

Agricultural Construction

Curriculum Guide: *Agricultural Construction Volume II*

Unit: II. Oxy-Gas and Other Cutting/Welding Processes

Unit Objective:

Students will apply principles of oxy-gas cutting and welding and other processes, such as air carbon-arc cutting and plasma-arc cutting, by using the equipment to perform welds and cuts, identifying welding and cutting equipment, and answering questions about related equipment and procedures.

Show-Me Standards: 1.10, CA3

References:

Agricultural Construction Volume II. University of Missouri-Columbia, Instructional Materials Laboratory, 1989.

Agricultural Construction Volume III. University of Missouri-Columbia, Instructional Materials Laboratory, 2002.

American Welding Society. Accessed November 18, 2003, from <http://www.aws.org/>.

Hobart Institute of Welding Technology. Accessed November 17, 2003, from <http://www.welding.org/>.

Hypertherm, Inc. Accessed December 16, 2003, from <http://www.hypertherm.com/>.

Machinery Safety: Welding. National Ag Safety Database. Accessed November 17, 2003, from http://www.cdc.gov/nasd/menu/topic/machinery_welding.html.

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>.

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Victor. Thermadyne. Accessed December 16, 2003, from <http://www.thermadyne.com/vec/index.asp?div=vec>.

Instructional Strategies/Activities:

- Students will engage in study questions in lessons 1 through 10.
- Students will complete JS 2.1, Lighting, Adjusting, and Shutting Down the Torch; JS 4.1, Oxy-Acetylene Welds in the Flat Position; JS 4.2, Oxy-Acetylene Welding in the Horizontal Position; JS 4.3, Oxy-Acetylene Welding in the Vertical Position; JS 4.4, Oxy-Acetylene Welding in the Overhead Position; JS 5.1, Hardsurfacing With Oxy-Acetylene; JS 6.1, Welding Cast Iron; JS 7.1, Braze Welding; JS 8.1, Making Beveled Cuts; JS 8.2, Cutting Holes With Oxy-Gas; JS 9.1, Arc-Air Cutting; and JS 9.2, Plasma-Arc Cutting.
- Additional activities that relate to the unit objective can be found under the heading "Other Activities" in the following locations: p. II-6 (1, 2, 3), p. II-12, p. II-26 (1, 2, 3), p. II-37 (1, 2), p. II-112 (2), and p. II-131 (2).

Performance-Based Assessment:

Students will use the oxyacetylene, air carbon-arc, or plasma-arc outfit to perform a series of welds and cuts determined by the instructor. They will also identify parts of the welding and cutting equipment and answer questions about related equipment and procedures. This activity is modeled on the oxyacetylene portion of the Agricultural Mechanics Career Development Event.

Assessment will be based on the ability to safely and correctly perform the assigned procedures and on the accuracy of responses to the identification and written assessment portions of the activity.

Agricultural Construction Volume II Unit II—Oxy-Gas and Other Cutting/Welding Processes Instructor Guide

The instructor should explain the performance-based assessment activity format at the beginning of the unit. Students will work toward completing the competencies necessary to perform the activity as they progress through the unit material. The assessment activity will be due at the completion of the unit.

1. Explain the performance-based assessment activity format at the beginning of the unit: At the completion of the unit, students will perform a series of welds and cuts, identify welding and cutting equipment, and answer questions about welding and cutting equipment and procedures. Welds and cuts will be determined by the instructor and announced at the time of the performance-based assessment activity.
2. Use or adapt the job sheets found in the unit to assess student competency at welding and cutting with the oxyacetylene outfit and cutting with air carbon-arc and plasma-arc equipment. Review or supplement these activities as needed, based on student mastery of the procedures and equipment 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.**
3. Assign the performance-based assessment activity. The student handout can be used as an outline for the activity or adapted as desired.
 - a. Because this unit focuses on oxyacetylene procedures, the activity, as it is written, also focuses on oxyacetylene procedures and equipment. Add or substitute air carbon-arc or plasma-arc equipment and procedures as needed. For additional air carbon-arc and plasma-arc cutting information and activities, see also *Agricultural Construction Volume III, Unit I—Oxy-Gas and Other Cutting/Welding Processes: Arc Cutting and Plasma-Arc Cutting*.
 - b. Information and directions for the student handout as it is currently written are listed at the end of this instructor guide.
 - c. Section II requires some advance setup by the instructor.

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4. This activity will help prepare students for the oxyacetylene portion of the Agricultural Mechanics Career Development Event.
 - a. Refer to the *Missouri CDE Handbook* for guidelines regarding Career Development Events. 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.
 - b. Previous years' agricultural mechanics events can be found at <http://web.missouri.edu/~pavt0689/statecon.html>, accessed July 7, 2003.
5. Have students turn in their welds and cuts and completed handouts.
6. The final assessment score will be based on the ability to safely and correctly perform the assigned procedures and on the accuracy of responses to the identification and written assessment portions of the activity.
7. **ADDITIONAL ACTIVITY:** Create a display board using the students' work. Possible display board themes include the following: each student's best work using the oxyacetylene outfit, the best example of each type of procedure performed by the class, and the best work of the week.

Section I: Welding and Cutting

1. Have students perform a series of welds and cuts that they have mastered as part of the instructional activities for this unit.

Section II: Identification

1. Select ten parts of the oxyacetylene, air carbon-arc, or plasma-arc outfit or items of related equipment that have been discussed in class.
2. Label the parts or items with tags A through J.
3. Have students identify the parts on their handouts.

Section III: Written Assessment

1. Have students answer questions about oxyacetylene, air carbon-arc, or plasma-arc procedures, equipment, or safety. Multiple-choice and short-answer questions are suggested.
2. The answers to the questions on the student handout are listed below.

Answers to Written Assessment:

1. c
2. b

3. a
4. Students should list four of the following:
 - a. Use tongs or pliers to handle hot metal.
 - b. Never point the torch toward another person when lighting it.
 - c. Never hand another person a hot piece of metal or a hot torch.
 - d. The word "HOT" should be written on metal that cannot be moved to a storage area to warn other students not to touch it.
 - e. Keep hands away from the flame.
5. Students should list the following:
 - a. By the tip size stamped on the torch end of each tip
 - b. By the drill size listed in the manufacturer's information
 - c. By the diameter of the hole in the end of the tip

**Agricultural Construction Volume II
Unit II—Oxy-Gas and Other Cutting/Welding Processes
Student Handout**

Section I: Welding and Cutting

Directions:

1. The instructor will give you a series of welding and cutting procedures to perform.
2. Perform the assigned welds and cuts.
 - 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.
 - Perform the welds and cuts using the assigned procedure.
 - Inspect your work.
 - Follow shutdown and cleanup procedures and return all equipment and materials to their assigned places.
 - Turn in your work to the instructor.
3. Complete sections II and III of the activity and turn your completed handout in to the instructor.
4. Your final assessment score will be based on your ability to safely and correctly perform the assigned procedures and on the accuracy of your responses to the identification and written assessment portions of the activity.

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Section II: Identification

Directions:

Go to the identification station. Write the names of the tagged parts or items in the spaces below. Be sure to write each name next to its correct tag letter.

- | | |
|----|----|
| A. | F. |
| B. | G. |
| C. | H. |
| D. | I. |
| E. | J. |

Section III: Written Assessment

Circle the letter that corresponds to the correct answer.

1. Open the acetylene tank valve _____ so it can be shut off quickly.
 - a. 1 full turn
 - b. 3/4 turn
 - c. 1/2 turn
 - d. all the way
2. Which of the following should be used to properly light the torch?
 - a. Match
 - b. Spark lighter
 - c. Cigarette lighter
 - d. Another lit torch
3. To weld a butt joint in the horizontal position with an oxyacetylene outfit, which choice is the correct work angle and travel angle?
 - a. 5- to 10-degree work angle and a 5- to 10-degree travel angle
 - b. 15-degree work angle and a 20-degree travel angle
 - c. 5-degree work angle and a 15-degree travel angle
 - d. 10-degree work angle and a 20-degree travel angle

Complete the following short-answer questions.

4. List four ways to avoid burns when using oxyacetylene equipment. (Each answer is worth 1 point for a maximum value of 4 points.)
 - a.
 - b.
 - c.
 - d.

5. List three methods to identify torch tips. (Each answer is worth 1 point for a maximum value of 3 points.)
 - a.
 - b.
 - c.

Assessment Area		Total
Section II: Identification		
Section III: Written Assessment		
TOTAL		/20 pts.

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

Comments:

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Curriculum Guide: *Agricultural Construction Volume II*

Unit: III. Woodworking

Unit Objective:

Students will apply basic woodworking skills to make an appropriate woodworking project.

Show-Me Standards: 2.5, CA3

References:

Agricultural Construction Volume II. University of Missouri-Columbia, Instructional Materials Laboratory, 1989.

Agricultural Mechanics Building Plans. University of Missouri-Columbia, Instructional Materials Laboratory, 1994.

Agricultural Mechanics Plans (Set). University of Missouri-Columbia, Instructional Materials Laboratory.

Instructional Strategies/Activities:

- Students will engage in study questions in lessons 1 through 6.
- Students will complete JS 5.1, Using a Shaper; JS 5.2, Using a Router; JS 5.3, Using a Power Miter Box Saw; JS 5.4, Using a Reciprocating Saw; and JS 5.5, Using a Scroll Saw.
- Additional activities that relate to the unit objective can be found under the heading "Other Activities" in the following locations: p. III-5 (1, 2), p. III-18 (1, 2, 3), p. III-27 (1), p. III-29 (2, 3), p. III-36 (1), and p. III-64 (1).

Performance-Based Assessment:

Students will use common woodworking tools to lay out, cut, drill, and dress a board.

Assessment will be based on the overall quality of the work and the ability to safely and correctly complete the project within the available time.

Agricultural Construction Volume II Unit III—Woodworking 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 job sheets found in the unit to assess student competency at performing basic woodworking procedures. Review or supplement these activities as needed, based on student mastery of the procedures and the tools and materials 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 to complete an appropriate woodworking project, such as the one that accompanies this enhancement. This plan requires students to lay out, cut, drill, and dress a board.
 - a. This project can be completed using hand tools, power tools, or a combination, as desired, depending on the tools students will use while working on their class projects.
 - b. If planing is added to the list of procedures, be sure that the boards used are at least the minimum required length for the planer in your shop. The board on the project plan is 21" long prior to cutting; its finished length is 18".
3. The student handout for this activity is a Project Completion Checklist and Project Evaluation Checklist that can be used with the project. Students can use the checklists to track the progress of their project and evaluate their work. Supplement or modify the student handout to reflect actual projects as needed.
4. Have students turn in their completed projects.
5. The final assessment score will be based on the overall quality of the work and the ability to safely and correctly complete the project within the available time.

**Agricultural Construction Volume II
Unit III—Woodworking
Student Handout**

Name _____

Use the Project Completion Checklist and Project Evaluation Checklist to track the progress of your project.

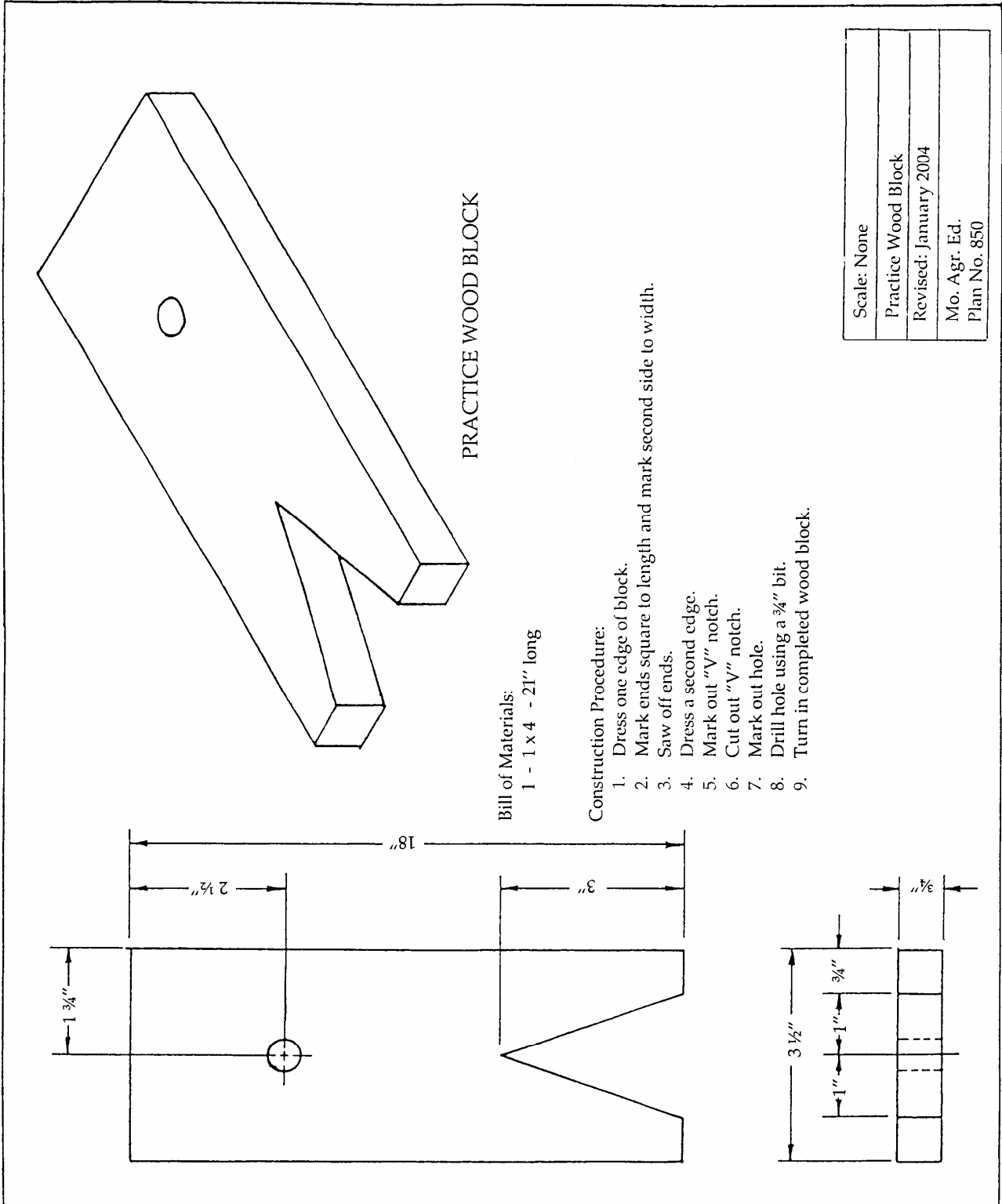
Project Completion Checklist

Procedure	Date Due
<input type="checkbox"/> Master all competencies necessary to complete the project.	
<input type="checkbox"/> Review safety precautions for tools and materials to be used. You can lose points for not following safety precautions and other assigned procedures.	
<input type="checkbox"/> Complete project procedures.	
<input type="checkbox"/> Perform a quality control inspection of the project following completion. Use the Project Evaluation Checklist.	
<input type="checkbox"/> Turn in the completed project. Your final assessment score will be based on the overall quality of the work and your ability to safely and correctly complete the project within the available time.	

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Project Evaluation Checklist

Quality Control and Shop Procedures	Criteria
Quality of Work	<ul style="list-style-type: none"><input type="checkbox"/> Holes, cut edges, and surfaces are smooth.<input type="checkbox"/> Measurements are correct.<input type="checkbox"/> Cuts are accurate.<input type="checkbox"/> Project is square and straight.<input type="checkbox"/> Work was completed on time.
Safety and Work Habits: Observe these safety procedures whenever you are in the shop.	<ul style="list-style-type: none"><input type="checkbox"/> Know how to use the equipment before you attempt to use it. Only use tools and materials the instructor has approved you to use.<input type="checkbox"/> Wear appropriate personal protective equipment.<input type="checkbox"/> Follow safety guidelines from your instructor and safety information on labels, equipment, and signs in the work area.<input type="checkbox"/> Follow assigned setup and cleanup procedures.<input type="checkbox"/> Return equipment and materials to their assigned places.<input type="checkbox"/> Do not use equipment that does not function properly.<input type="checkbox"/> Tell the instructor about any damaged or malfunctioning equipment.



Plan adapted from *Agricultural Mechanics Building Plans*. University of Missouri-Columbia: Instructional Materials Laboratory.

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**Agricultural Construction Volume II
Unit III—Woodworking
Scoring Guide**

Name _____

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Criteria	0 Points	1 Point	2 Points	3 Points	4 Points	Weight	Total
Holes, cut edges, and surfaces are smooth	Failed	Poor	Fair	Good	Excellent	X 5	
Measurements are correct	Failed	Poor	Fair	Good	Excellent	X 5	
Cuts are accurate	Failed	Poor	Fair	Good	Excellent	X 5	
Project is square and straight	Failed	Poor	Fair	Good	Excellent	X 5	
Work was completed on time	Failed	Poor	Fair	Good	Excellent	X 5	
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							

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

Comments:

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Curriculum Guide: *Agricultural Construction Volume II*

Unit: IV. Metals

Unit Objective:

Students will apply basic metalworking skills by constructing an appropriate metalworking project.

Show-Me Standards: 2.5, CA3

References:

Agricultural Construction Volume I. University of Missouri-Columbia, Instructional Materials Laboratory, 1989.

Agricultural Construction Volume II. University of Missouri-Columbia, Instructional Materials Laboratory, 1989.

Machinery Safety: Welding. National Ag Safety Database. Accessed November 17, 2003, from

http://www.cdc.gov/nasd/menu/topic/machinery_welding.html.

Instructional Strategies/Activities:

- Students will engage in study questions in lessons 1 through 10.
- Students will complete JS 9.3, Using the Drill Press as a Precision Guide for Tapping; JS 9.4, Tapping a Hole With a Drill Press; and JS 10.1, Making a Cold Chisel.
- Additional activities that relate to the unit objective can be found under the heading "Other Activities" in the following locations: p. IV-4 (1, 2), p. IV-17, p. IV-32 (2), p. IV-64, p. IV-72 (1, 2), p. IV-80 (1, 3), and p. IV-125 (2).

Performance-Based Assessment:

Students will use common equipment, materials, and procedures discussed in class to lay out and construct an appropriate metalworking project.

Assessment will be based on the overall quality of the work and the ability to safely and correctly complete the project within the available time.

Agricultural Construction Volume II Unit IV—Metals 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 working with metal. Review or supplement these activities as needed, based on student mastery of the procedures and the equipment and materials 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 to make an appropriate project out of metal. The student handout includes a procedure for making a chipping hammer.
3. The student handout also includes a Project Completion Checklist and a Project Evaluation Checklist. Students can use the checklists to track the progress of their project and evaluate their work. Supplement or modify the student handout to reflect actual projects as needed.
4. Have students turn in their completed projects.
5. The final assessment score will be based on the overall quality of the work and the ability to safely and correctly complete the project within the available time.

Agricultural Construction Volume II
Unit IV—Metals
Student Handout

Making a Chipping Hammer

Objective: Use the proper metalworking procedures to fabricate a chipping hammer.

Equipment Needed:

Oxyacetylene outfit and heating tip

AC/DC or AC welder

Anvil

Ball peen hammer

Tape measure

Metal file

Wire brush

Bench grinder

Drill press

Pliers

Gloves

Safety goggles*

Welding goggles and helmet*

*Everyone participating in or observing this procedure must wear the proper eye protection. Safety practices should be followed at all times while in the shop area.

Materials Needed:

1" x 6" hexagon or round high-carbon rod

3/8" x 7" round rod

Bucket of water

Procedure:

1. Drill a 3/8" hole in the 1" x 6" rod. Make sure the hole is centered in the rod. This is where the handle will be connected to the rod.
2. Heat the lower 2" of the 1" x 6" rod until it reaches a cherry-red color, as shown in Figure 4.1.

Caution: Hot metal should be handled with pliers. Gloves will not give adequate protection to pick up hot metal.

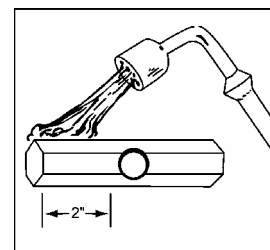


Figure 4.1

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- Use an anvil and a hammer to taper the heated end of the rod. The taper should begin on the chipping tip and end about 2" up the rod, as illustrated in Figure 4.2. The end of the tip should be $\frac{3}{16}$ " thick.

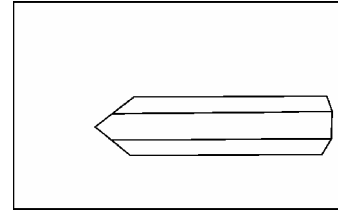


Figure 4.2

- Cool the hammer in water until the steam stops. As you are cooling the hammer, move it slightly up and down in the water to avoid causing cracks at the waterline, which can result from uneven cooling. See Figure 4.3.

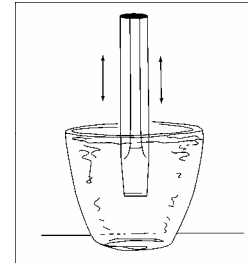


Figure 4.3

- Remove the hammer from the water. Remove the oxides that have formed on the chipping end by using a wire brush or file.
- Grind a 60° angle on the chipping end of the hammer, as shown in Figure 4.4.
- Insert the $\frac{3}{8}$ " round rod in the hole in the 1" rod and weld it where it enters and exits the larger rod, as shown in Figure 4.4.

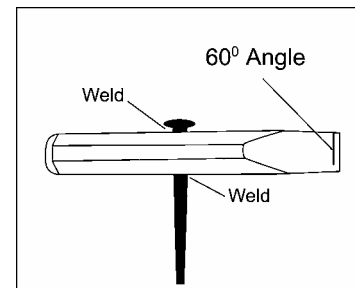


Figure 4.4

- Cool the weld and clean and examine the hammer for accuracy.
- Turn your completed chipping hammer in to the instructor for grading.

Name _____

Use the Project Completion Checklist and Project Evaluation Checklist to track the progress of your project.

Project Completion Checklist

Procedure	Date Due
<input type="checkbox"/> Master all competencies necessary to complete the project.	
<input type="checkbox"/> Receive instructor approval to build the project.	
<input type="checkbox"/> Review safety precautions for equipment and materials to be used. You can lose points for not following safety precautions and other assigned procedures.	
<input type="checkbox"/> Complete project construction.	
<input type="checkbox"/> Perform a quality control inspection of the project following completion. Use the Project Evaluation Checklist.	
<input type="checkbox"/> Turn in the completed project. Your final assessment score will be based on the overall quality of the work and your ability to safely and correctly complete the project within the available time.	

Project Evaluation Checklist

Quality Control and Shop Procedures	Criteria
Quality of Work	<ul style="list-style-type: none"><input type="checkbox"/> Chipping tip is properly tapered and ground.<input type="checkbox"/> Handle is centered.<input type="checkbox"/> Weld appearance indicates correct speed of travel, amperage setting, and arc length.<input type="checkbox"/> Welds are strong and sound.<input type="checkbox"/> Measurements are correct.<input type="checkbox"/> Project is good enough to sell.<input type="checkbox"/> Work was completed on time.
Safety and Work Habits: Observe these safety procedures whenever you are in the shop.	<ul style="list-style-type: none"><input type="checkbox"/> Know how to use the tools and materials before you attempt to use them. Only use tools and materials the instructor has approved you to use.<input type="checkbox"/> Wear appropriate personal protective equipment.<input type="checkbox"/> Follow safety guidelines from your instructor and safety information on labels, equipment, and signs in the work area.<input type="checkbox"/> Follow assigned setup and cleanup procedures.<input type="checkbox"/> Return equipment and materials to their assigned places.

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Unit IV—Metals
Scoring Guide**

Name _____

Criteria	0 Points	1 Point	2 Points	3 Points	4 Points	Weight	Total
Chipping tip is properly tapered and ground	Failed	Poor	Fair	Good	Excellent	X 6	
Handle is centered	Failed	Poor	Fair	Good	Excellent	X 3	
Weld appearance indicates correct speed of travel, amperage setting, and arc length	Failed	Poor	Fair	Good	Excellent	X 2	
Welds are strong and sound	Failed	Poor	Fair	Good	Excellent	X 4	
Measurements are correct	Failed	Poor	Fair	Good	Excellent	X 5	
Project is good enough to sell	Failed	Poor	Fair	Good	Excellent	X 3	
Work was completed on time	Failed	Poor	Fair	Good	Excellent	X 2	
Student followed all safety precautions	Passed				Failed	X (-25)	<u>Negative Points</u> *
Student followed all assigned procedures	Excellent	Good	Fair	Poor	Failed	X (-10)	<u>Negative Points</u> *
TOTAL							

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

Comments:

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Curriculum Guide: *Agricultural Construction Volume II*

Unit: V. Finishing

Unit Objective:

Students will apply principles of painting by preparing, priming, and finishing a project.

Show-Me Standards: 2.5, CA3

References:

Agricultural Construction Volume II. University of Missouri-Columbia, Instructional Materials Laboratory, 1989.

Healthy Indoor Painting Practices. U. S. Consumer Product Safety Commission. Accessed November 25, 2003, from <http://www.cpsc.gov/cpscpub/pubs/456.pdf>.

Safe Use, Storage and Disposal of Paint. Household Hazardous Waste Project. MU Extension. University of Missouri-Columbia. Accessed November 20, 2003, from <http://muextension.missouri.edu/explore/wasteman/wm6001.htm>.

Instructional Strategies/Activities:

- Students will engage in study questions in lessons 1 through 4.
- Additional activities that relate to the unit objective can be found under the heading “Other Activities” in the following locations: p. V-5 (1, 4), p. V-15 (1), and p. V-27 (1).

Performance-Based Assessment:

Students will use equipment and materials discussed in class, such as sandpaper, brushes, and rollers, to prepare the surface of a project, prime the project, and paint it. Acceptable projects would include those made for the Agricultural Construction class or outside projects that the instructor determines are appropriate for the curriculum.

Assessment will be based on the overall quality of the work and the ability to safely and correctly complete the project within the available time.

Agricultural Construction Volume II Unit V—Finishing 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 the study questions and handouts in the unit to explain basic principles of painting. Review or supplement the material as needed, based on student mastery of these procedures and the equipment 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 activity, have students apply the skills and procedures discussed in the unit by preparing the surface of a project, priming the project, and painting it.
 - a. Choose projects based on the skill level of the students and the time available to work on the project. For example, if students built projects for the Agricultural Construction class, have them prepare, prime, and finish these projects.
 - b. If students bring in outside projects to be painted, screen these projects to determine if they are appropriate for the curriculum and can be completed in the time available.
3. Have students choose appropriate primer, paint, and other necessary supplies. Review and approve students' material and equipment selections before they begin working.
4. The student handout for this activity is a Project Completion Checklist and Project Evaluation Checklist. Students can use the checklists to track the progress of their project and evaluate their work. Supplement or modify the student handout to reflect actual projects as needed.
5. Have students turn in their completed projects.
6. The final assessment score will be based on the overall quality of the work and the ability to safely and correctly complete the project within the available time.

**Agricultural Construction Volume II
Unit V—Finishing
Student Handout**

Name _____

Use the Project Completion Checklist and Project Evaluation Checklist to track the progress of your project.

Project Completion Checklist

Procedure	Date Due
<input type="checkbox"/> Master all competencies necessary to complete the project.	
<input type="checkbox"/> Receive instructor approval for the materials and equipment you plan to use. Are they appropriate for the project?	
<input type="checkbox"/> Review safety precautions for the materials and equipment you will use. You can lose points for not following safety procedures.	
<input type="checkbox"/> Prepare the project surface.	
<input type="checkbox"/> Apply the primer coat.	
<input type="checkbox"/> Paint the project.	
<input type="checkbox"/> Clean all equipment using the appropriate cleaner. Return the equipment and materials to their proper place and dispose of rags and other hazardous materials properly. You can lose points for not following assigned cleanup procedures.	
<input type="checkbox"/> Perform a quality control inspection of the project following completion. Use the Project Evaluation Checklist.	
<input type="checkbox"/> Turn in the completed project. Your final assessment score will be based on the overall quality of the work and your ability to safely and correctly complete the project within the available time.	

Project Evaluation Checklist

Quality Control and Shop Procedures	Criteria
Quality of Work	<ul style="list-style-type: none"><input type="checkbox"/> Surface was properly prepared.<input type="checkbox"/> Primer is appropriate for the project.<input type="checkbox"/> Primer is properly applied.<input type="checkbox"/> Paint is appropriate for the project.<input type="checkbox"/> Paint is properly applied.<input type="checkbox"/> Paint job is of high quality and pleasing to the eye.<input type="checkbox"/> Project is good enough to sell.<input type="checkbox"/> Work was completed on time.
Safety and Work Habits: Observe these safety procedures whenever you are in the shop.	<ul style="list-style-type: none"><input type="checkbox"/> Know how to use the equipment and materials before you attempt to use them. Only use equipment and materials the instructor has approved you to use.<input type="checkbox"/> Wear appropriate personal protective equipment.<input type="checkbox"/> Follow safety guidelines from your instructor and safety information on labels, equipment, and signs in the work area.<input type="checkbox"/> Do not use primers, finishes, or other products with missing or unreadable labels.<input type="checkbox"/> Follow assigned setup and cleanup procedures.<input type="checkbox"/> Return equipment and materials to their assigned places.

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**Agricultural Construction Volume II
Unit V—Finishing
Scoring Guide**

Name _____

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Criteria	0 Points	1 Point	2 Points	3 Points	4 Points	Weight	Total
Surface was properly prepared	Failed	Poor	Fair	Good	Excellent	X 3	
Primer is appropriate and properly applied	Failed	Poor	Fair	Good	Excellent	X 5	
Paint is appropriate and properly applied	Failed	Poor	Fair	Good	Excellent	X 5	
Paint job is of high quality and pleasing to the eye	Failed	Poor	Fair	Good	Excellent	X 5	
Project is good enough to sell	Failed	Poor	Fair	Good	Excellent	X 5	
Work was completed on time	Failed	Poor	Fair	Good	Excellent	X 2	
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							

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

Comments:

