

## DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Building Construction

Course Code:

### **COURSE INTRODUCTION:**

This course includes electrical wiring, electrical motors, concrete masonry, plumbing and sewage disposal, farm fences, product handling and processing equipment, and farm buildings. (CD 016720, CIP 01.0201)

Course Rationale – Agriculture encompasses the food, fiber, conservation and natural resource systems, employing over 20% of the nation's workforce. Basic construction skills and knowledge in electricity, plumbing, concrete, and masonry are necessary for the building of agricultural structures.

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<b>UNIT DESCRIPTION:</b>  Students will learn about agricultural building construction and understand correct, safe, building construction procedures and materials.		<b>SUGGESTED UNIT TIMELINE: 12 WEEKS</b>  <b>CLASS PERIOD (min.): 50 MINUTES</b>				
<b>ESSENTIAL QUESTIONS:</b>  <b>1. What are the essential and proper building methods used in agriculture building construction?</b>						
ESSENTIAL MEASURABLE LEARNING OBJECTIVES	CCSS LEARNING GOALS (Anchor Standards/Clusters)	CROSSWALK TO STANDARDS				
		GLEs/CLEs	PS	CCSS	AFNR Standards	DOK
1. Describe safety practices associated with building construction.				RST11-12.9 L11-12.6 SL11-12.4	PST.01.01 PST.01.03 PST.02.01 PST.03.04 PST.04.01 PST.04.02 PST.04.03 PST.05.01 PST.05.03	2
2. Identify types and designs of buildings and their methods of construction.				N-Q.1 G-CO.1 G-GPE.5 SL11-12.1.a RST11-12.4 RST11-12.9 L11-12.6	PST.01.01 PST.01.03 PST.02.01 PST.03.04 PST.04.01 PST.04.02 PST.04.03 PST.05.01 PST.05.03	2

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3. Identify and select building materials.				SL11-12.1.a RST11-12.9 L11-12.6	PST.01.01 PST.01.03 PST.02.01 PST.03.04 PST.04.01 PST.04.02 PST.04.03 PST.05.01 PST.05.03	<b>2</b>
4. Identify the uses of different fasteners and fastening systems.				N-Q.1 G-CO.1 G-GPE.5 SL11-12.1.a RST11-12.9 L11-12.6	PST.01.01 PST.01.03 PST.02.01 PST.03.04 PST.04.01 PST.04.02 PST.04.03 PST.05.01 PST.05.03	<b>2</b>
5. Describe how to construct a floor and subfloor.				N-Q.1 G-CO.1 G-GPE.5 RST11-12.9 L11-12.6 SL11-12.4	PST.01.01 PST.01.03 PST.02.01 PST.03.04 PST.04.01 PST.04.02 PST.04.03 PST.05.01 PST.05.03	<b>2</b>
6. Describe the purpose of walls, types of walls, supports, and siding used in agricultural				N-Q.1 G-CO.1	PST.01.01 PST.01.03	<b>2</b>

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buildings.				G-GPE.5 RST11-12.9 L11-12.6 SL11-12.4	PST.02.01 PST.03.04 PST.04.01 PST.04.02 PST.04.03 PST.05.01 PST.05.03	
7. Select a roof support system.				N-Q.1 G-CO.1 G-GPE.5 RST11-12.9	PST.01.01 PST.01.03 PST.02.01 PST.03.04 PST.04.01 PST.04.02 PST.04.03 PST.05.01 PST.05.03	<b>2</b>
8. Select roofing materials.				RST11-12.9	PST.01.01 PST.01.03 PST.02.01 PST.03.04 PST.04.01 PST.04.02 PST.04.03 PST.05.01 PST.05.03	<b>2</b>
9. Identify factors affecting the heating, cooling, and ventilation of agricultural structures.				N-Q.1 G-CO.1 G-GPE.5 RST11-12.9	PST.01.01 PST.01.03 PST.02.01 PST.03.04 PST.04.01 PST.04.02	<b>2</b>

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					PST.04.03 PST.05.01 PST.05.03	
<b>10.</b> Demonstrate an understanding of correct building construction procedures by laying out joists and rafters, applying roofing skills, and answering questions about roofing materials.				N-Q.1 G-CO.1 G-GPE.5 RST11-12.9 L11-12.6 WHST11-12.2	PST.01.01 PST.01.03 PST.02.01 PST.03.04 PST.04.01 PST.04.02 PST.04.03 PST.05.01 PST.05.03	<b>3</b>
<p><b>ASSESSMENT DESCRIPTIONS*:</b> (Write a brief overview here. Identify Formative/Summative. Actual assessments will be accessed by a link to PDF file or Word doc. )</p> <p>Students will lay out joists and rafters, use roofing skills to apply model shingles, and answer key questions about applying roofing materials.</p> <p>Assessment will be based on the ability to safely and correctly perform the assigned procedures and to answer questions about applying roofing materials.</p> <p><b>*Attach Unit Summative Assessment, including Scoring Guides/Scoring Keys/Alignment Codes and DOK Levels for all items. Label each assessment according to the unit descriptions above ( i.e., Grade Level/Course Title/Course Code, Unit #.)</b></p>						
<b>Obj. #</b>	<b>INSTRUCTIONAL STRATEGIES (research-based):</b> (Teacher Methods)					
1-10	1. Lecture, Discussion, Study Questions, and Group and Individual Project Work					
1-10	2. Group and Individual Project Work, Presentations, and Evaluation of Projects by Peers and Teacher					
1-10	3. Optional – Field Trip to Farm Sites					
<b>Obj. #</b>	<b>INSTRUCTIONAL ACTIVITIES:</b> (What Students Do)					

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1-10	1. Students will engage in study questions in lessons 1 through 9.
1-10	2. Students will complete “AS 1.1, Safety on the Construction Site”; “AS 2.1, Identifying Building Designs”; “AS 3.1, Construction Materials”; “AS 4.1, Identifying Fasteners”; “AS 5.1, Diagramming Flooring”; “JS 5.1, Joist Layout”; “AS 6.1, Wall Construction”; “JS 7.1, Rafter Layout”; “AS 8.1, Applying Roofing Materials”; and “AS 10.1, Heating, Cooling, and Ventilation Needs.”
	3. Additional activities that relate to the unit objective can be found under the heading “Other Activities” in the following locations: p. III-4, p. III-15, p. III-25 (1), p. III-37, p. III-71, p. III-88, and p. III-113 (1, 2).
<b>UNIT RESOURCES: (include internet addresses for linking)</b> <ul style="list-style-type: none"> <li>• <i>Agricultural Structures</i>. University of Missouri-Columbia, Instructional Materials Laboratory, 1999.</li> <li>• Agriculture Publications. MU Extension. University of Missouri-Columbia. Accessed January 17, 2012, from <a href="http://muextension.missouri.edu/explore/agguides/">http://muextension.missouri.edu/explore/agguides/</a>.</li> <li>• CEV Multimedia. Accessed December 4, 2003, from <a href="http://www.cevmultimedia.com">http://www.cevmultimedia.com</a></li> <li>• Cook, J. B., &amp; Nickolaus, G. F. <i>Basic Procedures in Administration of Zoning Regulations: Appeals</i>. MU Extension. University of Missouri-Columbia. Accessed January 17, 2012, from <a href="http://muextension.missouri.edu/explore/commdm/dm7613.htm">http://muextension.missouri.edu/explore/commdm/dm7613.htm</a>.</li> <li>• Cook, J. B., &amp; Nickolaus, G. F. <i>Basic Procedures in Administration of Zoning Regulations: Making Applications</i>. MU Extension. University of Missouri-Columbia. Accessed January 17, 2012, from <a href="http://muextension.missouri.edu/explore/commdm/dm7612.htm">http://muextension.missouri.edu/explore/commdm/dm7612.htm</a>.</li> <li>• Local regulatory agencies, such as the planning and development department, public works department, and county board of commissioners</li> </ul>	