

Name: \_\_\_\_\_

## Agricultural Structures

**Directions:**

Evaluate the student by checking the appropriate number or letter to indicate the degree of competency. The rating for each task should reflect **employability readiness** rather than the grades given in class.

**Rating Scale:**

- 3 Mastered** – can work independently with no supervision
- 2 Requires Supervision** – can perform job completely with limited supervision
- 1 Not Mastered** – requires instruction and close supervision
- N No Exposure** – no experience or knowledge in this area

NOTE: All competencies involving safety require a Number 3 Rating.

3	2	1	N	A. Working with Plans	Notes:
				1. Read and create a simple construction drawing	
				2. Develop a plan of procedure and a bill of materials for a construction project	
				Unit: Demonstrate an understanding of the importance planning has on effective work procedure by drawing a construction plan and developing a plan of procedure, a cutting bill of materials, and a purchasing bill of materials.	
				Other:	

3	2	1	N	B. Farmstead Planning	Notes:
				1. Evaluate a site for a home	
				2. Arrange a farmstead	
				3. Describe characteristics of disposal systems for managing livestock manure	
				Unit: Apply principles of farm and homestead planning by devising a farmstead plan and explaining their design decisions in paragraph form.	
				Other:	

3	2	1	N	C. Building Construction	Notes:
				1. Describe safety practices associated with building construction	
				2. Identify types and designs of buildings and their methods of construction	
				3. Identify and select building materials	
				4. Identify the uses of different fasteners and fastening systems	
				5. Describe how to construct a floor and subfloor	
				6. Describe the purpose of walls, types of walls, supports, and siding used in agricultural buildings	
				7. Select a roof support system	
				8. Select roofing materials	
				9. Identify factors affecting the heating, cooling, and ventilation of agricultural structures	
				Unit: Demonstrate an understanding of correct building construction procedures by laying out joists	

				and rafters, applying roofing skills, and answering questions about roofing materials.	
				Other:	

3	2	1	N	D. Concrete	Notes:
				1. Discuss safety in working with concrete	
				2. Identify factors that affect the quality of fresh concrete	
				3. Identify site preparation requirements	
				4. Describe the procedure for preparing to pour a concrete slab	
				5. Explain the procedure for ordering, pouring, and finishing concrete	
				6. Identify factors affecting the quality of cured concrete	
				7. Describe the procedure for pouring a concrete wall	
				Unit: Apply principles of correct concrete construction procedures by making a concrete patio block.	
				Other:	

3	2	1	N	E. Electricity	Notes:
				1. Identify the dangers and safety practices associated with electrical work	
				2. Identify the terms associated with electrical work	
				3. Match types and sizes of wire and their uses	
				4. Identify the importance of grounding and GFCI protection	
				5. Locate lights, outlets, and switches, and identify circuit protection needs	
				6. Identify the symbols used in agricultural wiring plans	
				7. Describe practices for running wire to an agricultural structure and wiring within the building safely	
				8. Identify procedures for connecting the drop wires and branch circuit wires to the SEP	
				9. Describe how to run wiring from the SEP to a junction box, lights, and receptacles	
				10. Calculate cost and electrical power using Ohm's Law	
				11. Describe procedures for planning and installing lighting protection	
				12. Identify problems in electrical systems	
				Unit: Demonstrate an understanding of how to work with electricity and wiring by diagramming a wiring plan for an agricultural structure, identifying sources of electrical grounding in the structure, and completing a bill of materials for the project.	
				Other:	

3	2	1	N	<b>F. Plumbing</b>	<b>Notes:</b>
				1. Calculate how much water is needed for a farmstead	
				2. Discuss safety practices for plumbing	
				3. Identify pipe types and determine size requirements	
				4. Measure, cut, and connect pipes and tubing	
				5. Identify methods of protecting water pipes against freezing	
				Unit: Demonstrate an understanding of plumbing equipment and procedures by applying different techniques to join dissimilar types of pipe—copper, PVC, CPVC, and black iron.	
				Other:	

3	2	1	N	<b>G. Fencing</b>	<b>Notes:</b>
				1. Discuss the terminology, dangers, and safety practices associated with building fences	
				2. Describe how to set and brace wood and steel posts	
				3. Describe techniques for building barbed and woven wire fences	
				4. Describe techniques for building high tensile and electric fences	
				5. Identify fence mending techniques	
				Unit: Apply principles of correct fence installation by devising a fencing plan that complies with local codes and includes the materials used, cost, and layout of the fence.	
				Other:	

3	2	1	N	<b>H. Leadership and Personal Development for Advanced Students</b>	<b>Notes:</b>
				1. Develop a resume and complete a job application	
				2. Develop a plan for finding a job	
				3. Describe how to apply and interview for a job	
				4. Describe the characteristics needed to develop desirable personal and social skills	
				5. Describe the importance and process of developing better human relationships	
				Unit: Unit: Explore a career area by investigating entry-level job opportunities at a local agricultural business and writing a résumé and letter of application for a position	
				Other:	

3	2	1	N	<b>D. Using the Missouri Agricultural Record Book for Secondary Students</b>	<b>Notes:</b>
				1. Complete forms needed to open the Missouri Agricultural Record Book for Secondary Students	
				2. Complete a budget for the SAE program	
				3. Complete inventory and financial statement forms for the Missouri Agricultural Record Book for Secondary Students	
				4. Complete receipt and expenditure forms in the	

			Missouri Agricultural Record Book for Secondary Students	
			5. Complete additional forms in the Missouri Agricultural Record Book for Secondary Students	
			Unit: Demonstrate the ability to use selected forms in the <i>Missouri Agricultural Record Book for Secondary Students</i> by using a list of sample entries to complete the applicable forms in the book.	
			Other:	