Advanced Animal Science

PRE-TEST/POST-TEST TEKS BLUEPRINT

Pre-Test/Post-Test Development Overview

TEKS Addressed Selection Process

The Texas Essential Knowledge & Skills (TEKS) included in the course pre-test and post-test were selected for their direct relevance to the course content. This selection process was guided by the goal of assessing learners' understanding of specific topics and skills that are integral to the course. As a result, TEKS related to general employability skills or broader topics were often excluded. This focus ensures that the assessments accurately measure students' mastery of the subject matter, allowing educators to gain a clear insight into areas where students excel or may need additional support. By concentrating on content-specific TEKS, the tests provide a more precise evaluation of the students' knowledge and understanding of the core material.

Test Question Development Process

The questions created for the pre-test and post-test were designed using psychometric principles to ensure they are of high quality and fairness. This approach helps to accurately assess student understanding. These principles guide the development of questions to be reliable, valid, and free from bias, ensuring that they effectively measure the knowledge and skills the students are expected to acquire in the course.

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Knowledge & Skills Statement	Student Expectation	iCEV Lesson Title
(2) Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:	(B) apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;	Conducting Lab & Field Investigations: Animal Science
(2) Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:	(E) collect quantitative data using the International System of Units (SI) and qualitative data as evidence;	Conducting Lab & Field Investigations: Animal Science
(3) Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:	(A) identify advantages and limitations of models such as their size, scale, properties, and materials;	Developing a Model: Animal Science
(3) Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:	(D) evaluate experimental and engineering designs.	Experimental Design: Animal Science
(5) Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:	(B) relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content; and	Impact of Science: Animal Science
(6) The student develops a supervised agricultural experience program. The student is expected to:	(B) use appropriate record-keeping skills in a supervised agricultural experience program;	Blue & Gold Experience: SAE Programs
(7) The student analyzes the history, domestication, and evaluation of animals, including canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs. The student is expected to:	(B) analyze and describe how changes in the global food market impact the animal production industry; and	Global Livestock Production
(7) The student analyzes the history, domestication, and evaluation of animals, including canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs. The student is expected to:	(C) evaluate breeds of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorph based on purpose and conformation.	External Anatomy of Livestock: Terms & Terminology
(8) The student defines how an organism grows and how specialized cells, tissues, and organs develop. The student is expected to:	(A) compare cells to show specialization of structure and function;	Fundamentals of Animal Body Systems: Structural Organization
(8) The student defines how an organism grows and how specialized cells, tissues, and organs develop. The student is expected to:	(B) explain cell division, including mitosis and meiosis;	Advanced Animal Genetics
(8) The student defines how an organism grows and how specialized cells, tissues, and organs develop. The student is expected to:	(C) explain cell differentiation in the development of tissues and organs; and	Fundamentals of Animal Body Systems: Structural Organization
(8) The student defines how an organism grows and how specialized cells, tissues, and organs develop. The student is expected to:	(D) identify and explain the biological levels of organization in animals.	Fundamentals of Animal Body Systems: Structural Organization
(9) The student examines and compares anatomy and physiology in animals. The student is expected to:	(A) compare the external anatomy of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs;	External Anatomy of Livestock: Terms & Terminology
(9) The student examines and compares anatomy and physiology in animals. The student is expected to:	(B) identify the anatomical structures and physiological functions of the skeletal, muscular, circulatory, genitourinary, respiratory, nervous, immune, and endocrine systems of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs; and	Fundamentals of Animal Body Systems: Skeletal
(9) The student examines and compares anatomy and physiology in animals. The student is expected to:	(C) investigate and describe the interrelationship among animal body systems.	Fundamentals of Animal Body Systems: Integration of Systems
(10) The student understands the anatomical structures and physiological functions of the digestive system to determine nutritional requirements of ruminant and non-ruminant animals. The student is expected to:	(A) describe the structures and functions of the digestive systems of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs;	Fundamentals of Animal Body Systems: Digestive
(10) The student understands the anatomical structures and physiological functions of the digestive system to determine nutritional requirements of ruminant and non-ruminant animals. The student is expected to:	(B) identify and describe sources of nutrients and classes of feeds for canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs;	Fundamentals of Livestock Nutrition: Nutrients, Vitamins, Minerals & Additives

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(10) The student understands the anatomical structures and physiological functions of the digestive system to determine nutritional requirements of ruminant and non-ruminant animals. The student is expected to:	(C) identify and describe the feed additives and supplements used to meet the nutritional requirements of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs;	Fundamentals of Livestock Nutrition: Nutrients, Vitamins, Minerals & Additives
(10) The student understands the anatomical structures and physiological functions of the digestive system to determine nutritional requirements of ruminant and non-ruminant animals. The student is expected to:	(D) formulate rations based on different nutritional requirements, including age, gestation, lactation, sex, and purpose, for canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs;	Fundamentals of Livestock Nutrition: Rations & Feeding Practices
(10) The student understands the anatomical structures and physiological functions of the digestive system to determine nutritional requirements of ruminant and non-ruminant animals. The student is expected to:	(E) analyze feeding practices in relation to nutritional requirements, including age, gestation, lactation, sex, and purpose, for canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs;	Fundamentals of Livestock Nutrition: Rations & Feeding Practices
(10) The student understands the anatomical structures and physiological functions of the digestive system to determine nutritional requirements of ruminant and non-ruminant animals. The student is expected to:	(G) research and compare the nutritional value of feeds for all species discussed;	Fundamentals of Livestock Nutrition: Rations & Feeding Practices
(10) The student understands the anatomical structures and physiological functions of the digestive system to determine nutritional requirements of ruminant and non-ruminant animals. The student is expected to:	(H) identify forage plants used for livestock grazing and analyze the protein levels of each; and	Fundamentals of Livestock Nutrition: Feed & Feedstuffs
(10) The student understands the anatomical structures and physiological functions of the digestive system to determine nutritional requirements of ruminant and non-ruminant animals. The student is expected to:	(I) research grazing practices such as rotational grazing and deferred grazing and explain the advantages and disadvantages of each using the scientific and engineering design process.	Fundamentals of Livestock Nutrition: Feed & Feedstuffs
(11) The student understands the principles of molecular genetics and heredity. The student is expected to:	(A) explain Mendel's laws of inheritance and predict genotypes and phenotypes of offspring using a Punnett square;	Advanced Animal Genetics
(11) The student understands the principles of molecular genetics and heredity. The student is expected to:	(B) use a Punnett square and assign alleles to justify genotype and phenotype predictions;	Advanced Animal Genetics
(11) The student understands the principles of molecular genetics and heredity. The student is expected to:	(D) explain the functions of DNA and RNA.	Advanced Animal Genetics
(12) The student applies the principles of reproduction and breeding to animal improvement. The student is expected to:	(A) describe and compare reproductive anatomy of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs;	Fundamentals of Animal Body Systems: Reproductive
(12) The student applies the principles of reproduction and breeding to animal improvement. The student is expected to:	(B) analyze and compare reproductive cycles and phases of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs;	Fundamentals of Animal Body Systems: Reproductive
(12) The student applies the principles of reproduction and breeding to animal improvement. The student is expected to:	(C) correlate the reproductive cycles and phases to animal behavior;	Fundamentals of Animal Body Systems: Reproductive
(12) The student applies the principles of reproduction and breeding to animal improvement. The student is expected to:	(D) research breeding systems, including grading up, crossbreeding, linebreeding, and inbreeding, and explain the advantages and disadvantages of each using the scientific and engineering design	Livestock Breeding Systems
(12) The student applies the principles of reproduction and breeding to animal improvement. The student is expected to:	(E) research breeding methods, including embryo transfer, artificial insemination, and natural mating, and explain the advantages and disadvantages of each using the scientific and engineering design process.	Livestock Breeding Systems
(13) The student analyzes how diseases and parasites affect animal health. The student is expected to:	(A) examine how factors such as geographic location, age, genetic composition, and inherited diseases influence the health of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs;	Common Diseases of Livestock Animals: Genetic Diseases
(13) The student analyzes how diseases and parasites affect animal health. The student is expected to:	(B) describe the process of immunity and disease transmission of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs;	Common Diseases of Livestock: Cause & Control
(13) The student analyzes how diseases and parasites affect animal health. The student is expected to:	(C) identify and describe pathogens and the diseases they cause in canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and	Common Diseases of Livestock: Cause & Control
(13) The student analyzes how diseases and parasites affect animal health. The student is expected to:	(D) describe the effects that diseases have on various body systems of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs;	Common Diseases of Livestock Animals: Viral Diseases
(13) The student analyzes how diseases and parasites affect animal health. The student is expected to:	(E) research and explain the methods of prevention, and control for diseases of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs;	Common Diseases of Livestock Animals: Bacterial Diseases
(13) The student analyzes how diseases and parasites affect animal health. The student is expected to:	(F) identify parasites of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs using common and scientific names;	Common Parasites of Livestock: Internal Parasites

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(13) The student analyzes how diseases and parasites affect animal health. The student is expected to:	(G) describe the life cycles of various parasites and relate them to animal health issues;	Common Parasites of Livestock: Cause & Control
(13) The student analyzes how diseases and parasites affect animal health. The student is expected to:	(H) explain how parasites are transmitted and the effect they have on canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and	Common Parasites of Livestock: Internal Parasites
(13) The student analyzes how diseases and parasites affect animal health. The student is expected to:	(I) conduct or simulate parasite diagnostic tests; and	Common Parasites of Livestock: Cause & Control
(13) The student analyzes how diseases and parasites affect animal health. The student is expected to:	(J) explain the methods of prevention, control, and treatment of parasites of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs	Common Parasites of Livestock: External Parasites
(14) The student discusses livestock market readiness and harvesting methods. The student is expected to:	(A) explain the stages of animal growth and development and how they relate to market readiness;	Grades & Standards of Livestock
(14) The student discusses livestock market readiness and harvesting methods. The student is expected to:	(B) evaluate market class and grades of livestock;	Grades & Standards of Livestock
(14) The student discusses livestock market readiness and harvesting methods. The student is expected to:	(C) compare harvesting methods for various species using the scientific and engineering design process;	Livestock Harvest & Red Meat Production: Harvest & Muscle to Meat
(14) The student discusses livestock market readiness and harvesting methods. The student is expected to:	(E) identify wholesale and retail cuts of meat and correlate to major muscle groups; and	Livestock Harvest & Red Meat Production: Grading, Fabrication & Marketing
(14) The student discusses livestock market readiness and harvesting methods. The student is expected to:	(F) research animal by-products and explain their impact on society.	Livestock Harvest & Red Meat Production: Grading, Fabrication & Marketing
(15) The student explores methods of marketing animals and animal products. The student is expected to:	(A) compare various methods of animal marketing such as auction, contract sales, private treaty, internet sales, value-based, and exhibition of various animals;	Livestock Harvest & Red Meat Production: Grading, Fabrication & Marketing
(15) The student explores methods of marketing animals and animal products. The student is expected to:	(C) research and evaluate the effectiveness of various strategies and campaigns such as Beef: It's What's For Dinner, Certified Angus Beef, Pork: The Other White Meat, Got Milk?, Beef Check Off, Man's Best Friend, Cat Cafes, Goat Yoga, and Farm to Plate to market animal products based on consumption patterns and consumer preferences; and	Specialty Food Production Methods
(15) The student explores methods of marketing animals and animal products. The student is expected to:	(D) research and evaluate the effectiveness of various labeling options to market animal products such as organic, farm-raised, hormone-free, cage-free, grass-fed, antibiotic-free, and non-GMO labels based on consumption patterns and consumer preferences.	Specialty Food Production Methods
(16) The student demonstrates an understanding of policies and current issues in animal science. The student is expected to:	(B) identify governmental regulations and policies such as environmental and animal welfare and research the impacts on animal production; and	Animal Welfare Basics