

AFNR Content Standards Alignment –Animal Health and Veterinary Science

The **AFNR Content Standards Alignment** aligns CASE 4 Learning (CASE) Concepts and Performance Objectives to the National AFNR Content standards and performance indicators developed by the National Council for Agricultural Education (The Council). In the CASE learning model, Concepts are key elements of understanding that students are expected to learn. Concepts are developed by a curriculum committee of content experts comprised of industry representatives, post-secondary educators, and secondary teachers. Performance Objectives are how students will demonstrate their understanding of the concept. All Concepts and Performance Objectives measure student competency of the AFNR Content Standards within each Pathway.

The AFNR Content Standards provide state agricultural education leaders and educators with a high-quality, rigorous set of standards to guide what students should know and be able to do after completing a program of study in each of the following AFNR Career Pathways:

- Career Ready Practices (Integrated)
- Foundation Skills (Integrated)
- Agribusiness Systems
- Animal Systems
- Biotechnology Systems
- Education, Communication, and Leadership
- Environmental Sustainability Systems
- Food Products and Processing Systems
- Natural Resource Systems
- Plant Systems
- Power, Structural, and Technical Systems

DEFINITIONS: Within each pathway, the standards are organized and aligned to CASE curriculum as follows:

- **Standards** – These are the standards owned by Advance CTE and used here with permission. The standards defined the scope and guided the development of the updated indicators and CASE measurements.
- **Performance Indicators** – These statements distill each standard into more discrete indicators of the knowledge and skills students should attain through a program of study in this pathway. Attainment of the knowledge and skills outlined in the performance indicators is intended to demonstrate an acceptable level of proficiency with the related standard at the conclusion of a program of study in this area.
- **CASE Measurements** – These are CASE Concepts with bulleted Performance Objectives. Students carry out the Performance Objectives to show understanding of the Concept, which indicates attainment of each performance indicator. The beginning CASE measurements require students to remember, understand, identify, explain, and summarize information. The intermediate CASE measurements require students to apply, analyze, compare, distinguish, and examine information and scenarios. The advanced CASE measurements require students to assess, evaluate, justify, improve, and create.

The **Animal Health and Veterinary Science** curriculum measures student competencies in the AFNR Pathways included in this blueprint. For more information about the National AFNR Content Standards, visit The National Council for Agricultural Education’s website at <https://www.thencae.org/afnr-standards>.

CAREER-READY PRACTICES STANDARD

CRP.02. Apply appropriate academic and technical skills.
 Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.

PERFORMANCE INDICATOR	CASE MEASUREMENTS		
	Beginning	Intermediate	Advanced
CRP.02.01. Use strategic thinking to connect and apply academic learning, technical knowledge, and skills to solve problems in the workplace and community.		2.1 Concept 1 Individual animal care responsibilities depend on a person's level of education and professional certification. <ul style="list-style-type: none"> • Categorizes responsibilities of different animal health care professionals and animal owners. 	

CAREER READY PRACTICES STANDARD

CRP.04. Communicate clearly, effectively and with reason.
 Career-ready individuals communicate thoughts, ideas and action plans with clarity, whether using written, verbal and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.

PERFORMANCE INDICATOR	CASE MEASUREMENTS		
	Beginning	Intermediate	Advanced
CRP.04.01. Communicate using strategies that ensure clarity, logic, purpose and professionalism in formal and informal settings.			1.2 Concept 3 Animal health professionals use common medical prefixes, roots, and suffixes. <ul style="list-style-type: none"> • Learn Latin medical words and their application in animal health care. 1.2 Concept 4 Animal health professionals use medical abbreviations in charting and recordkeeping. <ul style="list-style-type: none"> • Decode common medical abbreviations and use them to translate medical conversations. 2.1 Concept 3 Using industry-recognized terminology allows for clear communication between professionals. <ul style="list-style-type: none"> • Practice identifying anatomical planes on a stuffed animal.

PERFORMANCE INDICATOR	CASE MEASUREMENTS		
	Beginning	Intermediate	Advanced
CRP.04.02. Produce clear, reasoned, and coherent written and visual communication in formal and informal settings.	1.1 Concept 2 Organization and record keeping are important to the success of an agricultural business. <ul style="list-style-type: none"> Develop and keep an Agriscience Notebook to record and store information. 		
PERFORMANCE INDICATOR	CASE MEASUREMENTS		
	Beginning	Intermediate	Advanced
CRP.04.03. Model active listening strategies when interacting with others in formal and informal settings.		2.1 Concept 4 People utilize multiple forms of verbal and nonverbal communication. <ul style="list-style-type: none"> Practice different forms of verbal and nonverbal professional communication. 	2.1 Concept 5 Empathy is a component of effective animal health care. <ul style="list-style-type: none"> Practice different forms of verbal and nonverbal professional communication.

CAREER READY PRACTICES STANDARD

CRP.05. Consider the environmental, social and economic impacts of decisions. Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organizations and the environment. They are aware of and utilize new technologies, understandings, procedures, materials and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization.

PERFORMANCE INDICATOR	CASE MEASUREMENTS		
	Beginning	Intermediate	Advanced
CRP.05.02. Make, defend, and evaluate decisions at work and in the community using information about the potential environmental, social, and economic impacts.		2.1 Concept 6 Animal health is an interdisciplinary field. <ul style="list-style-type: none"> Explore animal health careers to benefit a scenario. 	

FOUNDATIONAL PATHWAY SKILLS STANDARD

FPS.03. Examine and summarize the importance of health, safety and environmental management systems in AFNR workplaces.

PERFORMANCE INDICATOR	CASE MEASUREMENTS		
	Beginning	Intermediate	Advanced
FPS.03.03. Apply health and safety practices to AFNR workplaces.			1.1 Concept 1 Removing and restricting pathogens prevents infection and disease of patients and handlers. <ul style="list-style-type: none"> Model antiseptic handwashing procedures.

PERFORMANCE INDICATOR	CASE MEASUREMENTS		
	Beginning	Intermediate	Advanced
FPS.03.04. Use appropriate protective equipment and demonstrate safe and proper use of AFNR tools and equipment.			1.1 Concept 3 Procedures and personal protective equipment protect animal health workers. <ul style="list-style-type: none"> • Assess scenarios for safety hazards and determine proper personal protective equipment. • Practice donning and doffing gloves. • Rehearse surgical gowning and gloving.

FOUNDATIONAL PATHWAY SKILLS STANDARD

FPS.08. Utilize critical thinking to make sense of problems and persevere in solving them.			
PERFORMANCE INDICATOR	CASE MEASUREMENTS		
	Beginning	Intermediate	Advanced
FPS.08.02. Develop employability skills needed to be successful in a chosen career field.			5.1 Concept 3 Animal health professionals use technical and soft skills to care for animals. <ul style="list-style-type: none"> • Learn about veterinary clinic employee expectations. • Demonstrate technical and interpersonal skills learned in this course.

ANIMAL SYSTEMS STANDARD

AS.01. Analyze historic and current trends impacting the animal systems industry.			
PERFORMANCE INDICATOR	CASE MEASUREMENTS		
	Beginning	Intermediate	Advanced
AS.01.01. Evaluate the development and implications of animal origin, domestication, and distribution on production practices and the environment.		3.1 Concept 2 Certain breeds or species are prone to specific health disorders. <ul style="list-style-type: none"> • Select dog breeding pairings to avoid genetic disorders. • Compile research on genetic disorders for a selected breed. 	
PERFORMANCE INDICATOR	CASE MEASUREMENTS		
	Beginning	Intermediate	Advanced
AS.01.02. Assess and select animal production, marketing, and		3.1 Concept 1 Accurate medical records help to create a safe and healthy environment for patients.	4.1 Concept 5 Animal health professions follow storage and handling to maximize drug efficacy.

management methods based upon effectiveness and potential social and environmental impacts.		<ul style="list-style-type: none"> • Design and implement a lifestyle analysis questionnaire. 	<ul style="list-style-type: none"> • Recommend medication storage and recordkeeping to a veterinary clinic.
		3.2 Concept 2 Accurate medical records help to create a safe and healthy environment for patients.	
		<ul style="list-style-type: none"> • Perform a physical examination and compile a patient history. 	
PERFORMANCE INDICATOR	CASE MEASUREMENTS		
	Beginning	Intermediate	Advanced
AS.01.03. Analyze laws and sustainable practices that impact animal agriculture from a local, tribal, state, national, and global perspective.	3.2 Concept 3 Animal health professionals protect client privacy.	4.1 Concept 1 The Drug Enforcement Agency rates prescription drugs by schedules based on their potential for dependence.	
	<ul style="list-style-type: none"> • Summarize your state's veterinary medical records confidentiality rules. 	<ul style="list-style-type: none"> • Classify animal pharmaceuticals in different ways. 	

ANIMAL SYSTEMS STANDARD

AS.02. Utilize best-practice protocols based upon animal behaviors for animal husbandry and welfare.			
PERFORMANCE INDICATOR	CASE MEASUREMENTS		
	Beginning	Intermediate	Advanced
AS.02.01. Explain management techniques that ensure animal welfare.		5.1 Concept 2 Animal owners use an emergency plan and a first aid kit for emergency animal care.	2.2 Concept 2 Safe handling and restraint procedures protect the animal and handler.
		<ul style="list-style-type: none"> • Develop an emergency kit for the animal of your choice. 	<ul style="list-style-type: none"> • Perform five different animal restraints.
PERFORMANCE INDICATOR	CASE MEASUREMENTS		
	Beginning	Intermediate	Advanced
AS.02.02. Analyze procedures to ensure that animal products are safe for consumption.	3.2 Concept 1 Radio-frequency identification (RFID) is used by professionals and animal owners to identify animals.		
	<ul style="list-style-type: none"> • Construct a low-frequency RFID scanner to simulate LF ear tag and microchipping technology. 		

ANIMAL SYSTEMS STANDARD

AS.06. Classify, evaluate and select animals based on anatomical and physiological characteristics.

PERFORMANCE INDICATOR	CASE MEASUREMENTS		
	Beginning	Intermediate	Advanced
AS.06.02. Apply principles of comparative anatomy and physiology to uses within various animal systems.			2.1 Concept 2 Animal systems are codependent and specific symptoms can be indicators of illness or injury to a system.
			<ul style="list-style-type: none"> Research common symptoms for each body symptom. Map each body system in an anatomy book.

ANIMAL SYSTEMS STANDARD

AS.07. Apply principles of effective animal health care.

PERFORMANCE INDICATOR	CASE MEASUREMENTS		
	Beginning	Intermediate	Advanced
AS.07.01. Design programs to prevent animal diseases, parasites, and other disorders and ensure animal welfare.	1.2 Concept 1 Animal health professionals utilize specific tools for the care and management of animals.	2.2 Concept 1 Animal caretakers conduct physical exams to assess animal health.	3.1 Concept 4 Conducting physical exams assess animal health.
	<ul style="list-style-type: none"> Identify standard veterinary equipment. 	<ul style="list-style-type: none"> Determine the body condition of animals using the body condition score scale. Practice taking dog vitals using industry practices. 	<ul style="list-style-type: none"> Evaluate goats for internal parasites using the FAMACHA® system. Design a preventative maintenance plan for a goat herd.
	3.2 Concept 4 Body fluid samples require correct collection to prevent cross-contamination and get an accurate diagnosis.	2.2 Concept 3 Preventative health care is vital for animal longevity.	3.2 Concept 6 Diagnostic testing involves a comprehensive and systematic approach.
	<ul style="list-style-type: none"> Practice collecting urine and fecal samples. 	<ul style="list-style-type: none"> Demonstrate proper nail trimming procedures. Annotate an article or research paper about preventative dental care. Select preventative medication for a species. 	<ul style="list-style-type: none"> Use a case study to create a systematic diagnostic approach.
	3.2 Concept 5 Safe handling of clinic samples prevents accidents and zoonotic diseases.	3.1 Concept 3 Animal health professionals identify parasites by their physical characteristics.	4.1 Concept 3 Animal health professionals calculate and label medications to ensure accurate dosing.
<ul style="list-style-type: none"> Follow the packaging and shipping protocol to submit fluid samples for testing. 	<ul style="list-style-type: none"> Use researched information to identify parasite samples. Design a preventative maintenance plan for a goat herd. 	<ul style="list-style-type: none"> Interpret prescriptions and calculate the dosage for different scenarios. Practice filling multiple prescriptions and communicating instructions to clients. 	

	5.1 Concept 1 Agricultural employees need to work efficiently and communicate effectively in the workplace.	3.1 Concept 5 Preventative health care is vital for animal longevity.	4.2 Concept 1 Animal caretakers use proper injection techniques.
	<ul style="list-style-type: none"> Observe a veterinarian perform a physical examination. 	<ul style="list-style-type: none"> Design a preventative maintenance plan for a goat herd 	<ul style="list-style-type: none"> Practice the correct procedure for selecting a needle and filling a syringe. Simulate injecting medication for an animal.
		4.1 Concept 2 Medicine labels contain information about drug use and precautions.	4.2 Concept 2 Animal health professionals calculate and label medications to ensure accurate dosing.
		<ul style="list-style-type: none"> Locate relevant information on medication labels. 	<ul style="list-style-type: none"> Calculate accurate doses using the information in a scenario.
		4.1 Concept 4 Animal health professionals administer medications for animal health.	4.2 Concept 3 Animal surgical nursing skills provide proper patient care.
		<ul style="list-style-type: none"> Administer ophthalmic, oral, and aural medication. 	<ul style="list-style-type: none"> Perform wound care by cleaning, applying bandaging, and removing bandaging. Practice suturing and removing sutures.
			4.2 Concept 4 Vaccinations protect animals from deadly diseases and improve their overall health.
		<ul style="list-style-type: none"> Develop a vaccination schedule for the lifetime of an animal. 	
CASE MEASUREMENTS			
PERFORMANCE INDICATOR	Beginning	Intermediate	Advanced
AS.07.02. Analyze biosecurity measures utilized to protect the welfare of animals and health of humans on a local, state, national, and global level.		1.1 Concept 4 Biosecurity protects animals and people from zoonotic diseases.	1.2 Concept 2 Maintaining aseptic techniques reduce the likelihood of pathogens spreading.
		<ul style="list-style-type: none"> Research a zoonotic disease and create an educational guide highlighting biosecurity. 	<ul style="list-style-type: none"> Analyze the cleanliness of equipment before and after standard cleaning procedures. Practice packing, wrapping, and unwrapping a surgical pack.