

Correlation of
Modern Cabinetmaking, Molzahn, Umstatt, Davis
(Goodheart-Willcox Publisher ©2023)
to
Woodwork Career Alliance: 11. Grinding & Sharpening

The content of the text and Lab Workbook correlates to Woodwork Career Alliance (WCA) skill standards. The WCA establishes a benchmark to measure and recognize an individual's skills and knowledge. The WCA skill standards help ensure that students are prepared for rigorous industry standards, and provide a pathway for advancement for professional woodworkers.

The WCA skill standards define the minimum requirements for specific woodworking machine operations. Using the WCA skill standards in a wood training program can help you, your students, and your program obtain industry recognition. The Modern Cabinetmaking textbook and Lab Workbook are correlated to the performance standards, helping prepare your students for certification.



Grinding & Sharpening Considerations

- Pre-Operation Checklist is a prerequisite for ANY operation.
- Appropriate stance is utilized for optimum balance and part control.
- Appropriate stance and hand control are utilized for optimum balance and part control.
- Operator clears machine and cleans work area after use.
- Required OSHA-approved clothing and personal protective equipment is worn.
- Required OSHA-approved personal protective equipment is worn.
- Stock is supported and secured from movement.
- Tool is in sound working condition, free of cracks and chips.
- Lock-out/tag-out procedure is in place and followed.
- Process is completed in a timely manner.

Bench Grinder

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
Pre-Operation Checklist				
1	—	Performance Standard 1. Verifies the wheel is sound, without cracks or chips, dressed, and/or slightly crowned.	Chapter 39	—
1	—	Performance Standard 2. Verifies the wheel is properly guarded.	Chapter 39	—
1	—	Performance Standard 3. Verifies distance between the tool rest and the edge of the wheel does not exceed 3 mm (1/8") [0.125"].	Chapter 39	—
1	—	Performance Standard 4. Verifies tool rest is adjusted and tightened securely.	Chapter 39	—
1	—	Performance Standard 5. Ensures water for quenching is close at hand, ready to use.	Chapter 39	—
1	—	Performance Standard 6. Ensures no combustibles are within proximity to the tool.	Chapter 39	—
2	—	Performance Standard 1. Confirms the wheel is friable, renewing its abrasive under use.	Chapter 39	—
2	—	Performance Standard 2. Sets the tongue (spark arrester) to a clearance of ± 1.5 mm (1/16") [0.0625"] to 6 mm (1/4") [0.25"].	Chapter 39	—
2	—	Performance Standard 3. Sets tool rest at proper angle and distance from wheel.	Chapter 39	—
2	—	Performance Standard 4. Demonstrates ability to dress and/or crown wheels.	Chapter 39	—
2	—	Meets Level 1 performance standard.	—	—
Operation—Sharpening Straight Blades				

Correlation of *Modern Cabinetmaking* to Woodwork Career Alliance—page 3

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
1	Given a properly set up machine, wheel, and tool rest, produce a true edge and bevel, ready for honing, on a straight square blade such as a hand chisel or blade for a hand plane.	Performance Standard 1. Edges are sharp enough to catch when sliding across the surface of a fingernail.	Chapter 39	Section Project 4-10
1	Given a properly set up machine, wheel, and tool rest, produce a true edge and bevel, ready for honing, on a straight square blade such as a hand chisel or blade for a hand plane.	Performance Standard 2. Edges of blade are straight and square to adjacent edges of tool ± 0.4 mm ($1/64''$) [0.0156"].	Chapter 39	Section Project 4-10
1	Given a properly set up machine, wheel, and tool rest, produce a true edge and bevel, ready for honing, on a straight square blade such as a hand chisel or blade for a hand plane.	Performance Standard 3. Ground surfaces of tools are smooth and show uniform marks from grinding wheel.	Chapter 39	Section Project 4-10
1	Given a properly set up machine, wheel, and tool rest, produce a true edge and bevel, ready for honing, on a straight square blade such as a hand chisel or blade for a hand plane.	Performance Standard 4. There is no burning or discoloration.	Chapter 39	Section Project 4-10
2	Given a bench grinder, properly set up machine to produce a true edge and bevel, ready for honing, on a straight square blade such as a hand chisel or blade for a hand plane.	Performance Standard 1. Demonstrates ability to match existing angle by adjusting tool rest so contact point is in the middle of the bevel.	Chapter 39	—
2	Given a bench grinder, properly set up machine to produce a true edge and bevel, ready for honing, on a straight square blade such as a hand chisel or blade for a hand plane.	Performance Standard 2. Demonstrates ability to blunt an edge at 90° and grind a new angle.	Chapter 39	—

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	Given a bench grinder, properly set up machine to produce a true edge and bevel, ready for honing, on a straight square blade such as a hand chisel or blade for a hand plane.	Performance Standard 3. Angle tolerance is accurate to within 0.5°.	Chapter 39	—
2	Objective	Meets Level 1 performance standard.	—	—

Grinder

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
Pre-Operation Checklist				
1	—	Performance Standard 1. Verifies the wheel is sound, without cracks or chips, dressed, and/or slightly crowned.	Chapter 39	—
1	—	Performance Standard 2. Verifies the wheel is properly guarded.	Chapter 39	—
1	—	Performance Standard 3. Verifies distance between the tool rest and the edge of the wheel does not exceed 3 mm (1/8") [0.125"].	Chapter 39	—
1	—	Performance Standard 4. Verifies tool rest is adjusted and tightened securely.	Chapter 39	—
1	—	Performance Standard 5. Ensures water for quenching is close at hand, ready to use.	Chapter 39	—
1	—	Performance Standard 6. Ensures no combustibles are within proximity to the tool.	Chapter 39	—
2	—	Performance Standard 1. Confirms the wheel is friable, renewing its abrasive under use.	Chapter 39	—
2	—	Performance Standard 2. Sets the tongue (spark arrester) to a clearance of ±1.5 mm (1/16") [0.0625"] to 6 mm (1/4") [0.25"].	Chapter 39	—

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	—	Performance Standard 3. Sets tool rest at proper angle and distance from wheel.	Chapter 39	—
2	—	Performance Standard 4. Demonstrates ability to dress and/or crown wheels.	Chapter 39	—
2	—	Meets Level 1 performance standard.	—	—
Operation—Sharpening Concave Blades				
2	Given a bench grinder, properly set up machine to produce a true edge and bevel, ready for honing, on a straight square blade such as a hand chisel or blade for a hand plane.	Performance Standard 1. Demonstrates ability to match existing angle by adjusting tool rest so contact point is in the middle of the bevel.	Chapter 39	—
2	Given a bench grinder, properly set up machine to produce a true edge and bevel, ready for honing, on a straight square blade such as a hand chisel or blade for a hand plane.	Performance Standard 2. Demonstrates ability to blunt an edge at 90° and grind a new angle.	Chapter 39	—
2	Given a bench grinder, properly set up machine to produce a true edge and bevel, ready for honing, on a straight square blade such as a hand chisel or blade for a hand plane.	Performance Standard 3. Angle tolerance is accurate to within 0.5°.	Chapter 39	—
2	Given a bench grinder, properly set up machine to produce a true edge and bevel, ready for honing, on a straight square blade such as a hand chisel or blade for a hand plane.	Performance Standard 4. Edges are sharp enough to catch when sliding across the surface of a fingernail.	Chapter 39	—

Correlation of *Modern Cabinetmaking* to Woodwork Career Alliance—page 6

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	Given a bench grinder, properly set up machine to produce a true edge and bevel, ready for honing, on a straight square blade such as a hand chisel or blade for a hand plane.	Performance Standard 5. Ground surfaces of tools are smooth and show uniform marks from grinding wheel.	Chapter 39	—
2	Given a bench grinder, properly set up machine to produce a true edge and bevel, ready for honing, on a straight square blade such as a hand chisel or blade for a hand plane.	Performance Standard 6. There is no burning or discoloration.	Chapter 39	—