

Agricultural Construction

Curriculum Guide: *Agricultural Construction Volume I*

Unit: VI. Project Construction

Unit Objective:

Students will demonstrate an understanding of the skills and procedures necessary to build a project by selecting an appropriate project; devising elevation drawings, a bill of materials, and a plan of procedure for the project; and applying their plan to complete the project within the allotted time.

Show-Me Standards: 2.5, MA2

References:

Agricultural Construction Volume I. 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.

Master Plans Trailer Plans Store. Accessed December 15, 2003, from <http://www.trailerplans.com/>.

Instructional Strategies/Activities:

- Students will engage in study questions in lessons 1 through 14.
- Students will complete HO 2.1, Project Construction Check List; WS 3.1, Estimated Bill of Materials; WS 3.3, Where Are Materials Obtained?; WS 4.1, List of Tools and Procedures; WS 4.2, Tools – Safety Precautions; WS 5.1, Time Estimation Sheet; WS 6.1, Interpreting the Project Plan for a Pipe Sawhorse; WS 10.1, Quality Control – Project Evaluation Check List; WS 13.1, Actual Costs of Materials and Labor; and WS 14.1, Hand and Power Tools Used in Completing a Project.
- Additional activities that relate to the unit objective can be found under the heading “Other Activities” in the following locations: p. VI-5 (1, 3, 4), p. VI-15 (2), pp. VI-25–VI-26 (2, 3), p. VI-41 (1, 2, 3, 4), p. VI-51 (1, 2), p. VI-57 (1, 2), p. VI-68 (2, 4), p. VI-79 (1, 2, 3), p. VI-91 (2, 3, 4), p. VI-99 (1, 3, 4), p. VI-118 (2, 3), and p. VI-131 (1, 2).

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Performance-Based Assessment:

As part of the instructional strategies and activities for this unit, students will complete an estimated bill of materials, a list of tools and procedures and safety precautions, and a time estimation sheet for sample project plans included with the unit. For the performance-based assessment activity, students will apply the skills and procedures discussed in the unit to select, plan, and complete an appropriate 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.

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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. As part of the instructional strategies and activities for this unit, students will complete an estimated bill of materials, a list of tools and procedures and safety precautions, and a time estimation sheet for sample project plans included with the unit.
2. For the performance-based assessment activity, have students apply the skills and procedures discussed in the unit to choose and complete an appropriate project. Use the handouts and work sheets in the unit to help students select, plan, and complete their projects. **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. The student handout for this activity is a checklist that includes key steps in the project completion process based on the handouts and worksheets included in the unit.
 - a. Students can use the checklist to track the progress of their project and ensure that they perform the necessary steps in the proper sequence.
 - b. Supplement or modify the student handout to reflect projects or assignments as needed.
4. Have students turn in their completed project.
5. A scoring guide based on WS 10.1, Quality Control – Project Evaluation Check List, is included with this activity that can be used to assess students’ projects.
 - a. Because this performance-based activity represents a more comprehensive project than other unit activities, the number of points possible has been set at 500 instead of 100.
 - b. Adjust the total point values, assessment criteria, and weight as needed.
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.

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Student Handout**

Name _____

Project Completion Checklist

Use the checklist below to track the progress of your project.

Procedure	Date Due
<input type="checkbox"/> Complete Lesson 1: Safety Procedures for Project Construction.	
<input type="checkbox"/> Complete and turn in HO 2.1, Project Construction Check List.	
<input type="checkbox"/> Complete and turn in WS 3.1, Estimated Bill of Materials.	
<input type="checkbox"/> Turn in signed Parental Permission Form, WS 3.2.	
<input type="checkbox"/> Complete elevation drawings for the project.	
<input type="checkbox"/> Develop a plan of procedure and list of tools needed.	
<input type="checkbox"/> Review safety precautions for the tools to be used. You can lose points for not following safety precautions and other assigned procedures.	
<input type="checkbox"/> Complete and turn in WS 5.1, Time Estimation Sheet.	
<input type="checkbox"/> Perform a quality control inspection of the project during construction. Use WS 10.1.	
<input type="checkbox"/> Complete project construction.	
<input type="checkbox"/> Prepare the surface and apply the finish.	
<input type="checkbox"/> Perform a quality control inspection of the project following completion. Use WS 10.1.	
<input type="checkbox"/> Complete and turn in WS 13.1, Actual Cost of Materials and Labor.	
<input type="checkbox"/> Complete and turn in WS 14.1, Hand and Power Tools Used in Completing a Project.	
<input type="checkbox"/> Turn in the completed project.	

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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
Quality of Work	<input type="checkbox"/> Fasteners are appropriate <input type="checkbox"/> Measurements are accurate <input type="checkbox"/> Parts fit for maximum strength <input type="checkbox"/> Tools and equipment were used correctly	Failed	Poor	Fair	Good	Excellent	X 50	
Project Design	<input type="checkbox"/> Reinforcement is sufficient <input type="checkbox"/> Clearances are sufficient <input type="checkbox"/> Materials are appropriate <input type="checkbox"/> Project is proportional and pleasing to the eye	Failed	Poor	Fair	Good	Excellent	X 25	
Project Suitability	<input type="checkbox"/> Correct size for use <input type="checkbox"/> Suitable for purpose <input type="checkbox"/> Salable <input type="checkbox"/> Clean and presentable	Failed	Poor	Fair	Good	Excellent	X 25	
Finish Application	<input type="checkbox"/> Surface was properly prepared <input type="checkbox"/> Primer and finish are appropriate <input type="checkbox"/> Primer and finish are properly applied <input type="checkbox"/> Finish application is high quality	Failed	Poor	Fair	Good	Excellent	X 25	
Safety and Work Habits	Student followed all safety precautions	Passed				Failed	X (-125)	Negative Points *
	Student followed all assigned procedures	Excellent	Good	Fair	Poor	Failed	X (-50)	Negative Points *
TOTAL								

Final Assessment Total _____/500 pts.

* Overall combined score cannot be lower than 0.

Comments:

