Name: _____ **Agricultural Science II**

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. Career and Personal Development II	Notes:
				1. Describe the steps which should be taken in choosing a career and planning for occupational entry and advancement	
				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 a desirable personality	
				5. Describe the importance and process of developing human relationship skills	
				Unit: Demonstrate an understanding of career and personal development by creating a personal development plan that reflects self-confidence, personal responsibility, and good human relations.	
				Other:	

3	2	1	N	B. Leadership and the FFA II	Notes:
				1. Describe the importance of good decision-making skills	
				2. Describe the responsibilities of members of an organization	
				3. Describe the major parts of the FFA Program of Activities	
				4. Describe the techniques involved in communicating in groups	
				5. Prepare and deliver a presentation	
				6. Demonstrate the use of parliamentary procedure in a meeting	
				Unit: Familiarize themselves with activities related to FFA by developing, organizing, and presenting a panel discussion on a general theme related to an aspect of FFA.	
				Other:	

3	2	1	N	C. Analyzing the SAE Program	Notes:
				1. Complete summary forms in Missouri Agricultural Record Book for Secondary Students	
				2. Complete the analysis forms in the Missouri Agricultural Record Book for Secondary Students	
				3. Analyze and evaluate the SAE program	

				4. Identify awards that may be earned as a result of the SAE program	
				5. Determine if and when the Missouri Farm Business Record Book should be used	
				Unit: Demonstrate an understanding of the process and value of analyzing SAE data by completing an FFA State Proficiency Award application.	
				Other:	

3	2	1	N	D. Soils	Notes:
				1.Explain the importance of soil	
				2. Describe how soils are formed	
				3. Explain the importance of soil color	
				4. Explain the importance of soil texture	
				5. Explain the importance of soil structure	
				6. Describe a soil profile	
				7. Explain how plants exchange anions for cations	
				8. Identify what plants get from the soil to be healthy and what gives maximum yields	
				9. Prepare a soil sample for analysis	
				10. Evaluate the effects of soil on water	
				11. Describe the various site characteristics	
				12. Identify ways to conserve and manage the soil	
				13. Describe the environmental impact of soil and water management	
				Unit: Demonstrate an understanding of soil science by analyzing how soil composition relates to fertility and soil management and recording their findings in a table.	
				Other:	

3	2	1	N	E. Plant Science	Notes:
				1. Identify the importance of plants	
				2. List and describe methods to classify plants	
				3. Describe factors that affect plant growth and development	
				4. Describe how pests affect plant growth	
				5. Identify the steps in germination of monocot and dicot seeds	
				6. Describe basic plant processes	
				7. Describe how plants reproduce sexually and asexually	
				8. Describe how genetics influences plant growth	
				Unit: Demonstrate an understanding of the basic plant processes of germination and photosynthesis by conducting a seed germination experiment and writing	

				a summary of their findings.	
				Other:	

3	2	1	N	F. Crop Science	Notes:
				1. Describe the economic importance of crop production	
				2. Identify how crops are used	
				3. Identify common plants and weeds in Missouri	
				4. Identify characteristics of quality seed	
				5. Explain the requirements for establishing a crop stand	
				6. Describe good crop production practices	
				7. Explain factors related to harvesting and storing quality grain	
				8. Describe factors related to harvesting and storing quality forages	
				9. Describe methods of plant pest control	
				Unit: Demonstrate an understanding of crops and crop production by creating, organizing, and participating in a mini Agronomy Career Development Event.	
				Other:	

3	2	1	N	G. Entomology	Notes:
				1. Discuss the significance of entomology	
				2. Prepare an insect collection	
				3. Describe the procedure for classifying insects to order	
				4. Describe methods of pest control	
				5. Describe the factors in the selection and application of insecticides	
				6. Identify safety guidelines for insecticide use	
				7. Outline an IPM plan	
				Unit: Demonstrate an understanding of insects by collecting, classifying, and displaying 30 insects found in Missouri.	
				Other:	

3	2	1	N	H. Small Grains	Notes:
				1. Describe the soil and climatic adaptations and the uses of small grains	
				2. Select the variety and types of small grains that are best suited to the local area	
				3. Describe the practices necessary to establish a satisfactory stand of small grains	
				4. Describe the factors involved in controlling insects in small grains	
				5. Describe the factors involved in controlling	

				diseases of small grains	
				6. Determine the most profitable practices and methods of harvesting and storing small grains	
				Other:	

3	2	1	N	I. Fruit and Vegetable Production	Notes:
				1. Explain the importance of financial planning in fruit and vegetable production.	
				2. Describe approaches for the marketing of fresh fruits and vegetables.	
				3. Classify characteristics of selecting and planning for fruit and vegetable production.	
				4. Explain management practices for pest control.	
				5. Identify characteristics of cool season, long season, and warm season vegetable crops.	
				6. Identify characteristics of small fruits and tree fruits.	
				Unit. Demonstrate knowledge of production requirements for fruits and vegetables by developing a calendar for cultivating and harvesting 10 fruits and vegetables.	
				Other:	

3	2	1	N	J. Forestry	Notes:
				1. Identify careers and benefits form Missouri forest resources	
				2. Classify Missouri trees by use and grade	
				3. Order and plant forest trees	
				4. Describe the safe use of forestry tools	
				5. Measure standing trees, logs, and stacks of cordwood	
				6. Analyze how Timber Stand Improvement (T.S.I.) principles can improve forest production	
				7. Identify factors to consider in growing and marketing Christmas trees	
				8. Describe how to produce and market walnut timber	
				Other:	

3	2	1	N	K. Power Tools	Notes:
				1. Analyze the uses and safety procedures of common power tools used in woodworking	
				2. Analyze the uses and safety procedures of common power tools used in metalworking	
				Unit: Demonstrate an understanding of the correct use of power tools by devising and giving a safety presentation for a power tool found in their class shop.	

3	2	1	N	L. Arc Welding	Notes:
				1. Identify basic safety and maintenance procedures for arc welding	
				2. Describe the procedures used to control distortion during arc welding	
				3. Describe the factors in selecting and maintaining electrodes and safety lenses	

				4. Analyze the characteristics of different metals, including their ability to be welded	
				5.Demonstrate the procedures for making out-of-position welds using a shielded metal arc welder	
				Unit: Apply principles of shielded metal arc welding by making out-of-position welds as part of a welding contest.	
				Other:	

3	2	1	N	**M. Oxy-Acetylene Welding**	**Notes:**
				1. Identify the basic safety and maintenance procedures for oxyacetylene welding	
				2. Weld with and without filler rods using an oxyacetylene outfit	
				3. Braze on mild steel using an oxyacetylene outfit	
				Unit: Apply principles of oxyacetylene welding by making basic welds with an oxyacetylene outfit as part of a class-wide contest.	
				Other:	

3	2	1	N	**N. Tool Sharpening and Reconditioning**	**Notes:**
				1. Identify the safety procedures for tool sharpening and reconditioning	
				2. Dress a grinding wheel	
				3. Sharpen a twist drill	
				4. Sharpen a lawn mower blade	
				5. Maintain a chain saw chain	
				Unit: Apply principles of tool sharpening and reconditioning by participating in a tool reconditioning contest.	
				Other:	

3	2	1	N	**O. Cold Metal Work**	**Notes:**
				1. Lay out cold metal	
				2. Shape cold metal	
				3. Fasten cold metal	
				Unit: Apply principles of cold metal work by constructing an appropriate metalworking project.	
				Other:	

3	2	1	N	**P. Material Selection, Plan Reading, and Interpretation**	**Notes:**
				1. Describe how to choose and plan a project	
				2. Interpret a working drawing	
				3. Prepare a working drawing	

				4. Identify common building supplies using standard terms and sizes	
				Unit: Demonstrate an understanding of material selection and plan reading and interpretation by devising a plan of procedure, cutting list, and bill of materials for a project.	
				Other:	

3	2	1	N	Q. Spray Painting and Finishing	Notes:
				1. Identify the safety procedures for spray painting and finishing	
				2.Demonstrate the procedures for spray painting and finishing	
				3. Maintain spray painting and finishing equipment	
				Unit: Apply principles of painting by finishing a project using air spray or airless spray equipment.	
				Other:	

INTRODUCTION TO GRASSLAND MANAGEMENT

3	2	1	N	R. Grasslands and Grassland Plants	Notes:
				1. Identify different types of grasslands and explain factors that create them	
				2. Identify plant classifications found in grasslands	
				3. Recognize the characteristics of grassland plants that are used in plant identification	
				4. Appraise the current conditions of the grassland	
				Unit: Demonstrate the ability to identify and analyze a grassland area by collecting and identifying plant samples from the area and assembling their samples in a binder or other format.	
				Other:	

3	2	1	N	S. Soil Management	Notes:
				1. Interpret soil test information	
				2. Interpret soil survey manuals and recommend plants for a soil type	
				Unit: Demonstrate an understanding of basic principles of soil management by analyzing the results of a soil test and presenting their findings to the class in a chart and oral report.	
				Other:	

3	2	1	N	T. Grassland Management Practices	Notes:
				1. Analyze the nutrient needs of livestock	
				2. Determine the optimal grazing methods for a grassland	
				3. Determine methods for harvesting and storing forage crops	
				4. Develop a better understanding of the management practices needed to manage both livestock and wildlife on grasslands	
				5. Develop a grassland management plan	

				Unit: Apply grassland management practices by evaluating a grassland site for its ability to sustain wildlife and presenting their findings to the class in a diagram and oral report.	
				Other:	