

Minnesota State-Approved Technical Skill Assessments

12/4/2011

Pathway: Animal Systems

Cluster: Agriculture, Food, and Natural Resources

CLUSTER/ PATHWAY/ PROGRAM	CERTIFICATION / ASSESSMENT TITLE	TYPE	ISSUING ORGANIZATION	WEBSITE Please report broken web links	ELIGIBILITY REQUIREMENTS / PREREQUISITES	ADMINISTRA- TION ELIGIBILITY (Written, Oral, Practical, etc.)	PASSING SCORE	COST	COMMENTS
● For use at SECONDARY For use at SECONDARY For use at SECONDARY For use at SECONDARY									
	NOCTI Testing Information for Consortia Leaders and/or Testing Coordinators	NOCTI	TESTING AGREEMENT	Each institution / consortium should have a Testing Coordinator who contacts NOCTI to obtain assessment exams, proctoring information, data management needs, and other important functions. Click here for getting started: http://www.nocti.org/gettingstarted.cfm					
Animal Science	Small Animal Science & Technology	Academic Assessment	NOCTI	http://www.nocti.org/PDFs/JobReady/2003_Small_Animal_Science.pdf		Online or written	National Norm	\$19 per post-test exam; \$31 for pre-test & post-test exam	Contact NOCTI directly to order assessments for your high school program; information is on their web site.
Animal Science	Animal Science	Academic Assessment	CAERT			Online			Pilot Testing 2011-12 School Year

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● For use at POSTSECONDARY

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Animal Science	Small Animal Science	Academic Assessment	Agrow- knowledge	http://www.agrowknow.org/certification.html		AgrowKnowledge is working to formulate national certification examinations for the following: introductory animal science, introductory plant science, biofuels, introductory agricultural biotechnology, and geospatial technician. Future national certifications will include: equine science and aquaculture. This is a joint project with NOCTI.			Pilot Testing 2011-12 School Year
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Veterinary Technician	Veterinary Technician National Examination (VTNE)	Certification	American Association of Veterinary State Boards (AAVSB) Prometric Testing Centers http://www.aavsb.org/VTNE/	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Minnesota Veterinary Medical Association</div> <div style="border: 1px solid black; padding: 2px;">American Veterinary Medical Association</div>		Graduate from an AVMA accredited veterinary technician program, complete the Minnesota certification application, and pass the VTNE.		\$50 certification fee	The VTNE moved to computer-based testing the summer of 2010. Prometric Testing Centers

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		Secondary	Postsecondary		
TOPIC: TECHNICAL SKILLS - Use of technical knowledge and skills required to pursue careers in the Animal Systems career pathway, including knowledge of design, operation, and maintenance of technological systems critical to the pathway.					
TOPIC 1: Examine the components, historical development, global implications and future trends of the animal systems industry.					
INDICATOR 01.01 Evaluate the development and implications of animal origin, domestication and distribution.	MEASURE 01.01.01 Identify the origin, significance, distribution and domestication of animal species.	N	N	AGCO 01; 03; 05	Role of animal agriculture significance to society.
	MEASURE 01.01.02 Evaluate and describe characteristics of animals that developed in response to the animals' environment and led to their domestication.	N	N	AGCO 01; 02; 03; 05; 10	Agricultural Literacy - the role of animal agriculture and the impact on society - where does your food come from.
	MEASURE 01.01.03 Predict adaptations of animals to production practices and environments.	N	N	AGCO 03; 04; 05; 06; 08	
	MEASURE 01.01.04 Define major components of the animal industry.	Y	Y	AGCO 02; 03; 05; 07; 09; 10	Need to include all components for the industry.
	MEASURE 01.01.05 Outline the development of the animal industry and the resulting products, services and careers.	Y	Y	AGCO 02; 03; 04; 05; 07; 09	
	MEASURE 01.01.06 Predict trends and implications of future development of the animal systems industry.	N	N	AGCO 02; 03; 05; 07; 08; 09	If you are good at it, you will have a job.

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TOPIC 2: Classify, evaluate, select and manage animals based on anatomical and physiological characteristics.

INDICATOR 02.01 Classify animals according to hierarchical taxonomy and agricultural use.	MEASURE 02.01.01 Explain the importance of the binomial system of nomenclature.	Y	N	AGCO 01; 02; 04; 05; 10	Comments from Secondary: Required for Minnesota Science Standards in Biology. Comments from Postsecondary: Essential for Vet Tech only.
	MEASURE 02.01.02 Explain how animals are classified using Linnaeus's taxonomical classification system.	Y	N	AGCO 01; 02; 04; 05; 10	Comments from Secondary: Required for Minnesota Science Standards in Biology. Comments from Postsecondary: Essential for Vet Tech only - need to know and explain.
	MEASURE 02.01.03 Classify animals according to the taxonomical classification system.	Y	N	AGCO 01; 02; 04; 05; 10	Comments from Secondary: Required for Minnesota Science Standards in Biology.
	MEASURE 02.01.04 Identify major animal species by common and scientific names.	Y	Y	AGCO 01; 02; 04; 05; 10	Comments from Secondary: Required for Minnesota Science Standards in Biology. Comments from Postsecondary: Essential for Vet Tech only.
	MEASURE 02.01.05 Compare and contrast the hierarchical classification of the major agricultural animal species.	N	N	AGCO 01; 02; 04; 05; 10	Comments from Secondary: Required for Minnesota Science Standards in Biology.
	MEASURE 02.01.06 Appraise and evaluate the economic value of animals for various applications in the agriculture industry.	Y	Y	AGCO 01; 02; 04; 05; 10	Comments from Secondary: Required for Minnesota Science Standards in Biology.

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INDICATOR 02.02 Apply principles of comparative anatomy and physiology to uses within various animal systems.	MEASURE 02.02.01 Identify basic characteristics of animal cells, tissues, organs and body systems.	Y	Y	AGCO 01; 03; 04; 05; 06; 10	<p>Comments from Secondary: Required for Minnesota Science Standards in Biology.</p> <p>Comments from Postsecondary: May be too involved for many employees within animal industries. Focus of 2 year degree is at mid management level.</p>
	MEASURE 02.02.02 Compare and contrast animal cells, tissues, organs and body systems.	Y	Y	AGCO 01; 03; 04; 05; 06; 10	<p>Comments from Secondary: Required for Minnesota Science Standards in Biology.</p> <p>Comments from Postsecondary: May be too involved for many employees within animal industries. Focus of 2 year degree is at mid management level.</p>
	MEASURE 02.02.03 Explain how the components and systems of animal anatomy and physiology relate to the production and use of animals.	Y	Y	AGCO 02; 03; 04; 05; 06; 07; 08; 09; 10	<p>Comments from Secondary: Required for Minnesota Science Standards for Biology.</p> <p>Comments from Postsecondary: May be too involved for many employees within animal industries. Focus of 2 year degree is at mid management level.</p>
	MEASURE 02.02.04 Diagram a typical animal cell and identify the organelles.	N	N	AGCO 01; 02; 04; 05; 10	<p>Comments from Secondary: Required for Minnesota Science Standards in Biology.</p> <p>Comments from Postsecondary: Essential for Vet Tech only.</p>

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	MEASURE 02.02.05 Describe the functions of animal cell structures.	Y	N	AGCO 01; 02; 04; 05; 10	Comments from Secondary: Required for Minnesota Science Standards in Biology. Comments from Postsecondary: Essential for Vet Tech only.
	MEASURE 02.02.06 Describe the molecular makeup of animal cells and its importance in animal production and management.	N	O	AGCO 02; 03; 04; 05; 06; 07; 08; 09; 10	Comments from Secondary: Required for Minnesota Science Standards in Biology. Comments from Postsecondary: Management Programs Only.
	MEASURE 02.02.07 Describe the basic functions of animal cells in growth and reproduction.	Y	Y	AGCO 01; 02; 04; 05; 10	Comments from Secondary: Required for Minnesota Science Standards in Biology.
	MEASURE 02.02.08 Detail the processes of meiosis and mitosis in animal growth, development, health and reproduction.	N	N	AGCO 01; 02; 04; 05; 10	Comments from Secondary: Required for Minnesota Science Standards in Biology.
	MEASURE 02.02.09 Explain the application of the processes of meiosis and mitosis to animal growth, development, health and reproduction.	N	Y	AGCO 01; 02; 04; 05; 10	*Essential for Vet Tech only.
	MEASURE 02.02.10 Describe the properties, locations, functions and types of animal tissues.	Y	Y	AGCO 01; 02; 04; 05; 10	
	MEASURE 02.02.11 Explain the relationship of animal tissues to growth, performance and health.	Y	Y	AGCO 01; 02; 04; 05; 10	

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	MEASURE 02.02.12 Explain the importance and uses made of animal tissues in the agriculture industry.	Y	Y	AGCO 01; 02; 04; 05; 10	
	MEASURE 02.02.13 Describe the properties, locations, functions and types of animal organs.	Y	Y	AGCO 01; 02; 04; 05; 10	
	MEASURE 02.02.14 Compare and contrast organ types and functions among animal species.	Y	Y	AGCO 01; 02; 04; 05; 10	
	MEASURE 02.02.15 Relate the importance of animal organs to the health, growth and reproduction of animals.	Y	Y	AGCO 01; 02; 04; 05; 10	
	MEASURE 02.02.16 Describe the functions of the animal body systems and system components.	Y	Y	AGCO 01; 02; 04; 05; 10	
	MEASURE 02.02.17 Compare and contrast body systems and system adaptations between animal species.	Y	Y	AGCO 01; 02; 04; 05; 10	
	MEASURE 02.02.18 Explain the impact of animal body systems on performance, health, growth and reproduction.	Y	Y	AGCO 01; 02; 04; 05; 10	

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INDICATOR 02.03 Select animals for specific purposes and maximum performance based on anatomy and physiology.	MEASURE 02.03.01 Identify ways an animal's health can be affected by anatomical and physiological disorders.	Y	Y	AGCO 01; 02; 04; 05; 10	
	MEASURE 02.03.02 Compare and contrast desirable anatomical and physiological characteristics of animals within and between species.	Y	Y	AGCO 02; 03; 04; 05; 06; 07; 08; 09; 10	
	MEASURE 02.03.03 Evaluate and select animals to maximize performance based on anatomical and physiological characteristics that affect health, growth and reproduction.	Y	Y	AGCO 02; 03; 04; 05; 06; 07; 08; 09; 10	
	MEASURE 02.03.04 Develop efficient procedures to produce consistently high quality animals, well suited for their intended purposes.	N	Y	AGCO 02; 03; 04; 05; 06; 07; 08; 09; 10	

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TOPIC 3: Provide for the proper health care of animals.					
INDICATOR 03.01 Prescribe and implement a prevention and treatment program for animal diseases, parasites and other disorders.	MEASURE 03.01.01 Explain methods of determining animal health and disorders.	Y	Y	AGCO 01; 02; 03; 04; 06; 08	
	MEASURE 03.01.02 Perform simple health-check evaluations on animals.	Y	Y	AGCO 03; 04; 06; 09; 10	
	MEASURE 03.01.03 Perform diagnostic tests to detect health problems in animals.	N	Y	AGCO 03; 04; 06	Many tests are completed in a lab setting rather than in the field/on the farm.
	MEASURE 03.01.04 Identify common diseases, parasites and physiological disorders that affect animals.	Y	Y	AGCO 01; 06; 10	
	MEASURE 03.01.05 Recognize illnesses and disorders of animals based on symptoms and problems caused by diseases, parasites and physiological disorders.	N	Y	AGCO 03; 06; 10	
	MEASURE 03.01.06 Treat common diseases, parasites and physiological disorders of animals.	N	Y	AGCO 03; 04; 05	
	MEASURE 03.01.07 Explain characteristics of causative agents and vectors of diseases and disorders in animals.	Y	Y	AGCO 02; 06; 10	

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	MEASURE 03.01.08 Evaluate preventive measures for controlling and limiting the spread of diseases, parasites and disorders among animals.	Y	Y	AGCO 02; 05; 10	
	MEASURE 03.01.09 Design and implement a health maintenance and disease and disorder prevention plan for animals in their natural and/or confined environments.	N	Y	AGCO 03; 05; 07	
	MEASURE 03.01.10 Explain the clinical significance of common considerations in veterinary treatments, such as aseptic techniques.	N	Y	AGCO 02; 06; 10	
	MEASURE 03.01.11 Recognize necessary preparations of animals, facilities and equipment for surgical and nonsurgical veterinary treatments and procedures.	N	Y	AGCO 03; 05; 06	
	MEASURE 03.01.12 Perform nonsurgical treatments and procedures in animal health care.	N	Y	AGCO 03; 05; 06; 10	
	MEASURE 03.01.13 Recognize zoonotic diseases.	Y	Y	AGCO 06; 10	

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	MEASURE 03.01.14 Explain the health risk of zoonotic diseases to humans and their historical significance and future implications.	Y	Y	AGCO 02; 06	
	MEASURE 03.01.15 Develop a plan for zoonotic disease prevention methods and procedures for the safe handling and treatment of animals.	N	Y	AGCO 03; 05; 06	
INDICATOR 03.02 Provide for the biosecurity of agricultural animals and production facilities.	MEASURE 03.02.01 Explain the importance of biosecurity to the animal industry.	Y	Y	AGCO 02; 06; 08	
	MEASURE 03.02.02 Discuss procedures at the local, state and national levels to ensure biosecurity of the animal industry.	Y	Y	AGCO 02; 06; 08	
	MEASURE 03.02.03 Develop a biosecurity plan for an animal production operation.	N	Y	AGCO 03; 04; 05; 08	Secondary level needs to be aware of issues and operations.

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TOPIC 4: Apply principles of animal nutrition to ensure the proper growth, development, reproduction and economic production of animals.					
INDICATOR 04.01 Formulate feed rations to provide for the nutritional needs of animals.	MEASURE 04.01.01 Compare and contrast common types of feedstuffs and the roles they play in the diets of animals.	Y	Y	AGCO 02; 03; 10	
	MEASURE 04.01.02 Determine the relative nutritional value of feedstuffs by evaluating their general quality and condition.	Y	Y	AGCO 01; 03; 10	
	MEASURE 04.01.03 Select appropriate feedstuffs for animals based on factors such as economics, digestive system and nutritional needs.	Y	Y	AGCO 03; 05; 10	
	MEASURE 04.01.04 Explain the importance of a balanced ration for animals.	Y	Y	AGCO 02; 10	
	MEASURE 04.01.05 Appraise the adequacy of feed rations using data from the analysis of feedstuffs, animal requirements and performance.	N	Y	AGCO 01; 03; 10	
	MEASURE 04.01.06 Formulate animal feeds based on nutritional requirements, using feed ingredients for maximum nutrition and optimal economic production.	N	Y	AGCO 01; 03; 04; 10	

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INDICATOR 04.02 Prescribe and administer animal feed additives and growth promotants in animal production.	MEASURE 04.02.01 Explain the purpose and benefits of feed additives and growth promotants in animal production.	Y	Y	AGCO 02; 06; 10	
	MEASURE 04.02.02 Discuss how feed and water additives and growth promotants are administered and the precautions that should be taken.	N	Y	AGCO 02; 03; 08; 10	

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TOPIC 5: Evaluate and select animals based on scientific principles of animal production.					
INDICATOR 05.01 Evaluate the male and female reproductive systems in selecting animals.	MEASURE 05.01.01 Explain the male and female reproductive organs of the major animal species.	Y	Y	AGCO 01; 02; 04; 07; 10	
	MEASURE 05.01.02 Describe the functions of major organs in the male and female reproductive systems.	Y	Y	AGCO 01; 02; 04; 07; 10	
INDICATOR 05.02 Evaluate animals for breeding readiness and soundness.	MEASURE 05.02.01 Explain how age, size, life cycle, maturity level and health status affect the reproductive efficiency of male and female animals.	Y	Y	AGCO 01; 02; 03; 04; 07; 10	
	MEASURE 05.02.02 Summarize factors that lead to reproductive maturity.	Y	Y	AGCO 01; 02; 03; 04; 07; 10	
	MEASURE 05.02.03 Evaluate and select animals for reproductive readiness.	Y	Y	AGCO 01; 02; 03; 04; 06; 07; 10	
	MEASURE 05.02.04 Discuss the importance of efficient and economic reproduction in animals.	Y	Y	AGCO 01; 02; 04; 07; 10	
	MEASURE 05.02.05 Evaluate reproductive problems that occur in animals.	Y	Y	AGCO 01; 02; 03; 04; 06; 07; 10	
	MEASURE 05.02.06 Explain Treatment or culling of animals with reproductive problems.	Y	Y	AGCO 01; 02; 03; 04; 07; 10	

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INDICATOR 05.03 Apply scientific principles in the selection and breeding of animals.	MEASURE 05.03.01 Explain genetic inheritance in agricultural animals.	Y	Y	AGCO 01; 02; 04; 07; 10	
	MEASURE 05.03.02 Explain the advantages of using genetically superior animals in the production of animals and animal products.	Y	Y	AGCO 01; 02; 03; 04; 07; 10	
	MEASURE 05.03.03 Define natural and artificial breeding methods.	Y	Y	AGCO 01; 02; 04; 07; 10	
	MEASURE 05.03.04 Explain the processes of natural and artificial breeding methods.	Y	Y	AGCO 01; 02; 03; 04; 07; 10	
	MEASURE 05.03.05 Select animal breeding methods based on reproductive and economic efficiency.	Y	Y	AGCO 01; 03; 04; 07; 10	
	MEASURE 05.03.06 Explain the use of quantitative breeding values (e.g., EPDs) in the selection of genetically superior breeding stock.	Y	Y	AGCO 01; 02; 03; 04; 07; 10	
	MEASURE 05.03.07 Explain the advantages of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer.	Y	Y	AGCO 01; 02; 03; 04; 06; 07; 08; 10	Comments from Postsecondary: Essential for Dairy & Swine; Not Essential for Poultry.
	MEASURE 05.03.08 Explain the processes of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer.	Y	Y	AGCO 01; 02; 03; 04; 06; 07; 08; 10	Comments from Postsecondary: Essential for Dairy & Swine; Not Essential for Poultry.

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	MEASURE 05.03.09 Discuss the uses and advantages and disadvantages of natural breeding and artificial insemination.	Y	Y	AGCO 01; 02; 03; 04; 07; 08; 10	
	MEASURE 05.03.10 Explain the materials, methods and processes of artificial insemination.	Y	Y	AGCO 01; 02; 04; 06; 07; 08; 10	

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TOPIC 6: Prepare and implement animal handling procedures for the safety of animals, producers and consumers of animal products.					
INDICATOR 06.01 Demonstrate safe animal handling and management techniques.	MEASURE 06.01.01 Discuss the dangers involved in working with animals.	Y	Y	AGCO 02; 03; 04; 06; 07; 08; 10	
	MEASURE 06.01.02 Outline safety procedures for working with animals by species.	Y	Y	AGCO 02; 03; 04; 06; 07; 08; 10	
	MEASURE 06.01.03 Interpret animal behaviors and execute protocols for safe handling of animals.	Y	Y	AGCO 02; 03; 04; 06; 07; 08; 10	
	MEASURE 06.01.04 Explain the implications of animal welfare and animal rights for animal agriculture.	Y	Y	AGCO 01; 02; 03; 04; 07; 08; 10	
	MEASURE 06.01.05 Explain programs that assure the welfare of animals and prevent abuse or mistreatment.	Y	Y	AGCO 01; 02; 03; 04; 05; 06; 07; 08; 10	
	MEASURE 06.01.06 Implement quality-assurance programs and procedures for animal production.	N	Y	AGCO 01; 03; 04; 05; 06; 07; 08; 10	HACCP - Food Safety - Quality management practice.

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INDICATOR 06.02 Implement procedures to ensure that animal products are safe.	MEASURE 06.02.01 Identify animal production practices that could pose health risks or are considered to pose risks by some.	Y	Y	AGCO 03; 04; 06; 07; 08; 10	
	MEASURE 06.02.02 Discuss consumer concerns with animal production practices relative to human health.	Y	Y	AGCO 02; 03; 04; 06; 07; 08; 10	
	MEASURE 06.02.03 Describe how animal identification systems can track an animal's location, nutrition requirements, production progress and changes in health.	Y	Y	AGCO 02; 03; 04; 05; 06; 07; 08; 10	
	MEASURE 06.02.04 Explain why animal trace-back capability, using individual animal and farm identification systems, is important to producers and consumers.	Y	Y	AGCO 02; 03; 04; 05; 06; 07; 08; 10	

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TOPIC 7: Select animal facilities and equipment that provide for the safe and efficient production, housing and handling of animals.					
INDICATOR 07.01 Design animal housing, equipment and handling facilities for the major systems of animal production.	MEASURE 07.01.01 Identify facilities needed to house and produce each animal species safely and efficiently.	Y	Y	AGCO 02; 03; 06; 08; 10	
	MEASURE 07.01.02 Critique designs for an animal facility and prescribe alternative layouts and adjustments for the safe and efficient use of the facility.	N	Y	AGCO 02; 03; 06; 08; 10	Engineer versus a technician level within industry (e.g., poultry).
	MEASURE 07.01.03 Evaluate an animal facility, focusing on animal requirements, efficiency, safety and ease of handling.	Y	Y	AGCO 02; 03; 05; 06; 08; 10	
	MEASURE 07.01.04 Identify equipment and handling facilities used in modern animal production.	Y	Y	AGCO 02; 03; 04; 06; 08; 10	
	MEASURE 07.01.05 Explain how modern equipment and handling facilities enhance the safe and economic production of animals.	Y	Y	AGCO 02; 03; 05; 06; 08; 10	
	MEASURE 07.01.06 Select equipment and implement animal handling procedures and improvements to enhance production efficiency.	N	Y	AGCO 02; 03; 04; 05; 06; 08; 10	Include air mitigation part of the facilities.
INDICATOR 07.02 Comply with government regulations and safety standards for facilities used in animal production.	MEASURE 07.02.01 List the general standards (e.g., environmental, zoning, construction) that must be met in facilities for animal production.	Y	Y	AGCO 02; 03; 06; 08;10	

Pathway: Animal Systems

Cluster: Agriculture, Food, and Natural Resources

KEY: Y=Essential N=Not Essential O=Optional					
PERFORMANCE INDICATOR	PERFORMANCE MEASURE	COMMON CORE COMPETENCIES Consensus among work group		CLUSTER KNOWLEDGE & SKILL STATEMENTS (based on National Agriculture Standards--Cluster Knowledge & Skills) http://www.teamaged.org	COMMENTS
		Secondary	Postsecondary		
TOPIC 8: Analyze environmental factors associated with animal production.					
INDICATOR 08.01 Identify the positive and negative impact of animal production on the environment.	MEASURE 08.01.01 Evaluate the effects of animal agriculture on the environment.	Y	Y	AGCO 02; 03; 06; 08; 10	
	MEASURE 08.01.02 Explain methods of reducing the negative effects of animal agriculture on the environment.	Y	Y	AGCO 02; 03; 06; 08; 10	
INDICATOR 08.02 Evaluate the effects of environmental conditions on animals.	MEASURE 08.02.01 Identify optimal environmental conditions for animals.	Y	Y	AGCO 02; 03; 06; 08; 10	Not Essential for Vet Tech.
	MEASURE 08.02.02 Describe the effects of environmental conditions on animal populations and performance.	Y	Y	AGCO02; 03; 05; 06; 08; 10	Not Essential for Vet Tech.

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An "assessment blueprint" is a document that indicates the knowledge and skills that will be covered in an assessment instrument and the percentage of the assessment that will be devoted to each area of knowledge and skills. The Minnesota assessment blueprints will be used to review the appropriateness of existing assessments by determining how closely those assessments match up to what the Career Pathway teams have determined should be assessed. The assessment blueprints can also be used to guide the development of new assessments where suitable third-party assessments do not exist.

	SECONDARY % of Assessment ↓	POST- SECONDARY % of Assessment ↓	BUSINESS & INDUSTRY % of Assessment ↓
TOPIC 1: Examine the components, historical development, global implications and future trends of the animal systems industry.			
AS.01.01. Indicator: Evaluate the development and implications of animal origin, domestication and distribution.	3%	4-6%	See Summary Statements Below
TOPIC 2: Classify, evaluate, select, and manage animals based on anatomical and physiological characteristics.			
AS.02.01. Performance Indicator: Classify animals according to hierarchical taxonomy and agricultural use.	15%	15-20%	
AS.02.02. Performance Indicator: Apply principles of comparative anatomy and physiology to uses within various animal systems.			
AS.02.03. Performance Indicator: Select animals for specific purposes and maximum performance based on anatomy and physiology.			
TOPIC 3: Provide for the proper health care of animals.			
AS.03.01. Performance Indicator: Prescribe and implement a prevention and treatment program for animal diseases, parasites and other disorders.	20%	13-18%	
AS.03.02. Performance Indicator: Provide for the biosecurity of agricultural animals and production facilities.			
TOPIC 4: Apply principles of animal nutrition to ensure the proper growth, development, reproduction and economic production of animals.			
AS.04.01. Performance Indicator: Formulate feed rations to provide for the nutritional needs of animals.	20%	13-18%	
AS.04.02. Performance Indicator: Prescribe and administer animal feed additives and growth promotants in animal production.			
TOPIC 5: Evaluate and select animals based on scientific principles of animal production.			
AS.05.01. Performance Indicator: Evaluate the male and female reproductive systems in selecting animals.	15%	13-18%	lower
AS.05.03. Performance Indicator: Apply scientific principles in the selection and breeding of animals.			

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	SECONDARY % of Assessment ↓	POST- SECONDARY % of Assessment ↓	BUSINESS & INDUSTRY % of Assessment ↓
TOPIC 6: Prepare and implement animal handling procedures for the safety of animals, producers and consumers of animal products.			
AS.06.01. Performance Indicator: Demonstrate safe animal handling and management techniques.	10%	10-15%	
TOPIC 7: Select animal facilities and equipment that provide for the safe and efficient production, housing and handling of animals.			
AS.07.01. Performance Indicator: Design animal housing, equipment and handling facilities for the major systems of animal production.	2%	8-10%	Increase
TOPIC 8: Analyze environmental factors associated with animal production.			
AS.08.01. Performance Indicator: Reduce the effects of animal production on the environment.	10%	8-10%	Increase
TOPIC 9: Animal Agriculture - Literacy and public opinion			
AS.09.01. Performance Indicator: Animal Agriculture impact and value to society. Implications on production - social, economic, cultural.			
	95%	100%	0%