Wood 3: Advanced Woodworking

Content Area: **Science**
Course(s): **Wood 3**
Time Period: **1st Semester**
Length: **40 weeks**
Status: **Awaiting Review**

Course Overview: Objectives, benchmarking and screening plan

Wood 3 – Course Overview: Objectives, Benchmarking, and Screening Plan

Course Overview

Wood 3 is an advanced woodworking course for students in grades 9–12 who have successfully completed Wood 2 (or equivalent teacher-approved experience). This course is designed for students who are ready to take on more complex, independent, and technically challenging projects. Students deepen their understanding of design, joinery, and finishing, while continuing to refine safe work habits, precision, and professional-level craftsmanship. Emphasis is placed on project planning, problem-solving, advanced tool use, and preparing students for further study or entry-level opportunities in construction, cabinetry, furniture making, or related trades.

Course Objectives

By the end of Wood 3, students will be able to:

1. Consistently demonstrate advanced shop safety practices when using a full range of hand tools, stationary machines, and portable power tools, modeling safe behavior for others in the shop.

2. Design and/or adapt detailed project plans (including measured drawings, cut lists, material estimates, and step-by-step procedures) for complex woodworking projects.

3. Select appropriate materials, hardware, and joinery methods based on project requirements, structural needs, aesthetics, and available tools.

4. Execute advanced joinery and construction techniques (such as more complex dado and rabbet systems, reinforced corner joints, bridle or mortise-and-tenon joints, panel construction, or similar) to produce strong, precise, and visually clean assemblies.

5. Use advanced tool setups and jigs (such as sleds, fences, stops, or templates) to improve accuracy, repeatability, and safety during project construction.

6. Apply a variety of finishing techniques (e.g., sanding sequence, stains, clear finishes, edge treatments) that enhance both appearance and durability, following proper procedures and safety guidelines for finishing materials.

7. Plan and complete one or more major, multi-step projects that demonstrate increased independence, time management, and problem-solving compared to Wood 2.

8. Evaluate and refine their work using professional-style criteria (fit, finish, function, design, and safety) and incorporate feedback to improve current and future projects.

9. Demonstrate advanced employability skills such as leadership in group settings, communication with peers and the instructor, responsibility for workspace and tools, and meeting project deadlines.

Benchmarking Plan

Benchmarking in Wood 3 focuses on growth toward advanced, independent, and industry-aligned performance.

Beginning-of-Course Benchmark (Safety & Skills Review)

- Short written or digital assessment reviewing essential safety and tool use from Wood 2.
- Brief performance task (e.g., constructing a small joint or component to defined tolerances) to gauge starting skill level.
- Review of previous Wood 2 project(s) and teacher observations to identify individual strengths and areas for growth.

Mid-Course Benchmark (Advanced Skills & Project Progress)

- Rubric-based assessment of an in-progress or completed advanced project.
- Focus areas: safe and efficient tool use, accuracy of layout and cuts, complexity and quality of joinery, project organization, and effective use of time.
- Student self-assessment and reflection on challenges, problem-solving strategies, and personal goals for the remainder of the course.

End-of-Course Benchmark (Capstone Project & Professional Standards)

- Final capstone project evaluated with a detailed rubric that addresses:
    - Safety and work habits
    - Complexity and difficulty of design
    - Accuracy, fit, and structural integrity
    - Quality of surface preparation and finish
    - Overall craftsmanship and presentation.
- Optional final safety/tool assessment to confirm mastery at the advanced level.
- Comparison of beginning, mid-course, and final benchmarks to document advanced growth and readiness for further study or work.

Benchmark data will be used to adjust instruction, identify students who would benefit from additional support or challenge, and inform recommendations for advanced coursework or CTE pathways

Course Name, Length, Date of Revision and Curriculum Writer

Course Name: Wood 3: Advanced Woodworking

Length: Full Year (40 weeks)

Date of Revision: 4/13/2026

Curriculum Writer: Catherine Zank

Table of Contents

Unit 1 – Advanced Safety & Skills Refresher (3–4 weeks)
Unit 2 – Advanced Joinery, Jigs, and Complex Techniques (8–10 weeks)
Unit 3 – Independent Furniture Project (12–14 weeks)
Unit 4 – Theater Set Design & Structural Builds (8–10 weeks, aligned with a show if possible)
Unit 5 – Capstone/Portfolio & Leadership (3–4 weeks, can overlap)

Unit 1: Advanced Safety & Skills Refresher

Content Area: **Science**
Course(s): **Wood 3**
Time Period: **1st Marking Period**
Length: **Full Year (40 weeks)**
Status: **Awaiting Review**

Summary of the Unit

In this opening unit, Wood 3 students move from "independent worker" to shop leader. They review and deepen machine safety, demonstrate high-level measurement and joinery skills, and take on mentoring/leadership roles with younger students when possible. The focus is on confirming that all students can work safely and precisely with minimal supervision before beginning more complex, self-directed projects.

By the end of Unit 1, students will be able to:

- Explain and uphold advanced safety expectations for Wood 3, including leadership and mentoring responsibilities.
- Demonstrate safe, proficient use of key woodworking machines without step-by-step prompting.
- Perform accurate, advanced measurement and layout for complex parts.
- Execute a small joinery-based skills check project that meets higher standards of precision and craftsmanship.
- Take on defined leadership roles that support the safety, organization, and learning environment of the shop.

Enduring Understandings

- Advanced woodworking demands consistent, self-directed safety habits and professional behavior.
- Accurate measurement, layout, and joinery are foundations for all higher-level projects.
- Experienced students help shape the safety culture and workflow of the entire shop.

Essential Questions

- What does it mean to be a shop leader, not just a safe worker?
- How do small errors in measurement, layout, or setup affect complex projects later on?
- How can advanced students support the safety and success of Wood 1 and Wood 2 students?

Unit Summative Assessment and Alternate Assessment Options

Unit 1 – Advanced Safety & Skills Refresher (3–4 weeks)

- Advanced safety culture and leadership (Wood 3 students as role models/mentors).
- Quick but focused refreshers on:
  - Machine safety and permissions (narrow only to key tools if you want).
  - PPE, dust, finishing safety (shorter than Wood 2).
- Advanced measurement & layout refresh (angle layouts, story sticks, templates).
- Brief joinery refresh (review from Wood 2, set expectations for higher precision).
- Small skill-check project (e.g., precision box or test panel) to verify readiness for independent work.

Resources

- Updated Wood 3 safety contract / expectations sheet.
- Machine safety checklists from Wood 2 (adapted for advanced use).

- Sample precision “skills test” projects (small box, panel, or fixture).
- OSHA/NIOSH safety posters, school safety policies.
- Example leadership/mentor guidelines.
- Woodshop 3 Resources

Unit Plan

Topic/ Selection Timeframe	General Objectives	Instructional Activities	Assessments
Advanced Safety Contract & Expectations Review: 3-4 weeks	• Explain how expectations for safety and behavior in Wood 3 differ from earlier courses. • Describe what it means to act as a safety leader and mentor in the shop. • Analyze realistic shop scenarios and propose appropriate, safe responses as advanced students. • Commit to at least one personal leadership/safety goal for the course.	Advanced Safety Contract & Expectations Review: Re-establish safety expectations for Wood 3, emphasizing leadership, independent judgment, and mentoring younger students. Warm-Up / Activation • Quick written prompt: “How is your role in the shop different now that you’re in Wood 3?” • Short share-out: ask for examples of how they can model safety for newer students. Distribute & Review Wood 3 Safety Contract • Hand out an updated safety contract or expectations sheet specific to Wood 3. • Highlight key differences from Wood 1/2: Higher standard for self-monitoring and correcting peers respectfully. Expectations for mentoring younger students (when present). More advanced responsibilities (machine setup checks, helping with cleanup leadership, etc.).	• Scenario-based safety quiz or written responses • Signed Wood 3 safety contract with written personal safety/leadership commitments. • Teacher observation of student participation in discussion and ability to articulate leadership expectations.

		Whole-Class Discussion – Safety Leadership • Facilitate discussion around questions such as: “What does ‘professional’ safety behavior look like in this shop?” “How should a Wood 3 student respond when they see unsafe behavior?” • Capture student ideas on the board under categories like: Modeling, Speaking Up, Mentoring, Maintenance. Updated Safety Quiz / Scenario Activity • Administer a short scenario-based quiz or written response set with complex situations (e.g., mixed classes in the shop, multiple machines running, someone rushing near closing bell). • Ask students to write how they would respond as advanced students. Contract Signing & Commitment • Students sign and date the Wood 3 contract. • On the back or separate sheet, they write: One way they will model safety/leadership this year. One specific safety or leadership habit they want to improve.	
Advanced Machine Safety	• Demonstrate safe startup,	Advanced Machine Safety Check & Skills Assessment:	• Machine check-off sheet documenting

Check & Skills Assessment: 3-4 weeks	operation, and shutdown of key machines without step-by-step prompting. • Perform standard operations on scrap with appropriate PPE, stance, and hand positioning. • Identify when they need review or support on a particular machine and seek help appropriately.	Quickly verify and document that Wood 3 students can operate key machines safely and proficiently before more independent work. Review of Key Machines • Briefly list the core machines students are expected to already know (e.g., table saw, miter saw, jointer, planer, router table, bandsaw, drill press). • Clarify any new or upgraded operations for Wood 3 (e.g., more complex setups, jigs, dados, resawing on bandsaw if appropriate). Station Rotations – Safety Focused • Set up stations at key machines with short, focused check-offs: Students must: ▪ Perform a visual inspection (guards, fences, cords, dust ports). ▪ Walk through startup/shutdown verbally. ▪ Demonstrate one or two standard operations on scrap under supervision. • Use a Wood 3 Machine Check-Off Sheet to record results. Targeted Re-Teaching (As	each student's safe operation of required tools. • Teacher observation rubric for PPE use, setup, and control during brief operations. • Notes on any required re-teaching and successful re-checks.

		Needed) • For any student who struggles or forgets a procedure, provide brief re-teaching and require a re-check before independent use. • Option: create a short "refresher practice" assignment for specific machines. Skills Snapshot • Record which students are cleared for independent or semi-independent use of each machine. • Use this list to plan extra support or limits for early projects if needed.	
Precision Measurement & Layout Tune-Up: 3-4 weeks	• Read and mark precise measurements, including mixed fractions and offsets, on project stock. • Use story sticks, reference faces, and centerlines to maintain consistency across multiple parts. • Lay out simple angles and repeated features accurately using appropriate tools.	Precision Measurement & Layout Tune-Up: Refresh and push students' measurement and layout skills beyond Wood 2, including angles, story sticks, and layout for more complex parts. Warm-Up Measurement Challenge • Give a quick set of 3–5 advanced measurement questions: mixed fractions, offset layouts, simple angle markings. • Review common errors and where they show up in real projects (out-of-square carcasses, rocking tables, misaligned joinery). Mini-Lessons – Advanced Layout Techniques	• Short measurement/layout quiz or challenge sheet. • Teacher review of student layout work on scrap/practice boards for accuracy and clarity. • Performance task (e.g., precision plate or mock-up layout) checked against given dimensions/tolerances.

	• Explain how layout decisions affect fit and alignment in more complex projects.	• Short demos (10–15 minutes each):
		  ○ Using a story stick to transfer repeated measurements without re-measuring.
		  ○ Laying out simple angles with a bevel gauge and protractor.
		  ○ Centerlines and reference faces/edges for complex parts.
		• Emphasize referencing from the same face to avoid accumulated error.
		
		Precision Layout Practice
		
		• On scrap or practice boards, students:
		  ○ Create a simple layout involving multiple repeated measurements (e.g., chair rungs, slats, or shelf pin locations).
		  ○ Lay out a simple angled part using a template or bevel gauge.
		• Teacher checks for neat, accurate marking and consistent referencing.
		
		Short Performance Task
		
		• Assign a small “precision plate” task, such as:	

		○ Laying out a pattern of holes or mortises that must align. ○ Laying out the parts for a small mock-up (e.g., leg and rail locations) on a board. • Use this as a baseline for later advanced joinery and projects.	
Advanced Joinery Refresher – Skills Check Project: 3-4 weeks	• Review and describe appropriate uses for major joints from Wood 2. • Execute at least one small project (box, panel, or similar) using upgraded joinery quality standards. • Evaluate their own joint quality in terms of fit, squareness, and appearance. • Identify specific joinery skills they need to improve for upcoming advanced projects.	Advanced Joinery Refresher – Skills Check Project: Review key joints from Wood 2 at a higher standard and verify that students can execute them cleanly as a foundation for advanced projects. Joinery Review Discussion • As a class, list joints from Wood 2: mortise & tenon, rabbet/dado, box/finger, dovetail (if used), biscuit, dowel. • Briefly discuss: ○ Where each joint is used. ○ What "advanced-level" quality looks like (tight, square, clean shoulders, etc.). Mini-Demos (Only Where Needed) • Provide short, targeted demos for joints where students feel least confident (quick poll to prioritize). • Focus on one or two	• Completed skills check project graded with a simple rubric (layout accuracy, joint fit, squareness, craftsmanship). • Teacher observation during joinery work, focusing on safe and efficient use of jigs and machines. • Short written self-assessment: one joinery strength and one specific joinery goal for Wood 3.

		process improvements per joint (e.g., better clamping strategies, marking knives instead of pencils, improved jig use).
		
		Skills Check Project – Precision Box or Panel
		
		• Assign a small but demanding project as an advanced skills check, such as:
		  ○ A small box (e.g., keepsake box) featuring upgraded joinery (box/finger or dovetail, plus a rabbeted bottom).
		  ○ A framed panel or door sample using mortise & tenon/dowel joints and a panel groove.
		• Students must:
		  ○ Plan basic dimensions and layout.
		  ○ Execute joints with higher precision than in Wood 2.
		  ○ Aim for tight fits, square assembly, and clean surfaces.
		
		Critique & Self-Assessment
		
		• After completion, hold a short critique session where students examine their own and peers'	

		samples. • Have them identify specific strengths and areas to sharpen before moving into major projects.	

Leadership & Mentoring Roles in the Shop: 3-4 weeks	• Describe specific leadership and mentoring responsibilities appropriate for Wood 3 students.
	
	• Fulfill an assigned leadership role that supports shop safety, cleanliness, or instruction.
	
	• Assist peers or younger students with basic skills while maintaining safe, respectful interactions.
	
	• Reflect on their effectiveness as shop leaders and identify ways to improve.
		Leadership & Mentoring Roles in the Shop: Establish clear roles and routines for Wood 3 students to support shop safety, organization, and (if available) Wood 1/2 classes.
		
		Brainstorm Leadership Tasks
		
		• On the board, ask: "What can experienced students do that helps this shop run safely and smoothly?"
		
		• Build a list together (examples):
		  ○ Leading cleanup teams or zones.
		  ○ Helping younger students with basic measuring or layout.
		  ○ Checking machine setups before class.
		  ○ Helping manage scrap bins, tool inventory, or jig storage.
		
		Define Leadership Roles
		
		• Turn ideas into concrete roles (e.g., Machine Check Captain, Layout Helper, Dust/ Cleanup Lead, Theater Build Lead when in season).
		
		• Write a short description
			• Teacher observation
			
			• Simple leadership participation rubric (consistency, reliability, respectful communication).
			
			• Short reflection prompt: "What did you do in your leadership role this unit, and how did it affect the shop?"

		of each role's responsibilities and limits (clarify that only the teacher authorizes machine use). Assign Rotations • Decide how often roles rotate (weekly, per project, per marking period). • Assign each Wood 3 student at least one leadership role to begin the year. • Have students record their role(s) and responsibilities in notebooks. Practice Mentoring Moments • If you have Wood 1/2 classes, schedule brief times where Wood 3 students: o Demonstrate a simple skill to younger students (measuring, sweeping technique, basic layout). o Help monitor cleanup and tool return. • If no younger classes are available at the same time, simulate mentorship through peer-help routines within Wood 3. Check-Ins & Adjustments • At the end of the unit, discuss what leadership	

		tasks are working well and what needs adjusting. • Update role descriptions and rotations as needed.	

Standards for Course Content Area and Cross Content Standards Addressed

9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
9.3.12.AC.2	Use architecture and construction skills to create and manage a project.
9.3.12.AC.3	Comply with regulations and applicable codes to establish and manage a legal and safe workplace.
9.3.12.AC.6	Read, interpret and use technical drawings, documents and specifications to plan a project.
9.3.12.AC.7	Describe career opportunities and means to achieve those opportunities in each of the Architecture & Construction Career Pathways.
9.3.12.AC-CST.4	Apply scheduling practices to ensure the successful completion of a construction project.
9.3.12.AC-CST.6	Manage relationships with internal and external parties to successfully complete construction projects.
9.3.12.AC-CST.7	Compare and contrast the building systems and components required for a construction project.
9.3.12.AC-CST.8	Demonstrate the construction crafts required for each phase of a construction project.
9.3.12.AC-CST.9	Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.
9.3.12.AC-DES.1	Justify design solutions through the use of research documentation and analysis of data.
9.3.12.AC-DES.3	Describe the requirements of the integral systems that impact the design of buildings.
9.3.12.AC-DES.5	Identify the diversity of needs, values and social patterns in project design, including accessibility standards.
9.3.12.AC-DES.6	Apply the techniques and skills of modern drafting, design, engineering and construction to projects.
9.3.12.AC-DES.8	Apply standards, applications and restrictions pertaining to the selection and use of construction materials, components and assemblies in the project design.

Suggested Modifications for Students with Disabilities, 504 eligible, Multilingual Learners, At Risk Students and Gifted Students

Students with Disabilities / 504-Eligible Students

- Provide clear, step-by-step written directions and visual supports (photos, diagrams, checklists) for safety, procedures, and projects.
- Offer preferential seating and strategic partner/group work for modeling and support.
- Allow extended time on quizzes, projects, and safety check-offs as needed.
- Break multi-step tasks into smaller chunks with interim check-ins.
- Adjust tools, workspace, and project scale to support fine-motor, sensory, and mobility needs (e.g., clamps, jigs, adaptive grips, seated work when appropriate).
- Provide alternative formats for demonstrations and assessments (oral, visual, or recorded responses as appropriate to the IEP/504).
- Pre-teach and re-teach key vocabulary (safety terms, tool names) with visuals.

Multilingual Learners (MLL/ELL)

- Pre-teach essential vocabulary with images, labeled diagrams, and word banks posted in the shop.
- Use clear, concise language and model directions with demonstrations.
- Provide bilingual glossaries, sentence starters, and graphic organizers for reflections and written tasks.
- Allow students to demonstrate understanding through visuals, demonstrations, or brief oral explanations instead of lengthy written responses.
- Encourage peer support and structured partner work, pairing multilingual learners with supportive classmates.
- When possible, provide key documents (safety contract, major project overviews) in the student's home language or with translated summaries.

At-Risk Students

- Establish predictable routines and clear expectations for safety, cleanup, and participation.
- Provide frequent check-ins and positive feedback for on-task behavior and safe choices.
- Offer flexible deadlines when appropriate and provide in-class time to complete key tasks.
- Use highly structured roles and checklists during projects to support organization and follow-through.
- Connect projects to real-world applications (careers, theater productions, home use) to increase engagement.
- Coordinate with counselors/support staff as needed to monitor progress and address barriers to success.

Gifted and Advanced Students

- Offer optional extension tasks (more complex joinery, added design details, or leadership roles in group builds).
- Encourage students to propose small design modifications or custom elements within safety and time limits.
- Allow advanced students to mentor peers on specific skills (measuring, layout, machine setup) under teacher supervision.
- Provide opportunities for deeper research (materials, professional woodworking, set design) and brief presentations or written reflections.
- Differentiate project rubrics to recognize higher levels of complexity, precision, and independence.

Note: All modifications and accommodations should be aligned with students' IEPs, 504 Plans, and district policies, and can be applied flexibly across all units in this course.

Computer Sci Design Thinking

CS.9-12.8.2.12.ED.1	Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers.
CS.9-12.8.2.12.ED.2	Create scaled engineering drawings for a new product or system and make modification to increase optimization based on feedback.
CS.9-12.8.2.12.ED.3	Evaluate several models of the same type of product and make recommendations for a new design based on a cost benefit analysis.
CS.9-12.8.2.12.ED.4	Design a product or system that addresses a global problem and document decisions made based on research, constraints, trade-offs, and aesthetic and ethical considerations and share this information with an appropriate audience.
CS.9-12.8.2.12.ED.5	Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).
CS.9-12.8.2.12.ED.6	Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).
	Engineering design evaluation, a process for determining how well a solution meets requirements, involves systematic comparisons between requirements, specifications, and

	constraints.
	Engineering design is a complex process in which creativity, content knowledge, research, and analysis are used to address local and global problems. Decisions on trade-offs involve systematic comparisons of all costs and benefits, and final steps that may involve redesigning for optimization.

Career Readiness, Life Literacies and Key Skills Practice

9.2.12.CAP.4	Evaluate different careers and develop various plans (e.g., costs of public, private, training schools) and timetables for achieving them, including educational/training requirements, costs, loans, and debt repayment.
9.2.12.CAP.5	Assess and modify a personal plan to support current interests and post-secondary plans.
9.2.12.CAP.6	Identify transferable skills in career choices and design alternative career plans based on those skills.
9.2.12.CAP.7	Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.
9.2.12.CAP.8	Determine job entrance criteria (e.g., education credentials, math/writing/reading comprehension tests, drug tests) used by employers in various industry sectors.
9.2.12.CAP.9	Locate information on working papers, what is required to obtain them, and who must sign them.
9.2.12.CAP.10	Identify strategies for reducing overall costs of postsecondary education (e.g., tuition assistance, loans, grants, scholarships, and student loans).
9.2.12.CAP.11	Demonstrate an understanding of Free Application for Federal Student Aid (FAFSA) requirements to apply for postsecondary education.
	Career planning requires purposeful planning based on research, self-knowledge, and informed choices.

Unit 2: Advanced Joinery, Jigs, and Complex Techniques

Content Area: **Science**
Course(s): **Wood 3**
Time Period: **1st Marking Period**
Length: **8-10 weeks**
Status: **Awaiting Review**

Summary of the Unit

In this unit, students deepen their joinery skills beyond Wood 2 and learn to design and use jigs and fixtures to achieve higher accuracy, repeatability, and safety. They explore more complex joints (such as through tenons, bridle joints, sliding dovetails, and splined miters), experiment with curves and simple bent laminations, and complete one or more structured projects that showcase advanced techniques. The goal is to move students from simply "using joints correctly" to controlling the process and understanding how to engineer strong, efficient, and attractive connections.

By the end of Unit 2, students will be able to:

- Identify, describe, and choose from a range of advanced joints (bridle joints, through tenons, sliding dovetails, splined miters, half-laps, etc.) for specific design and strength needs.
- Design, build, and safely use simple jigs and fixtures to improve accuracy, repeatability, and safety.
- Plan and execute curved components using templates and pattern routing (and simple bent laminations if available).
- Complete at least one structured advanced project that demonstrates higher-level joinery, jig use, and craftsmanship in preparation for independent Wood 3 projects.

Enduring Understandings

- Advanced joinery combines strength, appearance, and build efficiency; no single joint is "best" in every situation.
- Jigs and fixtures improve safety, accuracy, and repeatability and are essential tools in professional shops.
- Curves, laminations, and more complex assemblies require careful planning and layout to succeed.

Essential Questions

- How do I choose an advanced joint that balances strength, looks, and time for a specific design?
- When is it worth building a jig or fixture instead of cutting a part freehand or by eye?
- How can I safely introduce curves, laminations, or complex assemblies into my projects without losing accuracy?

Unit Summative Assessment and Alternate Assessment Options

- Casework upgrades: through tenons, sliding dovetails, bridle joints, multi-part assemblies.
- Jigs/fixtures for repeatable accuracy: spline jigs, taper jigs, box/dovetail jig refinement, circle cutting, pattern routing jigs.
- Curves & laminations: simple bent laminations, pattern routing for curved parts.
- One or two structured advanced projects (e.g., small table with curved aprons, decorative box with splined corners, wall cabinet with upgraded joinery).

Resources

- Advanced joinery reference charts/books.
- Sample joints: through tenons, bridle joints, sliding dovetails, splined miters, miters with keys, etc.
- Example jigs: taper jigs, spline jigs, box joint/dovetail jigs, circle-cutting jigs, pattern-routing jigs.
- Videos or diagrams showing bent lamination and pattern routing.
- Manufacturer manuals for router bits, dado sets, and specialty cutters.
- Woodshop 3 Resources

Unit Plan

Topic/Selection Timeframe	General Objectives	Instructional Activities	Assessments
Advanced Joinery Demonstrations: 8-10 weeks	• Identify and describe advanced joints such as bridle joints, through tenons, sliding dovetails, splined miters, and half-laps. • Explain where each advanced joint is typically used and what advantages it offers (strength, appearance, or both). • Outline the basic layout and cutting steps for at least two advanced joints demonstrated in class.	Advanced Joinery Demonstrations:Introduce and model several advanced joint types so students understand when and how to use them in furniture and casework. Intro & Prior Knowledge Check • Quick discussion: "Which joints from Wood 2 do you feel you've mastered? Where do you want to level up?" • On the board, list Wood 2 joints and add new ones for Wood 3 (e.g., bridle joint, through tenon, sliding dovetail, splined miter, half-lap variations). Bridle Joints & Through Tenons • Show examples (photos or samples) of bridle joints and through tenons used in table legs, frames, and chair rails. • Demonstrate step-by-step:	• Labeling or matching activity • Short written or oral response • Informal questioning

		○ Layout: marking shoulders, cheeks, and through tenon end. ○ Cutting methods (table saw with tenoning jig, bandsaw, router, or hand tools depending on your shop). ○ Fitting and cleanup (chisels, shoulder plane, sanding block). • Discuss: where a through tenon might be shown off for decorative effect vs. hidden. Sliding Dovetails (If Appropriate for Your Shop) • Show where sliding dovetails are used (shelves into case sides, stretchers into legs). • Demonstrate: ○ Laying out socket and tail. ○ Cutting the socket with router/router table and a dovetail bit. ○ Cutting the tail on the mating part, using fences/stops for	

		repeatability. • Emphasize test cuts, depth control, and avoiding too-tight fits that split parts. Splined Miters / Miter Keys • Show plain miter joints and how easily they fail; contrast with splined or keyed miters. • Demonstrate: o Cutting accurate 45° miters. o Using a spline jig or miter key jig to cut slots across the corner. o Gluing and inserting splines/keys for strength and decoration. Half-Laps and Variations • Show standard half-lap joints used in frames, bases, and stretchers. • Demonstrate cutting half-laps on the table saw with a dado stack or multiple passes, using stop blocks for consistent depth and length.	

Jigs & Fixtures – Design and Use:8-10 weeks	• Explain how jigs and fixtures improve safety, accuracy, and repeatability in woodworking. • Identify key safety considerations when designing and using a jig. • Design and build a simple jig or fixture for a specific task in the shop. • Safely test and refine their jig to produce consistent, accurate results.	Jigs & Fixtures – Design and Use:Teach students to design, build, and safely use simple jigs and fixtures to improve accuracy, repeatability, and safety. Jig Overview & Examples • Show several jigs/fixtures from your shop (or photos): ○ Taper jig, crosscut sled, spline/miter key jig, circle-cutting jig, pattern-routing jig, drill press jig, etc. • Ask: "What does this jig do that would be hard or unsafe to do freehand?" • Discuss when building a jig is worth the time versus when it's overkill. Safety & Design Principles for Jigs • Brief mini-lesson: ▪ Keep hands away from blades/bits. ▪ Use positive registration (fences, stops, reference faces). ▪ Secure workpieces with clamps/hold-downs where	• Jig plan/sketch • Teacher observation • Completed jig graded on functionality • Short reflection

		possible. ▪ Use durable materials and keep hardware tight. • Emphasize that jigs must be approved and tested by the teacher before full use. Teacher-Demonstrated Jigs • Demonstrate 1–2 key jigs in detail, such as: o A spline or miter key jig for strengthening mitered corners. o A taper jig for cutting angled table legs or rails. o A pattern-routing jig for identical curved parts. • Show step-by-step setup, operation, and safe body/hand positions. Student Jig Mini-Project • Assign each student (or pair) to build a simple jig that they will later use in a project, such as: o A small crosscut sled or dedicated cutoff jig. o A spline/miter	

		key jig for box corners. ○ A pattern-routing jig for a project part. • Requirements: ○ Sketch or simple plan for the jig. ○ Clear statement of what it does and which machine it's for. ○ Basic safety considerations noted. Testing & Refinement • Students test their jigs on scrap under teacher supervision. • They adjust stops, fences, or clamps as needed for accuracy and safety. • Teacher signs off on jigs that are safe and effective for use in later projects.	

Curves and Simple Bent Laminations (If Available): 8-10 weeks	• Describe several methods for creating curved parts in woodworking.
	
	• Design and create a template for a simple curved part.
	
	• Safely cut and refine curved parts using the bandsaw and/or router with a template.
	
	• (If applicable) Explain the basic concept of bent lamination and its advantages for strength and design.
		Curves and Simple Bent Laminations (If Available): Introduce safe methods for creating curves and simple bent laminations to expand design possibilities beyond straight lines.
		
		Curves Overview
		
		• Show examples of curved parts in furniture (chair backs, table aprons, handles, arches).
		
		• Discuss different ways to create curves:
		  ○ Cutting to a line on bandsaw/jigsaw and sanding to the line.
		  ○ Using templates and pattern routing.
		  ○ Bent laminations on forms (if your shop supports this safely).
		
		Template & Pattern Routing Demo
		
		• Demonstrate how to:
		  ○ Draw a pleasing curve on a template (MDF or plywood) using flexible batten or French curves.
		  ○ Cut and fair the template to a smooth line.
			• Teacher review of student templates and practice
			
			• Observation of safe use of bandsaw/router during curve cutting and pattern routing.
			
			• Short written or oral explanation

		○ Rough cut project parts slightly oversize on the bandsaw. ○ Use a router with a bearing-guided bit and the template to flush-trim parts identically. Bent Lamination Demo (Optional) • If appropriate and safe in your shop, demonstrate a simple bent lamination: ○ Prepare thin laminations from straight-grained stock. ○ Use a form and clamps to glue and bend laminations. ○ Emphasize glue selection, grain direction, and clamping sequence. • If your shop cannot support lamination, you can keep Unit 2 curves to templates and pattern routing. Student Curve Practice • Students design a small curved element (e.g., curved rail, handle, decorative stretchers). • They create a template, cut a practice part, and	

		refine it with pattern routing or sanding jigs.	
Structured Advanced Project (e.g., Small Table, Wall Cabinet, or Decorative Box): 8-10 weeks	• Plan and build a small project using at least one advanced joint and one jig or fixture. • Execute advanced joinery and jig-based cuts accurately enough to produce a stable, well-fitted project. • Evaluate the effectiveness of their chosen joints and jigs in terms of strength, accuracy, and efficiency. • Describe how these advanced techniques will inform their later independent projects.	Structured Advanced Project (e.g., Small Table, Wall Cabinet, or Decorative Box): Have students apply advanced joinery, jigs, and/or curves to a teacher-guided project before moving into fully independent builds. Project Options & Requirements • Present 1–2 structured project options designed to use advanced techniques from this unit, such as: ○ Small table with tapered or curved legs and bridle/through-tenon joinery. ○ Wall cabinet with sliding dovetail shelves or through tenons. ○ Decorative box with splined miters and a raised/lifted lid using a jig. • Requirements might include: ○ At least one advanced joint demonstrated in Unit 2. ○ Use of at least one jig (teacher-made or student-made).	• Project-specific rubric assessing: ○ Planning and layout (drawings, cut list, joinery/jig choices). ○ Joint quality and structural integrity. ○ Jig use and evidence of safer, more accurate cutting. ○ Overall craftsmanship and basic surface prep. • Teacher checkpoints • Short written reflection on advanced techniques

		○ Optional curved or laminated component if feasible. Planning & Layout • Students complete simple drawings and a cut list for the chosen project (less detailed than the big independent project, but still planned). • They identify where advanced joints and jigs will be used and note them on their plans. Build Process • Students follow a guided sequence: ○ Cut and prepare stock. ○ Cut advanced joints with appropriate jigs and machines. ○ Assemble with dry fits and teacher checkpoints. ○ Glue-up and basic surface prep. • The teacher circulates, providing targeted coaching on advanced techniques. Reflection & Connection to Future Work • After completion,	

		students reflect on: o Which advanced techniques they used. o How their jig(s) or joints could be improved. o How these skills will carry into their independent Wood 3 projects.	

Standards for Course Content Area and Cross Content Standards Addressed

ELA.L.SS.6.1.A	Ensure that pronouns are in the proper case (subjective, objective, possessive).
9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
9.3.12.AC.2	Use architecture and construction skills to create and manage a project.
9.3.12.AC.3	Comply with regulations and applicable codes to establish and manage a legal and safe workplace.
9.3.12.AC.6	Read, interpret and use technical drawings, documents and specifications to plan a project.
9.3.12.AC-CST.1	Describe contractual relationships between all parties involved in the building process.
9.3.12.AC-CST.2	Describe the approval procedures required for successful completion of a construction project.
9.3.12.AC-CST.3	Implement testing and inspection procedures to ensure successful completion of a construction project.
9.3.12.AC-CST.7	Compare and contrast the building systems and components required for a construction project.
9.3.12.AC-CST.8	Demonstrate the construction crafts required for each phase of a construction project.
9.3.12.AC-CST.9	Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.
9.3.12.AC-DES.1	Justify design solutions through the use of research documentation and analysis of data.
9.3.12.AC-DES.2	Use effective communication skills and strategies (listening, speaking, reading, writing and graphic communications) to work with clients and colleagues.
9.3.12.AC-DES.3	Describe the requirements of the integral systems that impact the design of buildings.
9.3.12.AC-DES.4	Apply building codes, laws and rules in the project design.
9.3.12.AC-DES.5	Identify the diversity of needs, values and social patterns in project design, including accessibility standards.

Suggested Modifications for Students with Disabilities, 504 eligible, Multilingual Learners, At Risk Students and Gifted Students

Students with Disabilities / 504-Eligible Students

- Provide clear, step-by-step written directions and visual supports (photos, diagrams, checklists) for safety, procedures, and projects.
- Offer preferential seating and strategic partner/group work for modeling and support.
- Allow extended time on quizzes, projects, and safety check-offs as needed.
- Break multi-step tasks into smaller chunks with interim check-ins.
- Adjust tools, workspace, and project scale to support fine-motor, sensory, and mobility needs (e.g., clamps, jigs, adaptive grips, seated work when appropriate).
- Provide alternative formats for demonstrations and assessments (oral, visual, or recorded responses as appropriate to the IEP/504).
- Pre-teach and re-teach key vocabulary (safety terms, tool names) with visuals.

Multilingual Learners (MLL/ELL)

- Pre-teach essential vocabulary with images, labeled diagrams, and word banks posted in the shop.
- Use clear, concise language and model directions with demonstrations.
- Provide bilingual glossaries, sentence starters, and graphic organizers for reflections and written tasks.
- Allow students to demonstrate understanding through visuals, demonstrations, or brief oral explanations instead of lengthy written responses.
- Encourage peer support and structured partner work, pairing multilingual learners with supportive classmates.
- When possible, provide key documents (safety contract, major project overviews) in the student's home language or with translated summaries.

At-Risk Students

- Establish predictable routines and clear expectations for safety, cleanup, and participation.
- Provide frequent check-ins and positive feedback for on-task behavior and safe choices.
- Offer flexible deadlines when appropriate and provide in-class time to complete key tasks.
- Use highly structured roles and checklists during projects to support organization and follow-through.
- Connect projects to real-world applications (careers, theater productions, home use) to increase engagement.
- Coordinate with counselors/support staff as needed to monitor progress and address barriers to success.

Gifted and Advanced Students

- Offer optional extension tasks (more complex joinery, added design details, or leadership roles in group builds).
- Encourage students to propose small design modifications or custom elements within safety and time limits.
- Allow advanced students to mentor peers on specific skills (measuring, layout, machine setup) under teacher supervision.
- Provide opportunities for deeper research (materials, professional woodworking, set design) and brief presentations or written reflections.
- Differentiate project rubrics to recognize higher levels of complexity, precision, and independence.

Note: All modifications and accommodations should be aligned with students' IEPs, 504 Plans, and district policies, and can be applied flexibly across all units in this course.

Computer Sci Design Thinking

CS.9-12.8.2.12.ED.1	Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers.
CS.9-12.8.2.12.ED.2	Create scaled engineering drawings for a new product or system and make modification to increase optimization based on feedback.

CS.9-12.8.2.12.ED.3	Evaluate several models of the same type of product and make recommendations for a new design based on a cost benefit analysis.
CS.9-12.8.2.12.ED.4	Design a product or system that addresses a global problem and document decisions made based on research, constraints, trade-offs, and aesthetic and ethical considerations and share this information with an appropriate audience.
CS.9-12.8.2.12.ED.5	Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).
CS.9-12.8.2.12.ED.6	Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).
CS.9-12.ED	Engineering Design Engineering design evaluation, a process for determining how well a solution meets requirements, involves systematic comparisons between requirements, specifications, and constraints. Engineering design is a complex process in which creativity, content knowledge, research, and analysis are used to address local and global problems. Decisions on trade-offs involve systematic comparisons of all costs and benefits, and final steps that may involve redesigning for optimization.

Career Readiness, Life Literacies and Key Skills Practice

9.2.12.CAP.4	Evaluate different careers and develop various plans (e.g., costs of public, private, training schools) and timetables for achieving them, including educational/training requirements, costs, loans, and debt repayment.
9.2.12.CAP.5	Assess and modify a personal plan to support current interests and post-secondary plans.
9.2.12.CAP.6	Identify transferable skills in career choices and design alternative career plans based on those skills.
9.2.12.CAP.7	Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.
9.2.12.CAP.8	Determine job entrance criteria (e.g., education credentials, math/writing/reading comprehension tests, drug tests) used by employers in various industry sectors.
9.2.12.CAP.9	Locate information on working papers, what is required to obtain them, and who must sign them.
9.2.12.CAP.10	Identify strategies for reducing overall costs of postsecondary education (e.g., tuition assistance, loans, grants, scholarships, and student loans).
9.2.12.CAP.11	Demonstrate an understanding of Free Application for Federal Student Aid (FAFSA) requirements to apply for postsecondary education. Career planning requires purposeful planning based on research, self-knowledge, and informed choices.

Unit 3: Independent Furniture Project

Content Area: **Science**
Course(s): **Wood 3**
Time Period: **3rd Marking Period**
Length: **2-4 weeks**
Status: **Awaiting Review**

Summary of the Unit

In this unit, students design or adapt a substantial independent furniture project and carry it from planning through final finish. They are responsible for drawings, cut lists, joinery choices, timelines, and finishing plans, with the teacher acting more as a coach than a director. The focus is on independence, complexity, and craftsmanship, building on all previous units.

By the end of Unit 3, students will be able to:

- Design or adapt a substantial furniture project within given constraints.
- Produce and follow a complete planning packet (drawings, cut list, joinery plan, timeline, finishing plan).
- Independently execute major construction steps while maintaining safety and craftsmanship.
- Apply a multi-step finishing schedule appropriate to the design and intended use.
- Reflect thoughtfully on their process, decisions, and growth as advanced woodworkers.

Enduring Understandings

- Successful advanced projects require clear planning, disciplined execution, and ongoing problem-solving.
- Design, joinery, material selection, and finishing must all work together for a piece to be functional, strong, and attractive.
- Independent work still happens within a safe, shared shop environment, with responsibility to others.

Essential Questions

- How do I plan a project that is ambitious but realistic within our time and resource limits?
- How do my choices about joinery, materials, and finish affect the life and use of a piece?
- What habits and systems help me manage a long, complex build with fewer teacher reminders?

Unit Summative Assessment and Alternate Assessment Options

Independent Furniture Project

- Main student-choice furniture project for the year.
- Big focus on planning, documentation, and finish quality.
- Very similar structure to Wood 2 Unit 7, but your rubric expectations shift up (more independence, complexity, and polish).

Resources

- Furniture plans and design books/sites.
- Previous student projects (photos or samples).
- Project planning templates (drawings + cut list + timeline).
- Joinery and finishing references from Units 2 and 6.
- Woodshop 3 Resources

Unit Plan

Topic/Selection Timeframe	General Objectives	Instructional Activities	Assessments
Project Selection & Design Brief:	• Propose an independent furniture project that is appropriate for their skill level and course constraints. • Describe the purpose, user, and main features of their project. • Identify potential challenges and discuss them with the teacher before committing. • Revise their project idea based on feedback.	Project Selection & Design Brief: Help students choose an independent furniture project that is challenging, realistic, and clearly defined. Inspiration & Possibilities • Show examples of independent-level projects (from your shop or online): o Nightstands, coffee tables, small chairs or stools, cabinets, storage benches, desks, etc. • Discuss what makes a project Wood 3 level (complex joinery, more parts, higher polish, or a design twist). Project Requirements & Constraints • Outline expectations for the independent project: o Size range and time frame. o Minimum joinery expectations (e.g., at least one advanced joint from Unit 2). o Structural requirements (must be safe, stable, and functional). o Level of originality or adaptation allowed (original design vs. modified plan).	• Written project proposal forms • Teacher conference notes confirming feasibility and needed adjustments. • Revised proposals (if required) showing that feedback was incorporated.

		Student Brainstorm & Proposal Draft
		• Students brainstorm 2–3 project ideas with quick sketches and notes on use, size, and features.
		• They choose one idea and draft a Project Proposal including:
		  ○ Name/purpose of the piece.
		  ○ Who it's for and where it will be used.
		  ○ Rough size and main features.
		  ○ Known challenges (e.g., curved parts, extra drawers, complex joinery).
		Teacher Conference & Approval
		• Hold short one-on-one conferences to review proposals for feasibility.
		• Approve, ask for modifications, or suggest a simpler/more focused version.
		• Students revise proposals as needed and resubmit if required.	

Detailed Planning: Drawings, Cut List, Joinery & Timeline:8-10 Weeks	• Produce clear, dimensioned drawings that fully describe their project. • Create an accurate cut list and	Detailed Planning: Drawings, Cut List, Joinery & Timeline: Require students to create a complete planning packet that will guide their build with minimal guesswork. Scaled Drawings • Students create more detailed drawings for their	• Planning packet graded with a checklist • Teacher conference assessing the student's ability to verbally walk

	material estimate from their drawings. • Choose and document appropriate joinery and hardware for each part of the project. • Develop a logical build sequence and timeline and use it to guide their work.	approved project: ○ Front, side, and top views with key dimensions. ○ Additional detail or section views where needed (e.g., drawer boxes, joinery close-ups). • Encourage the use of graph paper or simple digital tools if available. Cut List & Material Plan • From drawings, students produce a cut list including: ▪ Part name, quantity, thickness, width, length, material/species. • Students create a simple material estimate (board feet or sheet usage) and note any special pieces (legs, wide panels, contrasting woods). Joinery & Hardware Plan • Students mark on their drawings where and what type of joints will be used (e.g., mortise & tenon, sliding dovetail, box joint, dowels, etc.). • If the project includes doors/drawers, they identify hinge and slide types and note basic clearances. Build Sequence & Timeline • Students outline a build sequence (milling →	through their plan. • Evidence of revisions made in response to feedback.

		cutting parts to size → joinery → dry fit → glue-up → surface prep → finish → hardware). • They sketch a rough timeline over weeks or class periods with checkpoints and due dates. Teacher Review & Sign-Off • Teacher reviews each planning packet and either approves or returns with specific changes to make. • Students may not begin cutting project wood until their plan is signed off.	
Build Process: Independent Work with Checkpoints: 8-10 Weeks	• Follow their own plan to mill, cut, and assemble project parts safely and efficiently. • Meet build checkpoints on time or adjust their plans with teacher approval. • Use problem-solving strategies to fix mistakes or adapt their design while maintaining quality and safety.	Build Process: Independent Work with Checkpoints: Support students as they independently execute their build, using checkpoints to ensure safety, progress, and quality. Checkpoint Structure • Post or hand out a simple checklist of required build checkpoints, such as: ○ Rough milling complete. ○ All parts cut to final size and labeled. ○ All major joinery cut. ○ Full dry fit approved. ○ Final glue-up complete. ○ Surface prep complete (ready for	• Checkpoint sheets showing timely completion of each major stage. • Teacher observation notes on independence, safety, and problem-solving. • Informal mid-unit progress review where students explain what they've completed and what's next.

	• Maintain organized work habits (labeled parts, clean work area, tool care) throughout a long build.	finish). Independent Work Time • Students work through their sequences at their own pace, within overall unit deadlines. • Teacher circulates to: o Monitor safety and appropriate tool use. o Answer questions and coach problem-solving. o Initial checkpoint sheets as milestones are reached. Problem-Solving & Adjustments • Encourage students to document significant changes (e.g., simplified joinery, slight size changes due to mistakes) on their drawings or in notes. • When a problem occurs, prompt students to: o Identify what went wrong. o Brainstorm at least 2 possible fixes. o Choose a solution and carry it out safely. Peer Support (Optional) • Allow limited, structured peer support (e.g., helping with glue-ups, extra hands for clamping) while keeping responsibility with	

		the project owner.	
Finishing & Final Detailing: 8-10 Weeks	• Follow or appropriately adjust a finishing plan to complete their independent project. • Apply multiple coats of finish with acceptable evenness and coverage. • Install and adjust hardware for smooth function and safe use. • Evaluate their finished project for overall craftsmanship and completeness.	Finishing & Final Detailing (Linked to Unit 6 Skills):Have students apply a finish and final touches that match the level of the build and their written finishing plan. Finish Plan Review • Students revisit or finalize their finishing plans (products, number of coats, sanding sequence between coats). • Teacher reviews briefly for feasibility and safety. Surface Prep & Application • Students perform final sanding, defect filling, and dust removal. • Apply finishes according to plan: ○ First coat (stain/dye/paint/clear). ○ Intermediate sanding or scuffing. ○ Second/third coats as needed. • Record products used and coat count on a small finishing log. Hardware & Adjustments • Install hardware (hinges, pulls, slides, feet) as planned. • Make small adjustments for fit (e.g., planing sticky doors, adjusting drawer	• Teacher evaluation of finish quality using a finishing rubric (evenness, coverage, appropriateness, defect management). • Check of hardware installation for proper alignment and function. • Comparison of actual finishing steps taken to the written plan.

		slides, leveling feet).	
Reflection & Self-Evaluation: 8-10 Weeks	• Identify strengths and weaknesses in their design, build, and finishing processes. • Describe specific skills and strategies they improved during the project. • Set at least one personal goal for future woodworking or design work.	Reflection & Self-Evaluation: Have students analyze their own work, process, and growth through the independent project. Written Reflection • Students respond to prompts such as: o What are you most proud of in this project? o Where did you struggle, and how did you handle it? o If you built this again, what would you change in the design, joinery, or process? o What skills from this project will help you in future work or courses? Optional Mini-Presentation • Students do a quick informal share-out or "shop talk" describing their independent project to classmates.	• Collected written reflections evaluated for thoughtfulness and specificity. • Optional short presentation checklist for clarity and use of woodworking vocabulary.

Standards for Course Content Area and Cross Content Standards Addressed

9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
9.3.12.AC.2	Use architecture and construction skills to create and manage a project.
9.3.12.AC.3	Comply with regulations and applicable codes to establish and manage a legal and safe workplace.
9.3.12.AC.5	Describe the roles, responsibilities, and relationships found in the architecture and construction trades and professions, including labor/management relationships.
9.3.12.AC.6	Read, interpret and use technical drawings, documents and specifications to plan a project.
9.3.12.AC-CST.1	Describe contractual relationships between all parties involved in the building process.

9.3.12.AC-CST.2	Describe the approval procedures required for successful completion of a construction project.
9.3.12.AC-CST.5	Apply practices and procedures required to maintain jobsite safety.
9.3.12.AC-CST.7	Compare and contrast the building systems and components required for a construction project.
9.3.12.AC-CST.8	Demonstrate the construction crafts required for each phase of a construction project.
9.3.12.AC-CST.9	Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.
9.3.12.AC-DES.1	Justify design solutions through the use of research documentation and analysis of data.
9.3.12.AC-DES.2	Use effective communication skills and strategies (listening, speaking, reading, writing and graphic communications) to work with clients and colleagues.
9.3.12.AC-DES.3	Describe the requirements of the integral systems that impact the design of buildings.
9.3.12.AC-DES.4	Apply building codes, laws and rules in the project design.
9.3.12.AC-DES.5	Identify the diversity of needs, values and social patterns in project design, including accessibility standards.
9.3.12.AC-DES.6	Apply the techniques and skills of modern drafting, design, engineering and construction to projects.
9.3.12.AC-DES.7	Employ appropriate representational media to communicate concepts and project design.
9.3.12.AC-DES.8	Apply standards, applications and restrictions pertaining to the selection and use of construction materials, components and assemblies in the project design.

Suggested Modifications for Students with Disabilities, 504 eligible, Multilingual Learners, At Risk Students and Gifted Students

Students with Disabilities / 504-Eligible Students

- Provide clear, step-by-step written directions and visual supports (photos, diagrams, checklists) for safety, procedures, and projects.
- Offer preferential seating and strategic partner/group work for modeling and support.
- Allow extended time on quizzes, projects, and safety check-offs as needed.
- Break multi-step tasks into smaller chunks with interim check-ins.
- Adjust tools, workspace, and project scale to support fine-motor, sensory, and mobility needs (e.g., clamps, jigs, adaptive grips, seated work when appropriate).
- Provide alternative formats for demonstrations and assessments (oral, visual, or recorded responses as appropriate to the IEP/504).
- Pre-teach and re-teach key vocabulary (safety terms, tool names) with visuals.

Multilingual Learners (MLL/ELL)

- Pre-teach essential vocabulary with images, labeled diagrams, and word banks posted in the shop.
- Use clear, concise language and model directions with demonstrations.
- Provide bilingual glossaries, sentence starters, and graphic organizers for reflections and written tasks.
- Allow students to demonstrate understanding through visuals, demonstrations, or brief oral explanations instead of lengthy written responses.
- Encourage peer support and structured partner work, pairing multilingual learners with supportive classmates.
- When possible, provide key documents (safety contract, major project overviews) in the student's home language or with translated summaries.

At-Risk Students

- Establish predictable routines and clear expectations for safety, cleanup, and participation.
- Provide frequent check-ins and positive feedback for on-task behavior and safe choices.

- Offer flexible deadlines when appropriate and provide in-class time to complete key tasks.
- Use highly structured roles and checklists during projects to support organization and follow-through.
- Connect projects to real-world applications (careers, theater productions, home use) to increase engagement.
- Coordinate with counselors/support staff as needed to monitor progress and address barriers to success.

Gifted and Advanced Students

- Offer optional extension tasks (more complex joinery, added design details, or leadership roles in group builds).
- Encourage students to propose small design modifications or custom elements within safety and time limits.
- Allow advanced students to mentor peers on specific skills (measuring, layout, machine setup) under teacher supervision.
- Provide opportunities for deeper research (materials, professional woodworking, set design) and brief presentations or written reflections.
- Differentiate project rubrics to recognize higher levels of complexity, precision, and independence.

Note: All modifications and accommodations should be aligned with students' IEPs, 504 Plans, and district policies, and can be applied flexibly across all units in this course.

Computer Sci Design Thinking

CS.9-12.8.2.12.ED.1	Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers.
CS.9-12.8.2.12.ED.2	Create scaled engineering drawings for a new product or system and make modification to increase optimization based on feedback.
CS.9-12.8.2.12.ED.3	Evaluate several models of the same type of product and make recommendations for a new design based on a cost benefit analysis.
CS.9-12.8.2.12.ED.4	Design a product or system that addresses a global problem and document decisions made based on research, constraints, trade-offs, and aesthetic and ethical considerations and share this information with an appropriate audience.
CS.9-12.8.2.12.ED.5	Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).
CS.9-12.8.2.12.ED.6	Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).
CS.9-12.ED	Engineering Design
	Engineering design evaluation, a process for determining how well a solution meets requirements, involves systematic comparisons between requirements, specifications, and constraints.
	Engineering design is a complex process in which creativity, content knowledge, research, and analysis are used to address local and global problems. Decisions on trade-offs involve systematic comparisons of all costs and benefits, and final steps that may involve redesigning for optimization.

Career Readiness, Life Literacies and Key Skills Practice

9.2.12.CAP.4	Evaluate different careers and develop various plans (e.g., costs of public, private, training schools) and timetables for achieving them, including educational/training requirements, costs, loans, and debt repayment.
9.2.12.CAP.5	Assess and modify a personal plan to support current interests and post-secondary plans.

9.2.12.CAP.6	Identify transferable skills in career choices and design alternative career plans based on those skills.
9.2.12.CAP.7	Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.
9.2.12.CAP.8	Determine job entrance criteria (e.g., education credentials, math/writing/reading comprehension tests, drug tests) used by employers in various industry sectors.
9.2.12.CAP.9	Locate information on working papers, what is required to obtain them, and who must sign them.
9.2.12.CAP.10	Identify strategies for reducing overall costs of postsecondary education (e.g., tuition assistance, loans, grants, scholarships, and student loans).
9.2.12.CAP.11	Demonstrate an understanding of Free Application for Federal Student Aid (FAFSA) requirements to apply for postsecondary education.
	Career planning requires purposeful planning based on research, self-knowledge, and informed choices.

Unit 4: Theater Set Design & Structural Builds

Content Area: **Science**
Course(s): **Wood 3**
Time Period: **2nd Semester**
Length: **8-10 weeks**
Status: **Awaiting Review**

Summary of the Unit

This unit connects advanced woodworking to theater production. Wood 3 students act as designers, builders, and leaders for structural set elements: platforms, stairs, railings, and feature pieces. They work from scripts and design concepts (when available), create or interpret scale drawings, plan materials and construction, and lead or support builds that must be safe, functional, and visually effective on stage.

By the end of Unit 4, students will be able to:

- Interpret or create simple scale drawings and structural plans for stage platforms, stairs, and set pieces.
- Plan materials, cut lists, and crew roles for a real or simulated production build.
- Build safe, functional, and visually appropriate set elements as part of a team.
- Lead or assist in finishing, labeling, and integrating set units on stage.
- Reflect on how woodworking skills apply to theater production and other real-world collaborative builds.

Enduring Understandings

- Set pieces must balance safety, strength, speed of construction, and visual impact.
- Scale drawings and clear communication are essential to coordinate between designers, directors, and builders.
- Leading a build requires planning, adaptability, and collaboration with a larger team.

Essential Questions

- How do we design set pieces that are safe for performers but still fast and efficient to build?
- How can we turn a director's ideas or drawings into realistic, buildable plans?
- What does it mean to lead a build team responsibly and professionally?

Unit Summative Assessment and Alternate Assessment Options

Unit 4 – Theater Set Design & Structural Builds (8–10 weeks, aligned with a show if possible)

- Focus on real productions where you can; otherwise, use mock scenarios.
- Topics:
  - Reading and creating scale drawings (1/4" = 1', etc.).
  - Platforms, stairs, railings, and bracing for people-weight loads.
  - Collaboration with drama teacher/director: design meetings, revisions, budgeting.
- Projects:
  - Build platforms/risers, stairs/ramps, or feature set pieces.
  - Wood 3 students act as lead builders/crew chiefs, mentoring Wood 1/2 where possible.

Resources

- Script and/or director's concept sketches for current production (if available).
- Simple scale drawing examples (1/4" = 1', 1/2" = 1').
- Stage construction references (platform framing, stair codes, bracing methods).
- Photos or videos of professional and school productions.
- Woodshop 3 Resources

Unit Plan

Topic/ Selection Timeframe	General Objectives	Instructional Activities	Assessments
Script, Concept, and Functional Needs: 8-10 weeks	• Summarize the basic setting and staging needs of the production. • Identify key functional requirements for platforms, stairs, and other set elements. • Discuss safety and traffic considerations for actors using the set.	Script, Concept, and Functional Needs: Understand what the production requires so set pieces are designed to fit the story, space, and performers' needs. Script/Concept Overview • If collaborating with drama: briefly introduce the show, setting(s), and key scenes. • Share any director/designer notes, sketches, or mood boards. Functional Requirements Discussion • As a class, list what the set must do: o Levels (platforms, risers). o Entrances/exits (stairs, ramps, doors). o Special effects or moving pieces (if any). • Discuss safety factors: weight loads, railings, fall risks, visibility, traffic patterns. Prioritizing Build Elements • Identify 2–4 major elements Wood 3 will focus on (e.g., main platform system, stairs/ramps, a central feature piece). • Clarify which pieces might	• Short written or diagram-based summary of required set elements and functions. • Teacher observation of class discussion and evidence that students understand the show's needs.

		involve Wood 1/2 support.	

Scale Drawings & Basic Structural Design: 8-10 weeks	• Read and/or create simple scale drawings (plan and elevation) for set units.
	
	• Design basic platform and stair framing that is appropriate for stage use.
	
	• Communicate structural ideas clearly to the teacher and, when possible, to the director/designer.
		Scale Drawings & Basic Structural Design: Teach students to interpret or create simple scale drawings for set pieces and translate them into structural framing plans.
		
		Scale Drawing Mini-Lesson
		
		• Review or introduce scale (e.g., 1/4" = 1').
		
		• Show an example ground plan or elevation and point out dimensions, notes, and symbols.
		
		Platform & Stair Design Basics
		
		• Use diagrams to review:
		  ○ Typical platform framing (2x lumber, joist spacing, legs, cross bracing).
		  ○ Basic stair proportions (rise/run, tread depth, handrail needs).
		
		• Emphasize that school policies/codes may set minimum safety standards.
		
		Student Drawings for Key Elements
		
		• Assign small groups to specific elements (platform unit, stair unit, ramp, main feature piece).
		
		• Each group creates scale drawings:
		  ○ Top view and front/side views as needed.
		  ○ Overall dimensions and heights.
			• Group drawings evaluated for clarity, correct use of scale, and reasonable framing.
			
			• Teacher/peer feedback on proposed designs with revisions as needed.

		○ Basic framing layout (joists, legs, braces) shown in simplified form. Review with Teacher/Director • Teacher reviews drawings for structural sense and buildability. • If possible, share drawings with director/designer for comments.	
Build Planning: Materials, Cut Lists, and Crew Roles: 8-10 weeks	• Create parts lists and cut lists for major set units based on scale drawings. • Estimate lumber and sheet goods needed for a build. • Take on specific crew roles that support an organized, efficient build process.	Build Planning: Materials, Cut Lists, and Crew Roles: Plan material usage and organize the build process, including assigning roles and responsibilities. Materials Planning • For each major set element, groups create: ○ A parts list (platform tops, joists, legs, braces, treads, stringers, etc.). ○ Rough material estimates (e.g., number of 2x4s, sheets of plywood/OSB).	• Group cut lists and material estimates reviewed for completeness and reasonableness. • Teacher observation of student participation in planning and role assignment discussions.

		• As a class, combine lists into a master materials list. Cut Lists & Layout Strategy • Groups generate cut lists for their units and decide how to break down stock to minimize waste. • Discuss strategies to standardize sizes for speed and interchangeability (e.g., multiple identical legs or platform modules). Crew Roles & Schedule • Define Wood 3 roles such as: Build Lead, Cut Crew, Assembly Crew, Quality/Safety Checker, Liaison to Drama. • Assign students to roles (rotating when appropriate) and build a loose schedule matching show deadlines.	
Construction: Platforms, Stairs, and Feature Pieces: 8-10 weeks	• Build stage platforms and stairs that are structurally sound and safe to use. • Apply efficient, repeatable methods for cutting and assembling multiple units. • Lead or support small build crews while maintaining safe work habits and clear communication.	Construction: Platforms, Stairs, and Feature Pieces: Build safe, functional, and show-ready set elements using efficient, repeatable methods and good leadership. Safety Briefing Specific to Set Builds • Review extra safety concerns: heavy assemblies, clamping large parts, working at heights (if applicable), many people moving in the shop. Platform Building • Cut and assemble platform frames (standardized modules if possible). • Attach tops securely; check	• Teacher evaluation of set units for structural integrity, stability, and workmanship. • Observation of Wood 3 students in leadership roles, using a simple leadership/safety checklist. • Quick logs or notes of daily build progress and any issues

		for squeaks and flex. • Install legs and bracing according to design. • Test platforms for movement, rocking, and noise. Stair/Ramp Building • Lay out and cut stringers and treads to match design. • Assemble and brace stairs/ramps; ensure treads are secure and feel safe underfoot. • Add handrails/guardrails as required by school policy and design. Feature Piece Construction • Build any special units (arched doorways, wagons, furniture-like pieces) using appropriate joinery and bracing. • Coordinate with drama on look and functionality. Wood 3 Leadership in Action • Wood 3 students lead or co-lead small crews (including Wood 1/2 where possible), demonstrating skills and monitoring safety. • Teacher supervises student leaders closely, giving feedback on communication and decision-making.	resolved.
Finishing & Onstage Integration: 8-10 weeks	• Prepare and paint set units to meet design requirements and	Finishing & Onstage Integration: Finish and install set pieces so they are visually effective and function well during rehearsals	• Visual evaluation of paint/finish and basic surface

	withstand use. • Label and organize units for efficient setup and strike. • Evaluate set pieces in place on stage and make practical adjustments for safety and function.	and performances. Surface Prep & Painting • Sand or knock down sharp edges and splinters. • Apply base coats and texture/finish coats per design notes. • Coordinate colors and textures with drama (e.g., scenic painter, art students, or director). Labeling & Organization • Label units clearly (e.g., P1, P2, ST1) for easy load-in, storage, and strike. • Create simple diagrams showing where each piece goes on stage. Onstage Fit & Adjustments • Move pieces to the stage (or a mock layout space) and check fit with doors, wings, and sightlines. • Make necessary adjustments (shimming legs, adding additional bracing, adjusting rail heights). • Observe a rehearsal if possible to see how performers use the set and identify needed tweaks.	prep. • Check the labeling and documentation for clarity. • Feedback (formal or informal) from drama staff about usability and appearance.

Reflection & Production Debrief: 8-10 weeks	• Analyze the effectiveness of their design and construction choices in a live production context.
	
	• Reflect on their role in a collaborative build and identify strengths and areas for growth.
	
	• Connect set construction experience to broader ideas of project management, teamwork, and real-world making.
		Reflection & Production Debrief: Reflect on the design/build process, teamwork, and impact on the production.
		
		Group Debrief Discussion
		
		• After the set is in use, discuss questions like:
		  ○ What went well in our planning and build process?
		  ○ Where did we run into trouble (time, materials, communication)?
		  ○ How did our work affect the show and the performers?
		
		Individual Reflection
		
		• Students write about:
		  ○ Their personal role and contributions.
		  ○ A problem they helped solve.
		  ○ How this experience changed how they think about woodworking and production work.
			• Collected written reflections evaluated for detail and insight.
			
			• Teacher observation of participation in debrief discussions.

Standards for Course Content Area and Cross Content Standards Addressed

9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
9.3.12.AC.2	Use architecture and construction skills to create and manage a project.
9.3.12.AC.3	Comply with regulations and applicable codes to establish and manage a legal and safe workplace.
9.3.12.AC.6	Read, interpret and use technical drawings, documents and specifications to plan a project.
9.3.12.AC.7	Describe career opportunities and means to achieve those opportunities in each of the Architecture & Construction Career Pathways.
9.3.12.AC-CST.1	Describe contractual relationships between all parties involved in the building process.

9.3.12.AC-CST.2	Describe the approval procedures required for successful completion of a construction project.
9.3.12.AC-CST.3	Implement testing and inspection procedures to ensure successful completion of a construction project.
9.3.12.AC-CST.4	Apply scheduling practices to ensure the successful completion of a construction project.
9.3.12.AC-CST.5	Apply practices and procedures required to maintain jobsite safety.
9.3.12.AC-CST.7	Compare and contrast the building systems and components required for a construction project.
9.3.12.AC-CST.8	Demonstrate the construction crafts required for each phase of a construction project.
9.3.12.AC-DES.1	Justify design solutions through the use of research documentation and analysis of data.
9.3.12.AC-DES.2	Use effective communication skills and strategies (listening, speaking, reading, writing and graphic communications) to work with clients and colleagues.
9.3.12.AC-DES.3	Describe the requirements of the integral systems that impact the design of buildings.
9.3.12.AC-DES.4	Apply building codes, laws and rules in the project design.
9.3.12.AC-DES.5	Identify the diversity of needs, values and social patterns in project design, including accessibility standards.
9.3.12.AC-DES.6	Apply the techniques and skills of modern drafting, design, engineering and construction to projects.
9.3.12.AC-DES.8	Apply standards, applications and restrictions pertaining to the selection and use of construction materials, components and assemblies in the project design.

Suggested Modifications for Students with Disabilities, 504 eligible, Multilingual Learners, At Risk Students and Gifted Students

Students with Disabilities / 504-Eligible Students

- Provide clear, step-by-step written directions and visual supports (photos, diagrams, checklists) for safety, procedures, and projects.
- Offer preferential seating and strategic partner/group work for modeling and support.
- Allow extended time on quizzes, projects, and safety check-offs as needed.
- Break multi-step tasks into smaller chunks with interim check-ins.
- Adjust tools, workspace, and project scale to support fine-motor, sensory, and mobility needs (e.g., clamps, jigs, adaptive grips, seated work when appropriate).
- Provide alternative formats for demonstrations and assessments (oral, visual, or recorded responses as appropriate to the IEP/504).
- Pre-teach and re-teach key vocabulary (safety terms, tool names) with visuals.

Multilingual Learners (MLL/ELL)

- Pre-teach essential vocabulary with images, labeled diagrams, and word banks posted in the shop.
- Use clear, concise language and model directions with demonstrations.
- Provide bilingual glossaries, sentence starters, and graphic organizers for reflections and written tasks.
- Allow students to demonstrate understanding through visuals, demonstrations, or brief oral explanations instead of lengthy written responses.
- Encourage peer support and structured partner work, pairing multilingual learners with supportive classmates.
- When possible, provide key documents (safety contract, major project overviews) in the student's home language or with translated summaries.

At-Risk Students

- Establish predictable routines and clear expectations for safety, cleanup, and participation.
- Provide frequent check-ins and positive feedback for on-task behavior and safe choices.

- Offer flexible deadlines when appropriate and provide in-class time to complete key tasks.
- Use highly structured roles and checklists during projects to support organization and follow-through.
- Connect projects to real-world applications (careers, theater productions, home use) to increase engagement.
- Coordinate with counselors/support staff as needed to monitor progress and address barriers to success.

Gifted and Advanced Students

- Offer optional extension tasks (more complex joinery, added design details, or leadership roles in group builds).
- Encourage students to propose small design modifications or custom elements within safety and time limits.
- Allow advanced students to mentor peers on specific skills (measuring, layout, machine setup) under teacher supervision.
- Provide opportunities for deeper research (materials, professional woodworking, set design) and brief presentations or written reflections.
- Differentiate project rubrics to recognize higher levels of complexity, precision, and independence.

Note: All modifications and accommodations should be aligned with students' IEPs, 504 Plans, and district policies, and can be applied flexibly across all units in this course.

Computer Sci Design Thinking

CS.9-12.8.2.12.ED.1	Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers.
CS.9-12.8.2.12.ED.2	Create scaled engineering drawings for a new product or system and make modification to increase optimization based on feedback.
CS.9-12.8.2.12.ED.3	Evaluate several models of the same type of product and make recommendations for a new design based on a cost benefit analysis.
CS.9-12.8.2.12.ED.4	Design a product or system that addresses a global problem and document decisions made based on research, constraints, trade-offs, and aesthetic and ethical considerations and share this information with an appropriate audience.
CS.9-12.8.2.12.ED.5	Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).
CS.9-12.8.2.12.ED.6	Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).
CS.9-12.ED	Engineering Design
	Engineering design evaluation, a process for determining how well a solution meets requirements, involves systematic comparisons between requirements, specifications, and constraints.
	Engineering design is a complex process in which creativity, content knowledge, research, and analysis are used to address local and global problems. Decisions on trade-offs involve systematic comparisons of all costs and benefits, and final steps that may involve redesigning for optimization.

Career Readiness, Life Literacies and Key Skills Practice

9.2.12.CAP.4	Evaluate different careers and develop various plans (e.g., costs of public, private, training schools) and timetables for achieving them, including educational/training requirements, costs, loans, and debt repayment.
9.2.12.CAP.5	Assess and modify a personal plan to support current interests and post-secondary plans.

9.2.12.CAP.6	Identify transferable skills in career choices and design alternative career plans based on those skills.
9.2.12.CAP.7	Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.
9.2.12.CAP.8	Determine job entrance criteria (e.g., education credentials, math/writing/reading comprehension tests, drug tests) used by employers in various industry sectors.
9.2.12.CAP.9	Locate information on working papers, what is required to obtain them, and who must sign them.
9.2.12.CAP.10	Identify strategies for reducing overall costs of postsecondary education (e.g., tuition assistance, loans, grants, scholarships, and student loans).
9.2.12.CAP.11	Demonstrate an understanding of Free Application for Federal Student Aid (FAFSA) requirements to apply for postsecondary education.
	Career planning requires purposeful planning based on research, self-knowledge, and informed choices.

Unit 5: Capstone/Portfolio & Leadership

Content Area: **Science**
Course(s): **Wood 3**
Time Period: **2nd Semester**
Length: **3-4 weeks**
Status: **Not Published**

Summary of the Unit

In this culminating unit, Wood 3 students document their work from the year, reflect on their growth, and take on visible leadership roles in the shop. They curate a small portfolio (photos, drawings, reflections), help with shop improvement or mentoring tasks, and make connections to career/college pathways in woodworking, construction, theater production, and design. The focus is on consolidating skills, communicating them clearly, and seeing how they apply beyond the course.

By the end of Unit 5, students will be able to:

- Curate and present a small portfolio that documents their best work from Wood 3.
- Plan and complete a leadership or shop improvement project that benefits the program.
- Connect their woodworking and set-building skills to possible careers, training, or further education.
- Reflect thoughtfully on their growth, strengths, and next steps as advanced woodworking students.

Enduring Understandings

- Finished projects are more powerful when they are documented, explained, and reflected on.
- Leadership includes planning, communication, and responsibility, not just technical skill.
- Woodworking and set-building skills connect to real careers, trades, and creative fields.

Essential Questions

- How can I present my work and skills in a way that shows what I can really do?
- What does leadership look like in a shop or production environment?
- Where can advanced woodworking and set-building skills take me after high school?

Unit Summative Assessment and Alternate Assessment Options

Unit 5 – Capstone/Portfolio & Leadership (3–4 weeks, can overlap)

- Polishing and documenting projects from the year (photos, write-ups, drawings).
- Leadership & teaching: Wood 3 students demo skills to younger classes, help with shop organization projects.
- Final reflection and post-secondary/CTE connections (careers, trade schools, college programs, maker spaces).

Resources

- Photos (or photo time) for student projects.
- Student planning packets, sketches, and rubrics from Units 2–4.
- Simple portfolio templates (digital slide deck or printed binder).
- Career/college info for CTE, trades, design, and theater tech programs.
- Woodshop 3 Resources

Unit Plan

Topic/Selection Timeframe	General Objectives	Instructional Activities	Assessments
Project Documentation & Portfolio Creation: 3-4 weeks	• Select and organize artifacts (photos, drawings, plans) that represent their best work in Wood 3. • Create a simple portfolio that clearly presents at least two major projects and their key features. • Describe the joinery, design decisions, and challenges for each featured project.	Project Documentation & Portfolio Creation: Help students organize and present their best work from Wood 3 in a simple, clear portfolio. Collecting Artifacts • Students gather materials from throughout the course: o Photos of major projects (Unit 2 advanced project, Unit 3 independent piece, Unit 4 set builds). o Selected drawings, cut lists, planning sheets. o Rubrics or teacher feedback they want to highlight. • If needed, schedule time for students to photograph their finished projects in decent light. Portfolio Format Options • Offer one or two formats, for example: o A simple digital slide deck (Google Slides/PowerPoint). o A physical binder or folder with printed photos and copies of	• Portfolio graded using a checklist or rubric (required sections, clarity, completeness, technical accuracy of descriptions). • Teacher observation of student effort and attention to detail in selecting and explaining work.

		drawings/plans.
		
		• Provide a very short outline of required sections, such as:
		
		  ○ Title page with student name and course.
		
		  ○ 2–3 featured projects (one from each major unit).
		
		  ○ At least one planning artifact (drawing or plan) and one reflection per featured project.
		
		  ○ Optional: a page on set design/theater work.
		
		Building the Portfolio
		
		• Students assemble portfolio sections:
		
		  ○ Choose 2–3 key projects to feature (e.g., advanced box/table, independent project, set build).
		
		  ○ For each, include: project title, brief description, 1–3 photos, and a short reflection on goals, joinery/techniques, and outcome.
		
		• Teacher circulates to help with organization, clarity, and technical explanations.	

Leadership & Shop Improvement Project: 3-4 weeks	• Identify a specific way they can improve the shop environment or support other students.
	
	• Plan and complete a small leadership or improvement project with minimal supervision.
	
	• Explain how their project benefits future classes or productions.
		Leadership & Shop Improvement Project: Give students a chance to demonstrate leadership through a small, focused project that improves the shop or supports younger classes.
		
		Brainstorm Leadership/Improvement Options
		
		• As a class, list possible leadership/improvement projects, such as:
		  ○ Building or improving shop jigs/fixtures for future classes.
		  ○ Reorganizing and labeling tool storage or hardware bins.
		  ○ Creating safety or process posters (e.g., machine setup steps, cleanup roles).
		  ○ Preparing demo pieces or sample joints for Wood 1/2 lessons.
		  ○ Helping design a better set storage solution for theater.
		
		Project Selection
		
		• Students choose an individual or small-group leadership/improvement project.
		
		• Each project needs a brief written plan that includes:
			• Short project proposal forms reviewed for clarity and value to the shop.
			
			• Teacher observation of project execution (initiative, follow-through, teamwork if applicable).
			
			• Simple rubric for final product or contribution (usefulness, quality, and safety).
			
			• Brief oral or written explanation of the project's impact.

		○ The problem or need it addresses. ○ The proposed solution. ○ Basic steps and materials needed. • Teacher approves or modifies proposals for safety and scope. Execution • Students carry out their leadership/improvement projects over several class periods. • Teacher monitors safety, feasibility, and collaboration. • Encourage students to involve (or at least think about) how Wood 1/2 will use what they create. Quick Share-Out • Students briefly show or explain their leadership/improvement contribution to the class.	
Career, College, and Next Steps Connections: 3-4 weeks	• Identify at least two postsecondary options (training, college, or careers) that connect to woodworking and set construction	Career, College, and Next Steps Connections: Help students see concrete pathways where their Wood 3 skills apply beyond high school. Mini-Lesson on Pathways • Present a short overview of related fields, such as:	• Short written response or worksheet linking course skills to careers/paths. • Teacher observation of

	skills. • Describe specific skills from Wood 3 that would be useful in those options. • Reflect on whether they are interested in exploring any of these paths further.	○ Carpentry, cabinetmaking, and finish carpentry. ○ Theater tech and scenic construction. ○ Furniture making and fine woodworking. ○ Industrial design, architecture, construction management. • Share local/regional programs (CTE, union apprenticeships, community college, trade schools, relevant college majors) if you have info. Skills Mapping Activity • Have students make a quick chart linking Wood 3 skills to at least one pathway (e.g., "reading plans," "set builds," "independent project planning" to possible careers). Optional Guest / Virtual Resource • If possible, show a short video of a professional in a related field or invite a guest speaker (in person or virtual). • Students take brief notes or write questions.	participation in discussion or Q&A with any guest/resource.
Final Reflection & Course Debrief: 3-4 weeks	• Reflect on their development as woodworkers	Final Reflection & Course Debrief: Give students structured time to reflect on their full Wood 3 journey and articulate their	• Collected written reflections evaluated for depth and

	and leaders over the course of Wood 3.
	
	• Identify specific projects, moments, or skills that were especially important to their growth.
	
	• Express their thoughts about how the course might influence their future choices.
		growth.
		
		Guided Reflection Prompts
		
		• Provide prompts such as:
		  ○ Which project are you most proud of this year, and why?
		  ○ What was your biggest challenge, and how did you handle it?
		  ○ How did your approach to safety and leadership change from the start of Wood 3 to now?
		  ○ What skills from this class do you think you'll use in the future (even outside of woodworking)?
		
		Optional Course Feedback
		
		• Invite students to give (respectful) feedback on assignments or structures that helped or could be improved.
		
		• Use this to refine future Wood 3 offerings.
		
		Closing Conversation
		
		• End with a brief whole-class debrief celebrating accomplishments and highlighting standout efforts or growth.
			specificity.
			
			• Optional short survey or feedback form on course structure and content.

Standards for Course Content Area and Cross Content Standards Addressed

9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
9.3.12.AC.2	Use architecture and construction skills to create and manage a project.
9.3.12.AC.3	Comply with regulations and applicable codes to establish and manage a legal and safe workplace.
9.3.12.AC.4	Evaluate the nature and scope of the Architecture & Construction Career Cluster and the role of architecture and construction in society and the economy.
9.3.12.AC.5	Describe the roles, responsibilities, and relationships found in the architecture and construction trades and professions, including labor/management relationships.
9.3.12.AC.6	Read, interpret and use technical drawings, documents and specifications to plan a project.
9.3.12.AC-CST.1	Describe contractual relationships between all parties involved in the building process.
9.3.12.AC-CST.2	Describe the approval procedures required for successful completion of a construction project.
9.3.12.AC-CST.3	Implement testing and inspection procedures to ensure successful completion of a construction project.
9.3.12.AC-CST.4	Apply scheduling practices to ensure the successful completion of a construction project.
9.3.12.AC-CST.5	Apply practices and procedures required to maintain jobsite safety.
9.3.12.AC-CST.7	Compare and contrast the building systems and components required for a construction project.
9.3.12.AC-CST.8	Demonstrate the construction crafts required for each phase of a construction project.
9.3.12.AC-CST.9	Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.
9.3.12.AC-DES.1	Justify design solutions through the use of research documentation and analysis of data.
9.3.12.AC-DES.2	Use effective communication skills and strategies (listening, speaking, reading, writing and graphic communications) to work with clients and colleagues.
9.3.12.AC-DES.3	Describe the requirements of the integral systems that impact the design of buildings.
9.3.12.AC-DES.4	Apply building codes, laws and rules in the project design.
9.3.12.AC-DES.5	Identify the diversity of needs, values and social patterns in project design, including accessibility standards.
9.3.12.AC-DES.6	Apply the techniques and skills of modern drafting, design, engineering and construction to projects.
9.3.12.AC-DES.7	Employ appropriate representational media to communicate concepts and project design.
9.3.12.AC-DES.8	Apply standards, applications and restrictions pertaining to the selection and use of construction materials, components and assemblies in the project design.

Suggested Modifications for Students with Disabilities, 504 eligible, Multilingual Learners, At Risk Students and Gifted Students

Students with Disabilities / 504-Eligible Students

- Provide clear, step-by-step written directions and visual supports (photos, diagrams, checklists) for safety, procedures, and projects.
- Offer preferential seating and strategic partner/group work for modeling and support.
- Allow extended time on quizzes, projects, and safety check-offs as needed.
- Break multi-step tasks into smaller chunks with interim check-ins.
- Adjust tools, workspace, and project scale to support fine-motor, sensory, and mobility needs (e.g., clamps, jigs, adaptive grips, seated work when appropriate).

- Provide alternative formats for demonstrations and assessments (oral, visual, or recorded responses as appropriate to the IEP/504).
- Pre-teach and re-teach key vocabulary (safety terms, tool names) with visuals.

Multilingual Learners (MLL/ELL)

- Pre-teach essential vocabulary with images, labeled diagrams, and word banks posted in the shop.
- Use clear, concise language and model directions with demonstrations.
- Provide bilingual glossaries, sentence starters, and graphic organizers for reflections and written tasks.
- Allow students to demonstrate understanding through visuals, demonstrations, or brief oral explanations instead of lengthy written responses.
- Encourage peer support and structured partner work, pairing multilingual learners with supportive classmates.
- When possible, provide key documents (safety contract, major project overviews) in the student's home language or with translated summaries.

At-Risk Students

- Establish predictable routines and clear expectations for safety, cleanup, and participation.
- Provide frequent check-ins and positive feedback for on-task behavior and safe choices.
- Offer flexible deadlines when appropriate and provide in-class time to complete key tasks.
- Use highly structured roles and checklists during projects to support organization and follow-through.
- Connect projects to real-world applications (careers, theater productions, home use) to increase engagement.
- Coordinate with counselors/support staff as needed to monitor progress and address barriers to success.

Gifted and Advanced Students

- Offer optional extension tasks (more complex joinery, added design details, or leadership roles in group builds).
- Encourage students to propose small design modifications or custom elements within safety and time limits.
- Allow advanced students to mentor peers on specific skills (measuring, layout, machine setup) under teacher supervision.
- Provide opportunities for deeper research (materials, professional woodworking, set design) and brief presentations or written reflections.
- Differentiate project rubrics to recognize higher levels of complexity, precision, and independence.

Note: All modifications and accommodations should be aligned with students' IEPs, 504 Plans, and district policies, and can be applied flexibly across all units in this course.

Computer Sci Design Thinking

CS.9-12.8.2.12.EC.1	Analyze controversial technological issues and determine the degree to which individuals, businesses, and governments have an ethical role in decisions that are made.
CS.9-12.8.2.12.ED.1	Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers.
CS.9-12.8.2.12.ED.2	Create scaled engineering drawings for a new product or system and make modification to increase optimization based on feedback.
CS.9-12.8.2.12.ED.3	Evaluate several models of the same type of product and make recommendations for a new design based on a cost benefit analysis.
CS.9-12.8.2.12.ED.4	Design a product or system that addresses a global problem and document decisions made based on research, constraints, trade-offs, and aesthetic and ethical considerations and share this information with an appropriate audience.
CS.9-12.8.2.12.ED.5	Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic

	considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).
CS.9-12.8.2.12.ED.6	Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).

Career Readiness, Life Literacies and Key Skills Practice

9.2.12.CAP.4	Evaluate different careers and develop various plans (e.g., costs of public, private, training schools) and timetables for achieving them, including educational/training requirements, costs, loans, and debt repayment.
9.2.12.CAP.5	Assess and modify a personal plan to support current interests and post-secondary plans.
9.2.12.CAP.6	Identify transferable skills in career choices and design alternative career plans based on those skills.
9.2.12.CAP.7	Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.
9.2.12.CAP.8	Determine job entrance criteria (e.g., education credentials, math/writing/reading comprehension tests, drug tests) used by employers in various industry sectors.
9.2.12.CAP.9	Locate information on working papers, what is required to obtain them, and who must sign them.
9.2.12.CAP.10	Identify strategies for reducing overall costs of postsecondary education (e.g., tuition assistance, loans, grants, scholarships, and student loans).
9.2.12.CAP.11	Demonstrate an understanding of Free Application for Federal Student Aid (FAFSA) requirements to apply for postsecondary education.
	Career planning requires purposeful planning based on research, self-knowledge, and informed choices.