Course: Woods and Construction
Grade Level: 9-12
LG 1 Safety

High Priority Standards	
MoDese Performance Indicators for Carpentry **Module 00101-09 – Basic Safety** 1. Identify causes of accidents and the impact of accident costs. 2. Explain the role of OSHA in job-site safety. 3. Explain fall protection, ladder, stair, and scaffold procedures and requirements. 4. Identify struck-by hazards and demonstrate safe working procedures and requirements. 5. Identify caught-in-between hazards and demonstrate safe working procedures and requirements. 6. Define safe work procedures to use around electrical hazards. 7. Demonstrate the use and care of appropriate personal protective equipment (PPE).	
Learning Goal	**Proficiency Scale**
Student will understand personal and workplace safety procedures.	Level 4: Student demonstrates an in-depth inference or advanced application or innovates with the learning goal. Level 3: Student demonstrates mastery with the learning goal as evidenced by: • Explaining all possible hazards in the wood shop environment such as caught-between and struck-by hazards, electrical hazards, and ladder/scaffold hazards. • Applying safety procedures at all times.

	Level 2: Student demonstrates he/she is nearing proficiency by:
	• Recognizing and recalling specific vocabulary, such as: turn on and turn off procedures for all machines: uniplane, band saw, drill press, surfacer, belt and disc sander.
	• Performing processes such as:
	  o Identifying OSHA standards.
	  o Identifying correct protective gear for the job.
	  o Identifying the causes of common accidents.
	
	Level 1: Student demonstrates a limited understanding or skill with the learning goal.

Learning Targets

The student knows how to:

- Recognize first aide when it is needed.
- Demonstrate appropriate lab safety practices.
- Communicate safe lab practices.
- Comprehend safe practices for machine operation.
- Comprehend table saw safety.

Course: Woods and Construction
Grade Level: 9-12
LG 2 Measurement

High Priority Standards

MoDese Performance Indicators for Carpentry
Introduction to Construction Math

1. Add, subtract, multiply, and divide whole numbers, with and without a calculator.
2. Use a standard ruler, a metric ruler, and a measuring tape to measure.
3. Add, subtract, multiply, and divide fractions.
4. Add, subtract, multiply, and divide decimals, with and without a calculator.
5. Convert decimals to percentages and percentages to decimals.
6. Convert fractions to decimals and decimals to fractions.
7. Explain what the metric system is and how it is important in the construction trade.
8. Recognize and use metric units of length, weight, volume, and temperature.
9. Recognize some of the basic shapes used in the construction industry and apply basic geometry to measure them.

Learning Goal	Proficiency Scale
Student will be able to use tools in order to be precise.	Level 4: Student demonstrates an in-depth inference or advanced application or innovates with the learning goal. Level 3: Student demonstrates mastery with the learning goal as evidenced by: • Reading and interpreting results using all forms of measurement tools for carpentry. • Performing calculations for wood cuts and dimensions. • Utilizing layout tools to complete a project.

	Level 2: Student demonstrates he/she is nearing proficiency by: • Recognizing and recalling specific vocabulary, such as: Metric vs. standard, numerator, denominator, whole number, reduced, common denominator, try square, carpenters' square, combination square, trim gauge, compass, caliper, & divider, Soft wood, Hardwood, Indigenous wood. • Performing processes such as: ○ Identifying measurement tools and performing simple calculations. Level 1: Student demonstrates a limited understanding or skill with the learning goal.

Learning Targets

The student knows how to:

- Read and interpret a rule/tape measure.
- Perform basic math skills (add, subtract, multiply, fractions).
- Identify and use measuring layout tools.
- Identify and properly use hand tools.
- Identify wood species.

Course: Woods and Construction
Grade Level: 9-12
LG 3 Power Tools and Equipment

High Priority Standards

MoDese Performance Indicators for Carpentry
Introduction to Power Tools

1. Identify power tools commonly used in the construction trades.
2. Use power tools safely.
3. Explain how to maintain power tools properly.

Hand and Power Tools

3. State the general safety rules for operating all power tools, regardless of type.
4. State the general rules for properly maintaining all power tools, regardless of type.

Learning Goal	Proficiency Scale
Students will be able to use power tools and equipment consistent with industry and safety standards.	Level 4: Student demonstrates an in-depth inference or advanced application or innovates with the learning goal. Level 3: Student demonstrates mastery with the learning goal as evidenced by: • Operating tools within industry standard guidelines for safety. • Performing maintenance of tools to keep them in safe, working order. • Applying a working knowledge of various cuts, joints, and functions of all tools.

	Level 2: Student demonstrates he/she is nearing proficiency by:
	• Recognizing and recalling specific vocabulary, such as: pneumatic tool, grinders, roto zips, uniplane: infeed fence, outfeed fence, table, cutter head, guard, depth gauge, bandsaw: relief cuts, resaw cut, cross cut, rip cut, drill press: chuck, chuck key, table, drill stop, disc sander: size, widest boards, surfacer: turn on procedures, clutch, handle, tablesaw: resaw cut, dado blades, dado cut, rabbit cut, cross cut, rip cut, radial arm saw, cross cut jointer:
	• Performing processes such as:
	  ○ Identifying industry standards for use and safety of power tools.
	  ○ Identifying various cuts and their best use for projects.
	
	Level 1: Student demonstrates a limited understanding or skill with the learning goal.

Learning Targets

The student knows how to:

- Demonstrate proper use of pneumatic tools.
- Demonstrate proper use of portable electric tools (biscuit joiner, electric drill, router, sander).
- Operate saws accurately (table saw, miter saw, radial arm saw, band saw).
- Operate drill press accurately.
- Operate joiner accurately.
- Operate a bench grinder accurately.
- Operate a planer accurately.
- Operate sanding machines accurately.

Course: Woods and Construction
Grade Level: 9-12
LG 4 Equipment setup

High Priority Standards **MoDese Performance Indicators for Carpentry** **Module 27103-06 – Hand and Power Tools** **6. Use portable power tools in a safe and appropriate manner.**	

Learning Goal
 	
Students will be able to set up machine equipment consistent with industry and safety standards.
	Proficiency Scale
	
	Level 4: Student demonstrates an in-depth inference or advanced application or innovates with the learning goal.
	
	Level 3: Student demonstrates mastery with the learning goal as evidenced by:
	● Applying a complete tool set-up of the following tools to eliminate run-out (tapering or uneven work) or error during machine operation.
	  ● Saws: table, miter, radial arm, band.
	  ● Drill presses, joiners, and planers.
	  ● Sanding machines: wide belt, belt, disc.
	  ● Shaper and router table.
	
	Level 2: Student demonstrates he/she is nearing proficiency by:
	● Recognizing and recalling specific vocabulary, such as: table saw, miter

	gauge, cross cut sled, dubby, resaw cut, rip cut, drill stop, chuck, chuck key, keyless chuck, table, column, duration, safe side, band saw, scroll saw, drill press, disc/belt sander, boss sander, jointer, surfacer, router table, hand tools, hand-held power tools, turn-on procedure, turn-off procedure. • Performing processes such as: o Identifying set up procedures that produce some tapering or uneven work. o Partially checking the settings before operation. o Identifying tools used to saw, drill, sand, and shape. Level 1: Student demonstrates a limited understanding or skill with the learning goal.

Learning Targets

The student knows how to:

- Set up saws accurately (table, miter, radial arm, band).
- Set up drill presses, joiners, and planers accurately.
- Set up sanding machines accurately (wide belt, belt, disc).
- Set up shaper and router table accurately.

Course: Woods and Construction
Grade Level: 9-12
LG 5 Joinery

<table>
<tr><td colspan="2">High Priority Standards

MoDese Performance Indicators for Carpentry
Module 27103-06 – Hand and Power Tools
6. Use portable power tools in a safe and appropriate manner.
Module 27102-06 – Building Materials, Fasteners, and Adhesives
1. Identify various types of building materials and their uses.
2. State the uses of various types of hardwoods and softwoods.
3. Identify the different grades and markings of wood building materials.</td></tr>
<tr><td>Learning Goal

Students will be able to use complex joints to construct projects.</td><td>Proficiency Scale

Level 4: Student demonstrates an in-depth inference or advanced application or innovates with the learning goal.

Level 3: Student demonstrates mastery with the learning goal as evidenced by:
● Creating joints that are perpendicular, true, and square throughput the project.
● Creating hidden pocket screws and biscuits, and a true and square butt, dado and spline.

Level 2: Student demonstrates he/she is nearing proficiency by:</td></tr>
</table>

	• Recognizing and recalling specific vocabulary, such as: joints: lap,spine,butt dado rabbet, miter, biscuit, dowels; Finishes: Alkyd based, polyurethene, deft, acrylic based, water based; Fasteners: counter-bore, counter-sink, finish nail, common nails, screws.
	• Performing processes such as:
	  ○ Installing dowels and finish screws.
	  ○ Identifying and choosing types of joints for a project.
	
	Level 1: Student demonstrates a limited understanding or skill with the learning goal.

Learning Targets

The student knows how to:

- Identify types of joints used in cabinet making.
- Layout, cut, and construct joints used in cabinet making (lap, pocket screw, spline, butt, dado, rabbet, miter, biscuit).
- Install dowels in common wood joints.
- Select and use fasteners when constructing joints (glue, finish nails, and screws).

Grade Level: 11-12
LG 6 Independent Project

High Priority Standards

International Technology Education Association http://www.iteaconnect.org/TAA/PDsF/xstnd.pdf
Standards for Technological Literacy : Understanding of Design
Standard 8. Students will develop an understanding of the attributes of design.
Standard 9. Students will develop an understanding of engineering design.
Standard 10. Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.

Standards for Technological Literacy : Abilities for a Technological World
Standard 11. Students will develop abilities to apply the design process.

Learning Goal	Proficiency Scale
Students will be able to design and solve a problem.	Level 4: Student demonstrates an in-depth inference or advanced application or innovates with the learning goal. Level 3: Student demonstrates mastery with the learning goal as evidenced by: • Designing a construction problem by themselves or with others. • Applying problem-solving and wood construction skills to solve a design problem. Level 2: Student demonstrates he/she is nearing proficiency by: • Recognizing and recalling specific vocabulary, such as: elevation, sketch, plot plan, profile view, plan view, model, presentation, master parameters, materials, structure. • Performing processes such as: ○ Creating a solution to a design problem.

	Level 1: Student demonstrates a limited understanding or skill with the learning goal.

Learning Targets

Students know how to:

- Brainstorm and record solutions.
- Share, discuss and choose the best solution.
- Complete development work.
- Build a prototype.
- Test and redesign.