

# Agricultural Science I

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

**Unit:** II. Common Power Tools

**Unit Objective:**

Students will demonstrate an understanding of the correct use of power tools by devising and giving a safety presentation for a power tool found in their class shop.

**Show-Me Standards:** 2.1, HP5

**References:**

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

Cyr, D. L., & Johnson, S. B. *Power Tool Safety*. University of Maine Cooperative Extension. Accessed November 25, 2003, from <http://www.umext.maine.edu/onlinepubs/htmlpubs/2329.htm>.

Hobar Publications. Finney-Hobar. Accessed November 10, 2003, from <http://www.finney-hobar.com/hobar.html>.

Machinery Safety. National Ag Safety Database. Accessed November 10, 2003, from [http://www.cdc.gov/nasd/menu/topic/machinery\\_safety.html](http://www.cdc.gov/nasd/menu/topic/machinery_safety.html).

Tritt, S. W. *Hand and Power Tool Safety*. Safety Information Resources on the Internet. University of Vermont. Accessed November 25, 2003, from <http://www.esf.uvm.edu/sirippt/handsafe/>.

University of Missouri Outreach and Extension Rural Safety and Health Program. Accessed November 10, 2003, from <http://www.fse.missouri.edu/ruralsafety/index1.html>.

Students may use additional outside sources to complete this activity.

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### **Instructional Strategies/Activities:**

- Students will engage in study questions in lessons 1 and 2.
- Students will complete AS 1.1, Safety and Maintenance Procedures for Power Tools for Woodworking; and AS 2.1, Safety and Maintenance Procedures for Power Tools for Metalworking.
- Additional activities that relate to the unit objective can be found under the heading “Other Activities” in the following location: p. II-9 (2).

### **Performance-Based Assessment:**

Students will work in groups to develop a safety presentation that summarizes the main parts, uses, and safety and maintenance considerations for a power tool found in their class shop. Students will give the presentation to the class.

Assessment will be based on the overall thoroughness and accuracy of the presentation. Delivery of the presentation and use of supporting material, such as illustrations, also will be factors in the assessment.

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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. Divide the class into groups and assign each group a power tool in the class shop that is used for woodworking, metalworking, or both.
2. Have each group develop a safety presentation for its assigned tool. Presentations should address the following topics:
  - Main parts
  - Uses
  - Safety features of the tool and safe operating procedures, including wearing appropriate personal protective equipment and proper setup, shutdown, and cleanup procedures
  - Basic care and maintenance
3. **NOTE: This activity is designed as an informational presentation only; it is not a hands-on demonstration. This activity is *not* a substitute for instructor training and demonstrations, shop safety tests and safety agreements, or any other safety procedures. Students should not demonstrate or operate any equipment unless they have completed all required safety tests and agreements, mastered all relevant competencies, and have the instructor's permission.**
4. Have students incorporate appropriate supporting materials into their report, such as a poster or handout outlining safety practices, examples of personal protective equipment that should be worn when using the tool, a slide show using presentation software, or a combination of elements. Indicate to students what supporting elements are acceptable or preferred.
5. Students may use material found in the unit or discussed in class as well as additional outside material to complete their presentation.
6. Students may not use the source material word for word and must provide a complete bibliography of their sources following their presentation.

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7. Review and approve each presentation before the students make their presentations to the class. Guide and correct the students' presentations as needed.
8. Have students give their safety presentations to the class.
9. Students should be prepared to answer questions about their presentations.
10. Guide and correct the students' presentations as needed.
11. The final assessment score will be based on the overall thoroughness and accuracy of the presentation. Delivery of the presentation and use of supporting material also will be factors in the assessment.

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**Student Handout**

1. The instructor will divide the class into groups and assign each group a power tool found in the class shop.
2. Develop a safety presentation for your assigned tool. Your presentation should address the following topics:
  - Main parts
  - Uses
  - Safety features of the tool and safe operating procedures, including wearing appropriate personal protective equipment and proper setup, shutdown, and cleanup procedures
  - Basic care and maintenance
3. Include appropriate supporting materials in your report, such as a poster or handout outlining safety practices, examples of personal protective equipment that should be worn when using the tool, a slide show using presentation software, or a combination of these or other elements as indicated by your instructor.
4. You may use material found in the unit or discussed in class as well as additional outside material to complete your presentation.
5. You may not use the source material word for word and must provide the instructor with a complete bibliography of your sources following your presentation.
6. The instructor must review and approve your presentation.
7. Give your presentation to the class.
8. Be prepared to answer questions about your presentation.
9. Your final assessment score will be based on the overall thoroughness and accuracy of your presentation. Delivery of the presentation and use of supporting material also will be factors in the assessment.



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**Scoring Guide**

Name \_\_\_\_\_

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Assessment Area	Criteria	0 Points	1 Point	2 Points	3 Points	4 Points	Weight	Total
Information and Content of Safety Presentation	<ul style="list-style-type: none"> <li><input type="checkbox"/> Presentation addresses main parts, uses, safety, and maintenance of the tool</li> <li><input type="checkbox"/> Information is complete</li> <li><input type="checkbox"/> Facts are accurate</li> <li><input type="checkbox"/> Good use of supporting materials</li> </ul>	0 criteria met	1 criterion met	2 criteria met	3 criteria met	4 criteria met	X 20	
Delivery of Safety Presentation	<ul style="list-style-type: none"> <li><input type="checkbox"/> Well organized</li> <li><input type="checkbox"/> Holds audience interest</li> <li><input type="checkbox"/> Speaks clearly and uses correct grammar</li> <li><input type="checkbox"/> Maintains good posture</li> <li><input type="checkbox"/> Needs little or no prompting from the instructor</li> </ul>	0 criteria met	1-2 criteria met	3 criteria met	4 criteria met	5 criteria met	X 5	
<b>TOTAL</b>								

Final Assessment Total \_\_\_\_\_/100 pts.

Comments:

