

Curriculum and Skills Mapping Template

Subject : Product Design Key Stage: 4 Year: 10

Term	Topic	Objectives	Assessment	Academic Skills	Personal Skills
------	-------	------------	------------	-----------------	-----------------

1	Sweet Dispenser	<p>Demonstrate a creative and innovative response to the design brief</p> <p>Develop a range of design ideas Sweet dispenser to be used in a company setting by staff and customers.</p> <p>Students will learn a variety of CAD/CAM processes and able to use all current machines in school indenpdently.</p> <p>Learn a variety of ways to finish material.</p> <p>Evaluate outcomes through reflective annotation within booklet, using technical terminology to demonstrate knowledge of tools and processes.</p>	<p>Design</p> <ul style="list-style-type: none"> • Initial idea generation within mind map • Logo and branding design and development • CAD work in 2D Design tools <p>Make</p> <ul style="list-style-type: none"> • Preparation of material ready for machine use. • Setting and running variety of CAM equipment to include Laser cutter,CNC milling machine and plotter. • • Painting and finishing <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluative comments throughout booklet • End Evaluation <p>Theory Content this term</p> <ul style="list-style-type: none"> • Core Theory Impact of emerging Technology Market Push and Pull Product Life Cycle Global production 	<ul style="list-style-type: none"> • Mathematics • Literacy • Understanding • Analysis • Evaluation • Planning • Designing • Creating 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time management • Remembering • Patience
---	-----------------	---	--	---	--

			Legalisation of products Consumer Rights CAD/CAM Sustainability and Environmental issues. Polymers.		
--	--	--	--	--	--

2a	Crossy Rd Character Keyring	<p>Drawing in Isometric on Paper to create 3D ideas</p> <p>Drawing in isometric in CAD</p> <p>Making Virtual models in 3D on CAD</p> <p>How to independently use the 3D printers in School</p>	<p>Design</p> <ul style="list-style-type: none"> • Isometric on Paper • Basic shapes leading to more complex creations • CAD work in 2D Design tools • CAD work in inventor to create virtual solutions. <p>Make</p> <ul style="list-style-type: none"> • Virtual modelling • 3d printing of solution • Finishing of 3d Printed models • Packaging of product. <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluative comments throughout booklet • End Evaluation <p>Theory Content this term</p> <ul style="list-style-type: none"> • 3d Printing • Smart Materials • Footprints • Designers • Packaging • Card and Paper. • Industrial Printing. 	<ul style="list-style-type: none"> • Mathematics • Literacy • Understanding • Analysis • Evaluation • Planning • Designing • Creating 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time management • Remembering • Patience
2b and 3a	Wooden Box	Manufacture of a given design to show	<p>Design</p> <ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Mathematics • Literacy 	<ul style="list-style-type: none"> • Resilience • Reflection

		<p>accuracy and procession.</p> <p>Explore ways in which timber can be joined together.</p> <p>Explore how you can apply finish to timber.</p>	<p>Make</p> <ul style="list-style-type: none"> • Joining Timber effectively • Precision and Accuracy • Finish for Timber. <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluative comments throughout booklet • End Evaluation <p>Theory Content this term</p> <ul style="list-style-type: none"> • Timber • Wood working tools • Joining material • Wood finishes • Adhesives 	<ul style="list-style-type: none"> • Understanding • Analysis • Evaluation • Planning • Designing • Creating 	<ul style="list-style-type: none"> • Responding to feedback • Time management • Remembering • Patience
Term 3b	Controlled Assessment	Start of Controlled assessment coursework	<p>Task 1 Analysing the context</p> <p>Task 2 Identifying the Problem and Establishing the Need.</p> <p>Task 3 Client Questionnaire</p> <p>Task 4 Work of Past professionals and existing examples.</p>	<ul style="list-style-type: none"> • Understanding • Analysis • Evaluation • Planning • Research 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time management • Remembering • Patience • ICT Skills

Curriculum and Skills Mapping Template

Subject : Product Design Key Stage: 4 Year: 11

Term	Topic	Objectives	Assessment	Academic Skills	Personal Skills
Term 1a	Controlled Assessment	Controlled assessment coursework	Task 5 Key sizes and measurements Task 6 Specification Task 7 Ideas Task 8 Development card modelling	<ul style="list-style-type: none"> • Understanding • Analysis • Evaluation • Planning • Research 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time management • Remembering • Patience • ICT Skills
Term 1b	Controlled Assessment	Controlled assessment coursework	Task 9 Material/ processes and finishes testing Task 10 CAD modelling Task 11 Final Working Drawing Task 12 Plan of Manufacture	<ul style="list-style-type: none"> • Understanding • Analysis • Evaluation • Planning • Research • Creating 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time management • Remembering • Patience • ICT Skills

Term 2a	Controlled Assessment	Controlled assessment coursework	Task 13 Product Manufacture	<ul style="list-style-type: none"> • Understanding • Analysis • Evaluation • Planning • Research • Creating 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time management • Remembering • Patience • ICT Skills
Term 2b	Controlled Assessment	Controlled assessment coursework Exam Practice	Task 14 Evaluation Testing against the Specification Task 15 Client Evaluation Task 16 Modification for the future	<ul style="list-style-type: none"> • Understanding • Analysis • Evaluation • Planning • Research 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time management • Remembering • Patience • ICT Skills
Term 3a	Exam Practice	Exam Practice	Preparation for Examinations and recap of theory.	<ul style="list-style-type: none"> • Understanding • Analysis • Evaluation • Planning • Revision 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time management • Remembering • Patience

Curriculum and Skills Mapping Template

Subject : Product Design Key Stage: 5 Year: 12

Term	Topic	Objectives	Assessment	Academic Skills	Personal Skills
Autumn 1	<p>Workshop comfortability and skills standardisation.</p> <p>CAD/CAM Skills and creative solutions</p>	<p>Use tools and equipment affectively to shape compliant material accurately and safely.</p> <p>Enhance your skills interpreting a schematic diagram.</p> <p>Manufacture an accurate scale model of a product that accurately displays your ability to create functional lap and finger joints from pine.</p> <p>Create a solution for a magazine cover with a buildable toy.</p>	<p>Make</p> <ul style="list-style-type: none"> • Manufacture a functional representation of your ability to join pine wood using traditional joining techniques • Demonstrate your ability to use the correct tools and equipment safely and effectively • Analyse a schematic diagram and create a physical representation of the product. • CAD/CAM skills, Inventor Knowledge <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluative comments throughout • End Evaluation 	<ul style="list-style-type: none"> • Understanding • Analysis • Creating 	<ul style="list-style-type: none"> • Resilience • Giving feedback • Reflection • Responding to feedback • Remembering • Patience

			<p>Technical Knowledge</p> <ul style="list-style-type: none"> • Demonstrate knowledge of workshop processes, tools, and equipment • Correctly interpret a schematic diagram whilst allowing for working processes (e.g., Thickness of cutting implement) • Inventor Knowledge • Polymers recap • Papers and board theory • Printing processes 		
Autum 2	Desk Tidy Project	<p>Use tools and equipment affectively to shape compliant material accurately and safely.</p> <p>Enhance your skills designing, developing and manufacturing a product from scratch. Pay close attention to the tools, materials and equipment you will use throughout the creation of your product as each one should be carefully selected and justified.</p>	<p>Make</p> <ul style="list-style-type: none"> • Manufacture a functional representation of the product using your ability to join pine/ plywood/ MDF using traditional joining techniques. • Metals and plastics should also be utilised to display your ability to work with multiple material types. 	<ul style="list-style-type: none"> • Understanding • Analysis • Evaluation • Planning • Designing • Creating • Development 	<ul style="list-style-type: none"> • Resilience • Giving feedback • Reflection • Responding to feedback • Time management • Remembering • Patience

		<p>Manufacture an accurate scale model of a product that accurately displays your ability to create functional desk tidy with a theme of your choice.</p>	<ul style="list-style-type: none"> • Demonstrate your ability to use the correct tools and equipment safely and effectively • Analyse a schematic diagram and create a physical representation of the product. <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluative comments throughout • End Evaluation <p>Technical Knowledge</p> <ul style="list-style-type: none"> • Demonstrate knowledge of workshop processes, tools, and equipment • Correctly interpret a schematic diagram whilst allowing for working processes (e.g., Thickness of cutting implement) 		
SRING 1	Theory: Designer/ Design movements	Use tools and equipment affectively to shape compliant material accurately and safely.	<p>Make</p> <ul style="list-style-type: none"> • Manufacture a functional representation of the 	<ul style="list-style-type: none"> • Understanding • Analysis • Evaluation • Planning 	<ul style="list-style-type: none"> • Resilience • Giving feedback • Reflection

	<p>Practical: Product based on Designer/ Design movements</p> <p>Coursework Starting</p>	<p>Enhance your skills designing, developing and manufacturing a product based on a design movement in the EdExcel specification. Pay close attention to the tools, materials and equipment you will use throughout the creation of your product as each one should be carefully selected and justified.</p> <p>The design must be an everyday product (table, light switch, cereal box) and must be designed in a way to incorporate a provided design movement or designer that conforms with the specification.</p> <p>Manufacture an accurate scale model of a product that accurately displays your abilities.</p> <p>Start Major Coursework piece</p>	<p>product using your ability to join pine/ plywood/ MDF using traditional joining techniques</p> <ul style="list-style-type: none"> • Metals and plastics should also be utilised to display your ability to work with multiple material types. • Demonstrate your ability to use the correct tools and equipment safely and effectively • Analyse a schematic diagram and create a physical representation of the product. <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluative comments throughout • End Evaluation <p>Technical Knowledge</p> <ul style="list-style-type: none"> • Demonstrate knowledge of workshop processes, • tools, and equipment <p>Coursework</p>	<ul style="list-style-type: none"> • Designing • Creating • Development 	<ul style="list-style-type: none"> • Responding to feedback • Time management • Remembering • Patience
--	--	---	---	--	--

			Grids 1 -2		
Spring 2	Theory: Mathematics/ CAD CAM	<p>Use previous knowledge of mathematics and CAD/ CAM attained through KS3/ KS4 to generate a clear understanding of what level is required to complete the aspect of the specification.</p> <p>Example questions will be provided to show pupils what to expect in the exam (50% of the course)</p> <p>Major Coursework piece</p>	<p>Technical Knowledge</p> <ul style="list-style-type: none"> • Demonstrate knowledge of CAD/ CAM processes and provide examples along with advantages and disadvantages. • Engage in the mathematics element of the course which will include: substitution, volume, quadratics etc... <p>Coursework Grids 3--4</p>	<ul style="list-style-type: none"> • Understanding • Analysis • Remembering • Resourcefulness 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time managementX • Remembering • Patience
	Theory: Tool recognition/ Risk Assessment	<p>Use previous knowledge of tools, materials and processes attained through KS3/ KS4 to generate a clear understanding of what level is required to complete the aspect of the specification.</p> <p>Example questions will be provided to show pupils what to expect in the exam (50% of the course)</p>	<p>Technical Knowledge</p> <ul style="list-style-type: none"> • Demonstrate knowledge of workshop processes, tools, and equipment • Identify why a risk assessment might be carried out and what their purpose is within a modern working Environment. 	<ul style="list-style-type: none"> • Understanding • Analysis • Remembering • Resourcefulness 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time management • Remembering • Patience

<p>Summer 1</p>	<p>Theory: Product Analysis/ Production Methods</p>	<p>Use previous knowledge of product analysis and production methods attained through KS3/ KS4 to generate a clear understanding of what level is required to complete the aspect of the specification.</p> <p>Example questions will be provided to show pupils what to expect in the exam (50% of the course)</p> <p>Major Coursework piece</p>	<p>Technical Knowledge</p> <ul style="list-style-type: none"> • Demonstrate your analysis skills using ACCESSFM. • Identify the 3 main types of production methods and discuss why each one might be used to manufacture a specific product. <p>Coursework Grids 5 Card Modelling</p>	<ul style="list-style-type: none"> • Understanding • Analysis • Remembering • Resourcefulness 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time management • Remembering • Patience
<p>Summer 2</p>	<p>Theory: Mock Exam prep</p>	<p>Look back through your revision material and use the designated revision guides to revise for the mock examination. All the topics covered so far will be present in this exam and will be an accurate representation of the Y13 examination.</p> <p>Example questions will be provided to show pupils what to expect in the exam (50% of the course)</p> <p>Major Coursework piece</p>	<p>Technical Knowledge</p> <ul style="list-style-type: none"> • Use the designated revision methods to reflect on your learning in Y12 PD so far. • Look closely at the topic list provided to make sure you are aware of the areas that will be covered in the exam. <p>Coursework</p>	<ul style="list-style-type: none"> • Understanding • Analysis • Remembering • Resourcefulness 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time management • Remembering • Patience

			Grids 5 Development CAD modelling and Testing		
--	--	--	---	--	--

Curriculum and Skills Mapping Template

Subject : Product Design Key Stage: 5 Year: 13

Term	Topic	Objectives	Assessment	Academic Skills	Personal Skills
Autumn 1	Coursework Coursework Theory	Students will progress with coursework in double sessions. Theory content in single sessions will cover Working Drawings Pictorial Drawings Transition of Drawings	Technical Knowledge Working Drawings Pictorial Drawings Transition of Drawings Coursework Grids 6 Final Idea / costings and plan of manufacture.	<ul style="list-style-type: none"> • Understanding • Analysis • Remembering • Resourcefulness 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time management • Remembering • Patience
Autumn 2	Coursework Coursework Theory	Students will progress with coursework in double sessions. Theory content in single sessions will cover Paper Board Printing Processes	Technical Knowledge Paper Board Printing Processes Coursework Grids 7 Final Idea review Grid 9/10 make.	<ul style="list-style-type: none"> • Understanding • Analysis • Remembering • Resourcefulness 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time management • Remembering • Patience
Spring 1	Coursework Coursework Theory	Students will progress with coursework in double sessions.	Technical Knowledge Designing for maintenance and the cleaner environment	<ul style="list-style-type: none"> • Understanding • Analysis • Remembering • Resourcefulness 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback

		Theory content in single sessions will cover Designing for maintenance and the cleaner environment	Coursework Grid 9/10 make. Final Make Deadline		<ul style="list-style-type: none"> • Time management • Remembering • Patience
Spring 2	Coursework Coursework Theory	<p>Students will progress with coursework in double sessions.</p> <p>Theory content in single sessions will cover Current Legislation Information handling, modelling and planning Further processes and techniques</p>	<p>Technical Knowledge Current Legislation Information handling, modelling and planning Further processes and techniques</p> <p>Coursework Grid 11 Evaluation Coursework Deadline</p>	<ul style="list-style-type: none"> • Understanding • Analysis • Remembering • Resourcefulness 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time management • Remembering • Patience
Summer 1	Revision	Revision of theory content and exam technique for the summer examination	Final examination	<ul style="list-style-type: none"> • Understanding • Analysis • Remembering • Resourcefulness 	<ul style="list-style-type: none"> • Resilience • Reflection • Responding to feedback • Time management • Remembering • Patience

