

Construction Technology I – Grades 9-12

Unit: 1	The Background Of Lumber				
Big Ideas:	Students actively and skillfully interpret, analyze, evaluate, and synthesize information				
Unit Essential Questions:	Where do building materials come from? What the proper procedures to handle and store lumber? What are lumber defects and how are they formed?				
Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Mini-Lessons/Activities	Instructional Materials	Assessments
Selecting Wood Defects Board Measures Wood Identification Sizes and surface Moisture and drying Panel materials Handling and storing Structure and growth Harvesting and processing Modern Woodworking Text Book Chapter 2 & 35 (2-3 Weeks)	3.4.10.E7. 3.4.10.E2. 3.4.10.D3. 3.7.4.B. 3.7.7.B. 3.7.10. A. 3.7.12.A.	Softwood Hardwood Lumber defects Knots Splits Checks Shakes Pitch pockets Wane Blue stain Machine burn Decay Worm holes Warp Bow Crook Twist Cup Kiln drying Air drying Plain sawed Quarter sawed Grain Figure Plywood Veneer Waterboard Particleboard Composite Recycle Heartwood Sapwood Stickers Forestry Lumber yard Saw mill	Large group direct instruction Class discussions Guided reading on lumber Related woodworking videos Modern Marvels Lumber video Equipment demonstrations	General Wood Lab resources Modern Woodworking Text Book Woodworking videos Woodworking machines Handouts Internet	Quizzes and tests: M/C, T/F, Matching, short answer. Participation daily grade Homework Video Worksheets

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Unit: 2	Measurements and Sizes				
Big Ideas:	Students actively and skillfully interpret, analyze, evaluate, and synthesize information				
Unit Essential Questions:	How are we able to measure the materials used? How is rough-cut lumber cut to be processed? What tools are used to measure and layout building materials?				
Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Mini-Lessons/Activities	Instructional Materials	Assessments
Sketching Design Factors Customary & Metric Conversions Rough Layout Modern Woodworking Text Book Chapter 1 & 4 (1-2 Weeks)	3.7.4.B. 3.7.7.B. 3.7.10. A. 3.7.12.A. M5.A.1.3.3. M6.A.3.2.1. M7.A.3.2.1. M8.A.3.3.1.	Fractions Inch Feet Metric Meter Centimeter Millimeter Rough Cutting Reducing Dividing Adding Tape Measure Square	Large group direct instruction Class discussions Guided reading Equipment demonstrations Group work- Problem solving activities Reading a ruler / tape measure activity	General Wood Lab resources Modern Woodworking Text Book Woodworking machines Handouts Super Inch Internet Sketches / portfolio	Quizzes and tests: M/C, T/F, Matching, short answer. Participation daily grade Homework Sketches

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Unit: 3	Woodworking Safety				
Big Ideas:	Students actively and skillfully interpret, analyze, evaluate, synthesize, and apply information				
Unit Essential Questions:	What are the safety procedures for working in a wood lab? What are the proper ways to handle hand tools? Why is machine safety so important?				
Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Mini-Lessons/Activities	Instructional Materials	Assessments
PPE General Safety Rules Hand tools Corded/cordless Equipment Planing Machines Circular Saws Band Saw, Scroll Saw, & Saber Saw Drill Press Router & Shaper Sanding Machines Tool Care Modern Woodworking Text Book Chapter 3, 13-19, & 33. (5-6 Weeks)	3.4.10.E7. 3.4.10.E2. 3.4.10.D3. 3.7.4.B. 3.7.7.B. 3.7.10. A. 3.7.12.A.	PPE Safety Glasses Hand Tools Wrench Clamps Hammer Clean Sharp & Dull Blade Bit Jointer Planer Push pad Push Stick Table Saw Radial Arm Saw Miter Saw Band Saw Scroll Saw Drill Press Sander Router Shaper Guards Miter gauge Fence Chuck Key V block Abrasives	Large group direct instruction Class discussions Guided reading Related woodworking videos Equipment demonstrations Group work- Problem solving activities	General Wood Lab resources Modern Woodworking Text Book Woodworking videos Woodworking machines Handouts Internet	Quizzes and tests: M/C, T/F, Matching, short answer. Participation daily grade Homework Safety Video Worksheets

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Unit: 4	Preparing to Finish				
Big Ideas:	Students actively and skillfully interpret, analyze, evaluate, synthesize, and apply information				
Unit Essential Questions:	What types of fasteners are used for assembling projects? How should projects be sanded and prepared for a finish coat? What are the differences in finishes and how should they apply to your project?				
Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Mini-Lessons/Activities	Instructional Materials	Assessments
Assembling with adhesives Types of wood fasteners Sanding and preparing wood Finishes and finishing. Wood filler Removing dents Modern Woodworking Text Book Chapter 9-12. (3-4 Weeks)	3.4.10.E7. 3.4.10.E2. 3.4.10.D3. 3.7.4.B. 3.7.7.B. 3.7.10. A. 3.7.12.A.	Adhesives Cements Glue Epoxy Resin Filler Dry fitting Clamps Glue joints Hammers Nails Brads Wood screws Screw drivers Phillips Flat head Pilot Counter sink Counter bore Plugs Buttons Braces Staples Air powered Bolts Nuts Washers Abrasives Grit Sanding Scrapers Repairs Indoor finish Outdoor finish Food grade finish Stain Polish Wax Primer Paint Latex Oil Brushes	Large group direct instruction Class discussions Guided reading Related woodworking videos Equipment demonstrations Group work- Problem solving activities Finishing room flammables	General Wood Lab resources Modern Woodworking Text Book Woodworking videos Woodworking machines Handouts Internet	Quizzes and tests: M/C, T/F, Matching, short answer. Participation daily grade Homework Safety Video Worksheets

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Unit: 5	Wooden Turnings				
Big Ideas:	Students actively and skillfully interpret, analyze, evaluate, synthesize, and apply information				
Unit Essential Questions:	What are types of turning that can be made? Identify the proper tools used for each type of turning How can a turning be finished?				
Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Mini-Lessons/Activities	Instructional Materials	Assessments
Parts of the lathe Tools and parts used Layout Mounting Faceplates Chucks Modern Woodworking Text Book Chapter 17. (2-3 Weeks)	3.4.10.E7. 3.4.10.E2. 3.4.10.D3. 3.7.4.B. 3.7.7.B. 3.7.10. A. 3.7.12.A.	Lathe Headstock Tailstock Knock out bar Spur center Live center Dead center Tool rest Bed Chisels Gouge Skew Parting tool Spear point Round nose Square nose Grinding Sharpening Spindle turning Beads Grooves Coves Faceplate Boring Drilling Chuck	Large group direct instruction Class discussions Guided reading Related woodworking videos Equipment demonstrations Group work- Problem solving activities	General Wood Lab resources Modern Woodworking Text Book Woodworking videos Woodworking machines Handouts Internet	Quizzes and tests: M/C, T/F, Matching, short answer. Participation daily grade Homework Safety Video Worksheets