

Agricultural Science I

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

Unit: I. Common Hand Tools

Unit Objective:

Students will demonstrate an understanding of common hand tools used in woodworking and metalworking by designing, organizing, and participating in a tool identification contest.

Show-Me Standards: 1.8, CA6

References:

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

Craftsman. Accessed November 7, 2003, from www.craftsman.com/.

Missouri CDE Handbook. Accessed November 6, 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>.

Sears, Roebuck, and Co. Accessed November 25, 2003, from www.sears.com.

SK Hand Tool Corporation. Accessed November 7, 2003, from <http://www.skhandtool.com/>.

Snap-on Technologies, Inc. Accessed November 7, 2003, from <http://www.snapon.com/>.

Students may use additional outside sources to complete this activity.

Instructional Strategies/Activities:

- Students will engage in study questions in lessons 1 and 2.
- Students will complete AS 1.1, Identifying Common Woodworking Hand Tools; and AS 2.1, Identifying Common Metalworking Hand Tools.
- Additional activities that relate to the unit objective can be found under the heading "Unit I Activity" in the following location: p. I-59.

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Performance-Based Assessment:

Students will work in groups to design, organize, and participate in a tool identification contest, similar to the tool identification portion of the Agricultural Mechanics Career Development Event. Each group will be responsible for a portion of the tools in the contest and will also compete as a team in the whole event.

Assessment will be based on the content and presentation of the assigned tool display and performance in the whole event.

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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. Divide students into groups and assign each group a list of common woodworking and metalworking hand tools to collect for a tool identification contest.
 - a. Each group will also compete in the whole event as a team.
 - b. Lists should only include tools that have been discussed by the instructor with all the students as a group.
2. This activity will help prepare students for the tool identification 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.
3. Have students collect their assigned hand tools and display them at a station in the event.
4. Students may consult the instructor for assistance if they have difficulty locating specific tools, but they must be responsible for the overall content and presentation of their portion of the event. Pictures may be substituted for actual tools, if desired.
5. Verify the students' identification of their assigned tools prior to the contest and suggest corrections as needed.
6. Have students identify the tools. Use the tool identification form and tool list found in the *Missouri CDE Handbook* or use a different tool ID form, if preferred.
 - a. Have each student identify all the tools in the contest to determine the student's individual score.
 - b. Combine the individual scores of the group members to determine the team score for each group.

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7. The final assessment score will be based on the content and presentation of the assigned tool display and the student's individual contestant score.
8. Present an appropriate award to the high-scoring team and individual, if desired.
9. NOTE: The following units in this curriculum guide also include material and competencies that are addressed by the Agricultural Mechanics Career Development Event: Unit IV, Tool Sharpening and Reconditioning; 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.
10. ADDITIONAL ACTIVITIES:
 - a. Have a scavenger hunt for tools. Give each student the name of a tool in the shop. Have students locate and present their assigned tool. Guide or correct students' tool selections as needed. Have students return the tools to their assigned location following the scavenger hunt.
 - b. Have students locate pictures of tools in catalogs or from tool manufacturers' web sites. Have students paste the pictures onto index cards to make tool identification cards. Tool ID cards could be used as flash cards for review or in place of actual tools in the tool identification activity above.
 - c. For further review, an additional unit-level activity, Woodworking and Metalworking Tool Collection, is included on p. I-59 of the Instructor Guide. This activity requires students to plan a hand tool collection for the shop based on a budget set by the instructor. Students must list the tools they would purchase, answer key questions about the tools, and stay within their budget. The purpose of this activity is to familiarize students with a variety of hand tools and to emphasize the importance of choosing tools wisely and taking care of the tools that are available. Answers will vary.

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Unit I—Common Hand Tools
Student Handout

1. You will work with a group to collect woodworking and metalworking hand tools for a tool identification contest.
2. Your group will also compete in the whole event as a team.
3. You will be responsible for the content and presentation of your portion of the contest.
4. Your final assessment score will be based on the content and presentation of your assigned tool display and your individual contestant score.

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Scoring Guide

Name _____

Assessment Area	Criteria	0 Points	1 Point	2 Points	3 Points	4 Points	Weight	Total
Thoroughness and Accuracy of Contest Display	Display includes all assigned tools and tools are correctly identified	Failed	Poor	Fair	Good	Excellent	X 10	
Presentation of Contest Display	Display is well organized and eye-appealing	Failed	Poor	Fair	Good	Excellent	X 2.5	
TOTAL								/50 pts.

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Assessment Area	Total
Tool Identification Contest	/50 pts.

Final Assessment Total _____/100 pts.

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:

