

Agricultural Science II

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

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 II. 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, Dressing a Grinding Wheel; AS 1.2, Sharpening a Twist Drill; AS 1.3, Sharpening a Lawn Mower Blade; and AS 1.4, Maintaining a Chain Saw Chain.

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 perform a sharpening or reconditioning procedure presented in the unit or discussed in class, such as sharpening a twist drill or lawn mower blade or maintaining a chain saw chain.

Assessment will be based on the ability to perform the assigned sharpening or reconditioning procedure safely and correctly.

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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 sharpening or reconditioning procedure to perform. Procedures covered in the unit include sharpening a twist drill and a lawn mower blade and maintaining a chain saw chain.
 - 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.

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5. Have students sharpen or recondition their assigned 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: If desired, this activity can be combined with the performance-based assessment activities from Unit II, Arc Welding, and III, Oxyacetylene Welding, to form a mini Agricultural Mechanics Career Development Event. 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.

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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 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 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 perform the assigned sharpening or reconditioning procedure safely and correctly.

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Agricultural Mechanics Unit for Agricultural Science II 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 <u>Points</u> *
	Student followed all assigned procedures	Excellent	Good	Fair	Poor	Failed	X (-10)	Negative <u>Points</u> *
TOTAL								

Final Assessment Total _____/100 pts.

* Overall combined score cannot be lower than 0.

Comments:

Agricultural Mechanics II Score Sheet

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

