Stage 4 Technology Mandatory – Materials & Production Processes

Desk Tidy Unit (10 weeks)

Unit Overview

This 10-week unit guides **Year 7/8** students through the complete design and production of a **timber Desk Tidy**. From a real-world brief (organising pens, pencils, cables and paperclips) students research, ideate, plan, build and evaluate a functional wooden organiser while developing safe workshop practices and foundational woodworking skills.

Assessment

- Practical project – Desk Tidy construction and finish (60 %)
- Safe work habits & OnGuard safety quiz (20 %)
- Design folio, working drawings & evaluation report (20 %)

Syllabus Outcomes (Materials & Production Processes)

- **TE4-SDP-01** – Explains how sustainable material choices (e.g., radiata pine vs. MDF) influence Desk Tidy design and production.
- **TE4-PDP-01** – Describes designer and producer practices involved in creating workstation organisers.
- **TE4-MSC-01** – Analyses properties of timber and composite boards to select appropriate materials for Desk Tidy components.
- **TE4-DES-01** – Produces and evaluates sketches and working drawings for a Desk Tidy solution.
- **TE4-PPM-01** – Plans and manages a production schedule, cutting list and resource usage for the Desk Tidy build.
- **TE4-SAF-01** – Demonstrates safe selection and use of hand tools, power tools and protective equipment in the workshop.

Weekly Program – Explicit Desk Tidy Tasks

Week	Syllabus Content	Teaching / Learning / Assessment	Resources

1	• Introduce Desk Tidy brief: stationery organisation needs • Workshop safety rules & PPE requirements • Properties of radiata pine & MDF samples	• Present brief with photos and physical samples of Desk Tidies • Safety induction: PPE demo (glasses, masks), sign-off safety contract, complete OnGuard quiz • Students handle timber/MDF samples, record density, grain and appearance in folio	Radiata pine off-cuts; MDF samples; Safety contract forms; OnGuard quiz links; example Desk Tidies
2	• Timber preparation and marking-out techniques • Accurate measuring using steel rule and try square • Basic cutting and sanding skills	• Teacher demo: measure and mark pine slat (200 × 20 × 10 mm) • Students practice marking-out and cutting one pine slat to specification • Sanding practice on practice off-cuts, record dimensional accuracy	Rulers; try squares; marking gauges; tenon saws; sandpaper; measuring accuracy worksheet
3	• Creative concept generation and sketching • Design brief, criteria development	• Folio activity: sketch four Desk Tidy layout concepts, annotate dimensions • Peer-review: evaluate each concept against function, aesthetics, material use • Select one concept for development	Folio sketch sheets; pencils; erasers; criteria checklist worksheet; sample concept sketches
4	• Research ATSI woodworking traditions and sustainability • Annotated research in design folio	• Case-study reading on Aboriginal and Torres Strait Islander timber use • Students annotate key principles and propose sustainable timber sources (e.g., FSC-certified pine)	ATSI case-study printouts; sustainability article excerpts; internet research devices; annotation guides

		• Group discussion on sourcing local vs. imported materials	
5	• Develop detailed working drawings (orthographic & isometric) • Compile full materials and cutting list	• Technical drawing workshop: scale 1:10 orthographic views with dimensions • Create cutting list table: part name, quantity, material, exact dimensions • Teacher checks accuracy before production	Drawing paper; T-square; drawing pencils; cutting-list template; scale rulers
6	• Production planning and time management	• Create Gantt chart: schedule tasks from marking to finishing for Desk Tidy build • Identify tool and resource allocation, set milestones • Discuss contingency planning for delays	Gantt chart template; sequencing worksheets; planning checklist
7	• Execute production – marking, cutting, drilling and basic joints	• Students mark and cut all Desk Tidy parts to specified dimensions • Demonstrate and practise butt and rebate joints using chisels and block plane • Drill holes for dowel insertion as per drawing	Bench hooks; chisels; block planes; pillar drill; dowel rods; safety checksheet
8	• Assemble components; gluing and clamping techniques • Surface preparation for finishing	• Apply PVA glue and assemble sides to base, clamp until set • Sand all surfaces progressively (80→120→240 grit) • Record assembly photos in folio for process evidence	PVA glue; bar and F-clamps; sanding blocks; sandpaper sets; camera/tablet for photos

9	• Finishing and functional testing • Evaluation against design criteria	• Apply one coat of water-based clear varnish to Desk Tidy • Students conduct functional test: hold pens, pencils, scissors, paperclips; measure stability • Complete evaluation worksheet: rate performance and justify material/tool choices	Varnish; brushes; functional test kit (stationery items); evaluation rubric; folio evaluation worksheet
10	• Project presentation and reflection • Holistic review of design and production process	• Each student presents their Desk Tidy to class, explaining design features and sustainability trade-offs • Write a reflection journal entry: lessons learned, suggested improvements, skill growth	Presentation rubric; reflection journal template; camera for presentation photos