AO1, 2, 3. (AOs are taken from GCSE Design and Technology. See below) **End of year assessment:** Exam paper covering theory content from units covered throughout the year. The students' level will be determined by a combination of end of unit assessment and assessed work from different strands (design, make, evaluate) to enable a holistic picture overall. Therefore, students are not penalised if they are strong in one area (e.g. practical) but not another. By the end of the academic year, in combination with an end of year assessment a fair and clear picture of the student's progress will be evident.		

Year 9

School Vision	**Challenging all of our students supportively to become confident and curious enhancing lives now and in the future.**		
Faculty Intent	To nurture and develop curiosity and confidence through active learning: creating challenges for all students through Expression, Experience and Engagement.		
Subject Intent	*"Combining a range of disciplines to solve design problems"*		
	1	**2**	**3**
Topic Name	**<u>Remembrance Wall Hanging</u>** Each student design and	**<u>Eco Printed Tablet Beanbag</u>** Create a printed fabric	**<u>Bird Boxes</u>** Design and make a timber bird box. The two best boxes will be set up around school and a camera with live feed will

Key Content	make a fabric patch to commemorate Remembrance Day. Patches will be assembled to make a large wall hanging.	using local plant materials. Use the fabric to make a tablet beanbag.	hopefully catch some nesting in Spring.
Intent			
How does this link to your intent?	Working collaboratively to produce a large-scale decorative product.	Considering the use of natural materials in the design of products.	Consideration of how and where a product will be used and how this determines the design, materials and manufacturing methods.
Sequencing			
Why this and why now?	In this unit, students will consolidate the sewing skills from years 7 and 8 to design and make a patch for a wall hanging. They will decide which decorative techniques will be most appropriate to achieve their design idea.	In this unit, students will learn about the environment problems caused by synthetic dyes and the manufacture of textiles. They will forage for natural materials and use these to print a fabric which they will then use to make a beanbag for a tablet or phone.	In this unit, students will research into the requirements of a product and choose their own materials and construction methods to manufacture their design. This unit tests students' knowledge of all of their learning in KS3 DT as they will make the decisions.
National Curriculum Audit			
Design	✅	✅	✅
Make	✅	✅	✅
Evaluate	✅	✅	✅
Technical knowledge	✅	✅	✅
Key concepts / Vocabulary			
12 or less	• Client • Consumer • End user • Function • Safety	• Synthetic • Natural • Sustainability • Toxic • Effluent	• Design brief • Research • Specification • Environment • Materials • Fitness for purpose

	• Applique • Printing • Decorative • Embroidery • Quilting • Interfacing • Couching	• Dye stuff • Mordant • Printing • Environment • Substance • Modifier • Fixative	• Dimensions • Wood joint • Hinge • Properties • Finishing • Evaluation
Learning Outside the Classroom / Cultural Capital			
Opportunities		Gathering of natural materials suitable for eco printing.	
Homework			
Description	1. Key term definitions 2. Reading task 3. Imagery research task 4. Careers task	1. Key term definitions 2. Reading task 3. Synthetic dyes research task 4. Careers task	1. Key term definitions 2. Reading task 3. Birds of Cyprus research task. 4. Careers task
Assessment			
Type	1. Baseline assessment covering all 4 NC strands. 2. End of unit assessment	1. Assessed piece of work: design 2. End of unit assessment	1. Assessed piece of work: evaluate 2. End of year assessment
Why this style of assessment and why now?	**Baseline:** To ensure content is pitched at the appropriate level and students are challenged or supported as necessary. **End of unit:** To check students understanding and retention of the topics covered. Grade used for data drop in combination with assessed pieces of work. End of unit assessments are an exam paper and assess AO4 (technical knowledge). Use for forward planning of areas to revisit if required. **Assessed piece of work:** In addition to end of unit assessments, students will have 1 piece of assessed work per unit which cover AO1, 2, 3. (AOs are taken from GCSE Design and Technology. See below) **End of year assessment:** Exam paper covering theory content from units covered throughout the year. The students' level will be determined by a combination of end of unit assessment and assessed work from different strands (design, make, evaluate) to enable a holistic picture overall. Therefore, students are not penalised if they are strong in one area (e.g. practical) but not another. By the end of the academic year, in combination with an end of year assessment a fair and clear picture of the student's progress will be evident.		

AO1: Research design possibilities: identify, investigate and outline design possibilities to address needs and wants.

AO2 Design and make: prototypes that are fit for purpose

AO3 Analyse and evaluate: •design decisions and outcomes, including for prototypes made by themselves and others. •Consider wider issues in design and technology.

AO4 Demonstrate and apply knowledge and understanding of: •technical principles •designing and making principles.

Y10

School Vision	**Challenging all of our students supportively to become confident and curious enhancing lives now and in the future.**					
Faculty Intent	To nurture and develop curiosity and confidence through active learning: creating challenges for all students through Expression, Experience and Engagement.					
Subject Intent	*"Combining a range of disciplines to find solutions to design problems"*					
Exam Board & Specification	**Edexcel GCSE 9-1 Design and Technology (Timbers)**					
	Term 1		**Term 2**		**Term 3**	
	1	**2**	**3**	**4**	**5**	**6**
Topic Name **Key Content**	1. Tools and equipment 2. Design strategies and communication techniques 3. Influences on design and technological practice.	1.Origins and types of timbers 2. Hardwoods, softwoods, manufactured boards 3. Properties and uses of timber	1. Stock forms, preservation, defects 2. Strengthening and construction 3. Finishing for functional and aesthetic purposes	1. Other materials. Categorisation, properties and uses of metals, polymers, papers and boards, textiles. 2. Modern and smart materials.	1. New and emerging technologies. 2. Manufacturing systems and processes 3. Wider issues in design and technology	1. Mechanical devices 2. Electronic systems 3. Programmable components.
	All theory content is supported by short design and make projects which enable students to develop practical skills.					
Intent						

How does this link to your intent?	A range of different strategies can be used to solve design problems.	Timbers are used extensively in products.	Timbers can be altered to exploit different properties.	Other materials are important in the development of products.	Considering how products are manufactured and the consequences of doing so.	The above can be used to assist in finding solutions to design problems.
Sequencing						
Why this and why now?	These areas underpin how students can tackle design problems.	Students will study the timbers specialism. They should have an appreciation of where different timbers originate and how their different properties can be exploited in the design of products.	Students need an understanding of how timber can be strengthened or finished and the reasons for doing so.	These areas will be covered in the core content section of the exam. Students may also choose to combine materials in the prototype they manufacture.	These areas may be assessed in both core and specialist content sections of the exam. They are usually higher mark questions which require knowledge of materials covered in previous units.	These areas will be covered in the core content section of the exam. Students may also choose use some of these systems in the prototype they manufacture.
Key concepts / Vocabulary						
12 r less	• Wasting process • Additive process • Wood joint • Component • Specification • Influence • Perspective • Orthographic • Isometric • CADCAM • User-centred • Systems thinking	• Deciduous • Hardwood • Grain • Softwood • Evergreen • Globalisation • Climate • Knots • Sustainable • Density • Veneer • Manufactured board	• Hardness • Toughness • Durability • Warping • Twisting • Cracking • Seasoning • Defect • PAR • PSE • Mouldings • Dowel	• Composite • Alloy • Synthetic • Stimuli • Fibre • Thermoforming • Thermosetting • Ductility • Malleability • Resilience • Elasticity • Biodegradable	• Demographic • Enterprise • Automation • Assembly • Prototype • Batch • One-off • Lean manufacturing • Continuous production • Standard component • Sustainable • Renewable	• CAM • Linkage • Pulley • Friction • Gear • Torque • Input • Output • Resistance • Analogue • Circuit • Flowchart

Learning Outside the Classroom / Cultural Capital						
Opportunities						
Homework						
Description	Supporting homework booklet	Supporting homework booklet	Supporting homework booklet	Supporting homework booklet	Supporting homework booklet	Supporting homework booklet
Assessment						
Type	Each unit will have an end of unit written assessment using past exam questions.					
Why this style of assessment and why now?	Students will revise the content and be able to familiarise themselves with the style of exam questions they may come across for each area of content.					

Y11

School Vision	**Challenging all of our students supportively to become confident and curious enhancing lives now and in the future.**					
Faculty Intent	To nurture and develop curiosity and confidence through active learning: creating challenges for all students through Expression, Experience and Engagement.					
Subject Intent	*"Combining a range of disciplines to find solutions to design problems"*					
Exam Board & Specification	**Edexcel GCSE 9-1 Design and Technology (Timbers)**					
	Term 1		**Term 2**		**Term 3**	
	1	**2**	**3**	**4**	**5**	**6**
Topic Name **Key Content**	NEA (50% of overall grade) Students choose from 6 tasks set by the exam board. Portfolio of work plus physical prototype			Intensive revision	Intensive revision	Intensive revision
Intent						

How does this link to your intent?	Exam board requirement	Exam board requirement	Exam board requirement	Exam board requirement
Sequencing				
Why this and why now?	Exam board requirement	Preparation for June exam (50% of overall grade)	Preparation for June exam (50% of overall grade)	Exam usually one of the last exams around 20th June.
Key concepts / Vocabulary				
12 or less	• Design brief • Research • Target user • Consumer • Design specification • Design development • Annotation • Prototype • Evaluation • Analysis • Life cycle • Iterative design			
Learning Outside the Classroom / Cultural Capital				
Opportunities	Primary research visit based on NEA task.			
Homework				
Description	Homework will be set bi-weekly and will focus on NEA write ups or an area of revision.			
Assessment				
Type				

Why this style of assessment and why now?						

Y12

School Vision	**Challenging all of our students supportively to become confident and curious enhancing lives now and in the future.**					
Faculty Intent	To nurture and develop curiosity and confidence through active learning: creating challenges for all students through Expression, Experience and Engagement.					
Subject Intent	*"Combining a range of disciplines to find solutions to design problems"*					
Exam Board & Specification	**AQA A Level Design and Technology – Product Design**					
	Term 1		**Term 2**		**Term 3**	
	1	**2**	**3**	**4**	**5**	**6**
Topic Name **Key Content**	**Technical Principles** Materials, properties, their manufacturing and applications **Designing and Making Principles** Design methods and processes, design theory, responsible design		**Technical Principles** Scales of practice, health and safety, design for manufacture, maintenance, repair and disposal. **Designing and Making Principles** Selecting equipment, accuracy in design and manufacture, design for manufacture and project management		**Technical Principles** Protecting designs and IP, digital design and manufacture, feasibility studies, enterprise and marketing. **Designing and Making Principles** critical analysis, national and international standards.	
	Each unit will be supported by practical design and make tasks, design problems, technical drawing practice, existing product analysis and focused practical tasks.					
Intent						
How does this link to your intent?	Knowledge of materials and their properties are at the heart of product design; as is the ability to communicate design ideas.		Designers need to consider how products can be scaled for different types of production, how they will be maintained and what will happen to them at end of life.		There are rules and regulations around product design. Designers must be aware of these to protect themselves and the consumer	

Sequencing						
Why this and why now?	These areas underpin how students can tackle design problems.		These topics look at other criterion that designers must consider when designing and planning for manufacture, use and disposal.		These units give students an awareness of the legislation that must be considered when design products.	
Key concepts / Vocabulary						
12 or less	• Properties • Fabrication • Redistribution process • Wasting process • Forming • Classification • Laminate • Composite • Smart material • Modern material • Elastomer • Stock form	• Iterative design • User-centred • Ergonomics • Anthropometric • Investigation • Design influence • Form • Function • Life cycle • Microelectronic • Internet of things • Sustainable	• Assembly • Sub-assembly • Production scale • FMS • JIT • UPS • Component • Risk assessment • Legislation • COSHH • 6 r's	• Circular economy • Quality control • Quality assurance • TQM • Tolerance • Critical path • End of life • Specification • Safe working practice • Jig • Fixture	• IP • IPR • Copyright • Patent • Registered design • Trademark • Logo • Open design • Feasibility study • TAKT time • Buffer zone • Cycle time	• BSI • Kitemark • ISO • Quality management • ROHS • Directive • WEEE • FSC • Critical analysis • Modification • Evaluation • Accreditation
Learning Outside the Classroom / Cultural Capital						

Opportunities		Visit to Nicosia – Eleftheria Square which was designed by Zaha Hadid				
Homework						
Description	Homework will relate to independent subject reading, research and gathering information, write ups of practical work and exam question practice.					
Assessment						
Type	Each unit of work will have an end of unit written assessment using past exam questions.					
Why this style of assessment and why now?	Consolidation of theory content. Students will revise the content and be able to familiarise themselves with the style of exam questions they may come across for each area of content.					

Y13

School Vision	**Challenging all of our students supportively to become confident and curious enhancing lives now and in the future.**					
Faculty Intent	To nurture and develop curiosity and confidence through active learning: creating challenges for all students through Expression, Experience and Engagement.					
Subject Intent	*"Combining a range of disciplines to find solutions to design problems"*					
Exam Board & Specification	**AQA A Level Design and Technology – Product Design**					
	Term 1		**Term 2**		**Term 3**	
	1	**2**	**3**	**4**	**5**	**6**
Topic Name **Key Content**	NEA Students will conduct a design and make project on an area of their choice.			Intensive revision	Intensive revision	Intensive revision
Intent						

How does this link to your intent?	Exam board requirement	Exam board requirement	Exam board requirement	Exam board requirement
Sequencing				
Why this and why now?	Exam board requirement. NEA will be completed in year 2 so students have enough knowledge of product design principle from year 1 which can be applied to their coursework.	Preparation for May/June exam (Exam papers = 50% of overall grade)	Preparation for May/June exam (Exam papers = 50% of overall grade)	Preparation for May/June exam (Exam papers = 50% of overall grade)
Key concepts / Vocabulary				
12 or less	• Design brief • Research • Target user • Consumer • Design specification • Design development • Annotation • Prototype • Evaluation • Analysis • Life cycle • Iterative design			
Learning Outside the Classroom / Cultural Capital				
Opportunities	Primary research visit based on NEA task.			
Homework				

Description	Homework will relate to independent subject reading, research and gathering information, write ups of coursework and exam question practice.					
Assessment						
Type		Mock Exam November				
Why this style of assessment and why now?		Progress check, helps to inform predicted grade, intervention needs identified.				