Year 10 Storage Box
Unit Outline

Teaching Sequence	Resources	Learning Intentions
Introduction to the course • Talk about the two term unit with a focus of knowledge and skills and tech process • Stationery requirements • Revise Technology process link this to the year 9 years tech cycle. • Recap on stages in the process. • Introduce knowledge and skills project (4-5 weeks length).	• Students provide 20 leaf clear file • A3 poster of the Technology cycle • Student booklet	• Understand the aims of the course • Knowledge of material types, measuring, jointing and testing, cutting lists, planning.
Introduce short Skills Project (4-5 weeks) • Introduce project outline. • Planning, deadlines, key resources	Timeline and examples	• Manage time and resources effectively • Plan the key stages to complete class brief to final solution.
Introduce layout and presentation skills • 2D/3D freehand sketching, layout and annotation, presentation skills. • Working drawing and cutting list • Draw joining methods using 3D Isometric (grid paper)	Isometric grid paper Teacher example of good layout	• Learn effective visual communication of ideas
Material Selection • Application of appropriate material types. Aesthetics / Function	Selection of material samples	• Learn the reasons for selecting appropriate materials for the correct application

Design Realisation
• Individual skill development required to manufacture the solution through demonstration of:
  • Measuring
  • Mark out
  • Cutting and forming
  • Hand plain
  • Hand mitre saw
  • Clamps
• Discuss with students quality control measures.
	Workshop facilities and safety equipment	• The safe use of workshop equipment

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• Step by step construction of 4 different joining methods (one for each corner of the box). Finger, mitre, lap and butt joints and completed by students.	Teacher made examples of joints	Understanding of the pro's and con's of each joining method
Veneer and pattern templates	Grid paper	
• Create geometric design for box lid. (grid paper, scale 1:1)	Coloring pencils	
• Discuss the selection of material types.	Tape	
• Why we use veneers (aesthetics / function)	Tracing paper	Fit and assemble veneers to a high finish.
• Select wood veneer types (contrast)	Range of wood veneers	
• Teach marqutry skills, cutting and using templates	Craft knifes	
• Application of the wood veneers and the use of fixatives (contact glue)	Contact glue	Use all workshop equipment safety.
• Safe use of craft knifes and correct cutting surfaces	*Photographic examples of finished students work.*	
Introduce issue and class brief: *Second brief, larger individual design box.*		
• Explain expectations of presenting work in the student booklets		
• Show practical examples of previous class solutions and booklets.		Student understands expectations.
Identify the situation (initial brief)		
• Identify the key stakeholder and the item to be stored (need or opportunity)		
• Write a brief and specifications. (What is to be done, for who and why, restrictions?)	Access to a Key Stakeholder	Develop a clear understanding of the need or opportunity to be solved.
Planning		
• As a class, list the stages of the technology process		
• Draw a timeline that will show these stages		Develop an understanding of time management.
• Class discussion on how long each stage of the process might take.	Tech. cycle	
• Complete 'estimated' timelines at each milestone stage as it occurs in the project (eg; 2 week plan of action for the 'development stage').	Gantt chart examples	Reasons for planning ahead
Research		
• Research existing solutions, comment on product attributes (materials, function, aesthetics, and durability). Integrate researched information with conceptual drawings. Show a clear link between research and concepts.	Existing solutions, internet Material examples	Familiar with existing solutions related to similar issue
Concepts		
• Sketch in 2D and 3D a range of different ideas		Develop ideas and communicate them visually
• Use annotation to explain function, parts and stakeholders interests	Graphical equipment Teacher examples of layout	

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Concept screening (stakeholder feedback) • Use a table that evaluates each concept against class agreed criteria: (suitable for intended location, functionality, aesthetics, reflects key stakeholders interests, budget, etc). • Summarise the concept screening findings; include any important stakeholder feedback to be considered as well. **Development** • Apply the feed back from the stakeholder (modifications / changes). • Develop revised drawings of the approved concept • Develop a **mock up** to test and evaluate against the needs and wants of the key stakeholder. Consider: Fitness for purpose, intended location and aesthetics and function (1:1 card mock up). • Include a photograph of the mock up. Draw alterations and modifications to the design on top of the photo; justify why they have been done. **Selection and application of joining methods** • Select joints from knowledge gained in the introductory skill exercise. • Then justify the section of a particular joining method (pro's / con's) • Draw the selected joint/s using the isometric method (grid paper) **Final brief and specifications** • Formulate a final brief and list of specifications • Final brief will include what the outcome is, the purpose of it, who it is for, and where it will be located. **Final working drawing** • Demonstrate using instruments. On an A3 sheet draw in orthographic projection a front, plan, side elevations at a scale of 1:2. **Cutting list** • Produce a cutting list that includes a basic costing. **Planning (construction)** • Plan the time available and resources required to complete the construction	and presentation Access to key stakeholder, constructive feedback. Feedback from K.S. Materials to construct a mock up. Digital camera Examples of joining methods. www.technologystudent.com Isometric grid paper Teacher directed sentence structure. A3 paper, graphical equipment. Graphics room?	Understanding feedback *From feedback students will be able to evaluate their concepts against specs. K.S. feedback will be considered and acted upon.* Application of feedback. Modification of design idea. Understanding the importance of mocking up a concept to test fitness for purpose. Adapting ideas after testing them. Greater understanding of materials and processes. Different joints and practical skills. Development of a clear final brief. Understanding of what needs to be achieved and why, and for who? Learn how to present a final graphical representation of their final design. Understand why measurements are included. Understand how to make and use a cutting list.

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stage. (Construction flow chart showings key stages).
• Include resources needed and quality control checks.
 	
Manufacture
• Prepare the materials for manufacture of their product. Show skills in the following areas:
  • Measure
  • Marking out
  • Cutting
  • Shaping
  • Assembly
  • Finishing
 	
Evaluation
Discuss with students the key points of evaluation:
• Evaluating final outcome against your brief and intended specification.
• Evaluating the outcome against the needs of the stakeholder
• Evaluating the success or not of the outcome.
• Evaluating students own practice.
 	
A3 summary presentation board
• Include on the A3 board: Photograph of final solution, copy of the final brief, final evaluation
	Construction flowchart examples.
	
	Working drawing with dimensions.
	Workshop equipment, raw materials, finishing procedures.
	
	Finished final outcome.
	Final brief including specifications.
	
	A3 board, digital camera, graphical equipment.
		Students will understand why a construction cycle is planned. Development of time and resource management.
		
		Students will learn and apply through practical experience how to manipulate materials and operated limited machinery. Knowledge of materials and processes will be learnt.
		
		The importance of evaluation related to the fitness for purpose. Understanding how to evaluate a final outcome against the K.S. specifications /wants and needs.
		
		Learn the importance of communicating their ideas to a wider audience for assessment.