

Name: _____

Agricultural Construction

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.

NOTE: **Pass destruction test.

3	2	1	N	
				1. The student has mastered the related competencies of Agriculture Science I.
				2. The student has mastered the related competencies of Agriculture Science II.

3	2	1	N	A. Arc Welding	Notes:
				1. List the safety procedures for arc welding	
				2. Identify the various types of metals and their properties	
				3. Prepare metals for welding by cutting, grinding, and/or cleaning	
				4. Weld in all positions with stick welder [Shielded Metal Arc Welding]	
				** a. Weld in flat position using 6010 and 7018	
				** b. Weld in horizontal position using 6010, 6011, and 7018	
				** c. Weld in vertical up position using 6010, 6011, and 7018	
				** d. Weld in vertical down position using 6010, 6011, and 7018	
				** e. Weld in overhead position using 6010, 6011, and 7018	
				5. Weld in all positions with MIG welder [Gas Metal Arc Welding]	
				** a. Weld in flat position using E-70S-3 and E-71S-3	
				** b. Weld in vertical position using E-70S-3 and E-71S-3	
				** c. Weld in horizontal position using E-70S-3 and E-71S-3	
				d. Weld in overhead position using E-70S-3 and E-71S-3	
				6. Weld in all positions with TIG welder [Gas Tungsten Arc welding]	
				a. Weld in flat position	
				b. Weld in vertical position	
				c. Weld in horizontal position	
				d. Weld in overhead position	
				7. Hardsurface areas where extensive wear may occur	
				8. Weld cast iron	
				9. Weld pipe	

					Unit: Apply principles of arc welding by performing common welds, identifying welding equipment, and answering welding-related questions.
					Other:

3	2	1	N	B. Oxy-Gas and Other Cutting/Welding Processes	Notes:
				1. List the safety procedures required for using oxy-acetylene equipment	
				2. Perform in order the complete procedure for lighting, adjusting the flame and shutdown of the torch	
				3. Select appropriate tip for the job to be performed	
				4. Weld in all positions with oxy-gas welder <ul style="list-style-type: none"> a. Weld in flat position b. Weld in horizontal position c. Weld in vertical position d. Weld in overhead position 	
				5. Perform a hardsurfacing operation	
				6. Weld cast iron using rod and flux	
				7. Perform a braze weld operation	
				8. Perform cutting with oxy-gas	
				9. Perform cutting with arc-air	
				10. Cut using the motorized torch	
				11. Cut metal using air carbon-arc and plasma arc cutting processes	
				Unit: 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.	
				Other:	

3	2	1	N	C. Woodworking	Notes:
				1. Identify common woods used in agricultural construction	
				2. Select the proper fastener for a specific job	
				3. List the actual and nominal dimensions of common construction lumber	
				4. Use hand woodworking tools <ul style="list-style-type: none"> a. _____ b. _____ c. _____ d. _____ e. _____ f. _____ g. _____ h. _____ i. _____ 	
				5. Use power woodworking tools	

					a. _____ b. _____ c. _____ d. _____ e. _____ f. _____ g. _____ h. _____ i. _____	
					6. Select preservatives	
					Unit: Apply basic woodworking skills to make an appropriate woodworking project.	
					Other:	

3	2	1	N	D. Metals	Notes:
				1. Select metals by design and strength	
				2. Explain how construction metal is dimensioned	
				3. Remove stress risers	
				4. Identify common metal fasteners	
				5. Identify the hardness grade of a bolt	
				6. Control heat distortion of metals	
				7. Assemble work using proper locks and fasteners	
				8. Use heat to shape metals	
				9. Use tap and die set to do threading	
				10. List steps used in tempering, annealing, hardening, wrinkle bending, normalizing, and welding to control crystallization	
				Unit: Apply basic metalworking skills by constructing an appropriate metalworking project.	
				Other:	

3	2	1	N	E. Finishing	Notes:
				1. Prepare surfaces for finishing	
				2. Select the primer to use before painting the surface	
				3. Select the paint to use in the finishing operation	
				4. List the steps for cleanup after finishing operation is complete	
				Unit: Apply principles of painting by preparing, priming, and finishing a project.	
				Other:	

3	2	1	N	F. Project Construction	Notes:
				1. List the safety procedures for project construction	
				2. Select project and design a project plan	
				3. Develop a bill of materials and a projected cost list	
				4. List tools needed to complete a project and list safety precautions	

				5. Determine the time frame for completion of a project	
				6. Interpret a project construction plan	
				7. Lay out and prepare materials for cutting	
				8. Determine construction design for proper hitching and balancing	
				9. Determine construction design for legal specifications: width, length, weight, etc.	
				10. Identify and correct project defects by approved methods	
				11. Perform assembly procedures	
				12. Describe why a project should have a finish	
				13. Determine actual cost of materials and labor for project	
				14. Use hand and power tools in completing a project a. _____ b. _____ c. _____ d. _____ e. _____ f. _____ g. _____ h. _____ i. _____ j. _____ k. _____ l. _____ m. _____ n. _____ o. _____	
				Unit: 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.	
				Other:	

3	2	1	N	G. Leadership and Personal Development for Advanced Students	Notes:
				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: 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	D. Using the <i>Missouri Agricultural Record Book for Secondary Students</i>	Notes:
				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:	