

Agricultural Science I

Curriculum Guide: *Agricultural Mechanics Unit for Agricultural Science I*

Unit: IV. Tool Sharpening and Reconditioning

Unit Objective:

Students will apply principles of tool sharpening and reconditioning by participating in a tool reconditioning contest.

Show-Me Standards: 2.5, CA3

References:

Agricultural Mechanics Unit for Agricultural Science I. University of Missouri-Columbia, Instructional Materials Laboratory, 2002.

Missouri CDE Handbook. Accessed November 14, 2003, from http://www.dese.mo.gov/divcareered/ag_cde_guidelines.htm.

Missouri FFA Agricultural Mechanics Career Development Event. Accessed November 19, 2003, from <http://web.missouri.edu/~pavt0689/statecon.html>.

Instructional Strategies/Activities:

- Students will engage in study questions in lesson 1.
- Students will complete AS 1.1, Reconditioning a Center Punch; AS 1.2, Sharpening a Cold Chisel; and AS 1.3, Reconditioning a Screwdriver.
- Additional activities that relate to the unit objective can be found under the heading "Other Activities" in the following location: p. IV-3.

Performance-Based Assessment:

Students will be divided into groups. The groups will represent teams and will participate in a tool reconditioning contest that is similar to the tool sharpening and reconditioning portion of the Agricultural Mechanics Career Development Event. Each student will sharpen or recondition a common hand tool, such as a center punch, cold chisel, or screwdriver.

Assessment will be based on the ability to safely and correctly sharpen or recondition the assigned hand tool.

**Agricultural Mechanics Unit for Agricultural Science I
Unit IV—Tool Sharpening and Reconditioning
Instructor Guide**

The instructor should assign the performance-based assessment activity at the beginning of the unit. Students will work toward completing the activity as they progress through the unit lessons. The assessment activity will be due at the completion of the unit.

1. Use or adapt the activity sheets found in the unit to assess student competency at tool sharpening and reconditioning. Review or supplement these activities as needed, based on student mastery of the procedures and the tools the students will be using. **NOTE: Students should only complete this performance-based activity if they have mastered all the relevant competencies and have the instructor’s permission to perform the activity.**
2. For the performance-based assessment activity, have students apply the skills and procedures discussed in the unit by participating in a tool reconditioning contest.
3. Divide students into groups and assign each student a hand tool to sharpen or recondition.
 - a. Provide students with tools in need of sharpening or reconditioning or have students supply tools. If students supply tools, they must follow any and all school procedures for transporting tools to and from class. Inspect and approve any tools supplied by students prior to the activity.
 - b. Assign students a sharpening or reconditioning procedure that they have mastered as part of the instructional activities for this unit.
4. This activity will help prepare students for the tool sharpening and reconditioning portion of the Agricultural Mechanics Career Development Event.
 - a. Explain or review event guidelines as needed.
 - b. Refer to the *Missouri CDE Handbook* for guidelines regarding the Agricultural Mechanics Career Development Event. The *Missouri CDE Handbook* is available from the Missouri Department of Elementary and Secondary Education at http://www.dese.mo.gov/divcareered/ag_cde_guidelines.htm.

Agricultural Science I

5. Have students sharpen or recondition their assigned hand tool.
 - a. Performance in the tool sharpening contest will determine the student's individual score.
 - b. Combine the individual scores of the group members to determine the team score for each group.
6. The final assessment score will be based on the ability to safely and correctly sharpen or recondition the assigned tool.
7. Present an appropriate award to the high-scoring team and individual, if desired.
8. NOTE: The following units in this curriculum guide also include material and competencies that are addressed by the Agricultural Mechanics Career Development Event: Unit I, Common Hand Tools; Unit V, Arc Welding; and Unit VI, Oxyfuel Cutting. Some or all of the performance-based assessment activities for these units could be combined to form a mini Agricultural Mechanics Career Development Event, if desired. To conduct a mini Agricultural Mechanics Career Development Event, maintain the same student groups for all of the performance-based assessment activities. An expanded score sheet is included at the end of each of these units that can be used to track individual and group performance in the mini CDE.

**Agricultural Mechanics Unit for Agricultural Science I
Unit IV—Tool Sharpening and Reconditioning
Student Handout**

1. The instructor will divide the class into groups and assign each member of your group a tool to sharpen or recondition in a tool reconditioning contest.
2. Your group will compete in the contest as a team.
3. Sharpen or recondition your assigned hand tool.
 - Wear appropriate safety equipment at all times.
 - Follow all assigned safety procedures. You can lose points for not following safety precautions and other assigned procedures.
 - Inspect the equipment, materials, and work area to ensure safe and correct operation.
 - Sharpen or recondition the hand tool using the assigned procedure.
 - Inspect your work.
 - Follow cleanup procedures and return all tools and materials to their assigned places.
 - Turn in your work to the instructor.
4. Your final assessment score will be based on your ability to safely and correctly sharpen or recondition your assigned hand tool.

Agricultural Science I

**Agricultural Mechanics Unit for Agricultural Science I
Unit IV—Tool Sharpening and Reconditioning
Scoring Guide**

Name _____

Assessment Area	Criteria	0 Points	1 Point	2 Points	3 Points	4 Points	Weight	Total
Tool Sharpening and Reconditioning	Tool is properly sharpened or reconditioned	Failed	Poor	Fair	Good	Excellent	X 25	
Safety and Work Habits	Student followed all safety precautions	Passed				Failed	X (-25)	Negative Points *
	Student followed all assigned procedures	Excellent	Good	Fair	Poor	Failed	X (-10)	Negative Points *
TOTAL								

◆ Page 7 ◆

Final Assessment Total _____/100 pts.
* Overall combined score cannot be lower than 0.

Comments:

Agricultural Mechanics I Score Sheet

Team Members	Tool ID	Tool Sharpening/ Reconditioning	Arc Welding	Oxyfuel Cutting	Score
Team A					
					Total:
Team B					
					Total:
Team C					
					Total:
Team D					
					Total:
Team E					
					Total:
Team F					
					Total:

