

# Advanced Animal Science 2021-2022

## At a Glance - Lamar CISD

Professional Standards/Employability Skills/Technical Skills			
<b>Ongoing Skills Imbedded All Year</b>	1(A) The student will identify career development and entrepreneurship opportunities in the field of animal systems. 1(B) The student will apply competencies related to resources, information, interpersonal skills, and systems of operation in animal systems. 1(C) The student will demonstrate knowledge of personal and occupational safety and health practices in the workplace. 1(D) The student will identify employers' expectations, including appropriate work habits, ethical conduct, and legal responsibilities. 1(E) The student will demonstrate characteristics of good citizenship such as stewardship, advocacy, and community leadership. 1(F) The student will research career topics using technology such as the Internet.		
<b>Ongoing Ways to Show</b>	2(A) The student will demonstrate safe practices during laboratory and field investigations. 2(B) The student will demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.		
Grading Period	Unit Name	Estimated Time Frame	TEKS
<b>Grading Period 1</b> <b>8/23-10/1</b> <b>28 Days</b>	<b>SAEs &amp; FFA</b>	<b>8 Days</b>	1A, 1B, 1D, 1E, 1F
	1(A) The student will identify career development and entrepreneurship opportunities in the field of animal systems. 1(B) The student will apply competencies related to resources, information, interpersonal skills, and systems of operation in animal systems. 1(D) The student will identify employers' expectations, including appropriate work habits, ethical conduct, and legal responsibilities. 1(E) The student will demonstrate characteristics of good citizenship such as stewardship, advocacy, and community leadership. 1(F) The student will research career topics using technology such as the Internet.		
	<b>Careers in Animal Science</b>	<b>5 Days</b>	1C, 2A
	1(C) The student will demonstrate knowledge of personal and occupational safety and health practices in the workplace. 2(A) The student will demonstrate safe practices during laboratory and field investigations.		
	<b>Animal Handling</b>	<b>5 Days</b>	13E
	13(E) The student will analyze the issues surrounding the impact of livestock production on the environment.		
	<b>Scientific Method</b>	<b>10 Days</b>	2A, 3A, 3B, 3C, 3D, 3E, 3F, 3H, 4A, 4B, 4D, 4E
2(A) The student will demonstrate safe practices during laboratory and field investigations. 3(A) The student will know the definition of science and understand that it has limitations, as specified in subsection (b)(4) of this section. 3(B) The student will know that hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories. 3(C) The student will know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but they may be subject to change as new areas of science are created and new technologies emerge. 3(D) The student will distinguish between scientific hypotheses and scientific theories. 3(E) The student will plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology. 3(F) The student will collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as calculators, spreadsheet software, data-collecting probes, computers, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, electronic balances, gel electrophoresis apparatuses, micropipettors, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, cameras, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures. 3(H) The student will communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports. 4(A) The student will in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student. 4(B) The student will communicate and apply scientific information extracted from various sources such as accredited scientific journals, institutions of higher learning, current events, news reports, and marketing materials. 4(D) The student will evaluate the impact of scientific research on society and the environment. 4(E) The student will evaluate models according to their limitations in representing biological objects or events.			

<b>Grading Period 2</b> <b>10/4-11/5</b> <b>25 Days</b>	<b>Genetics</b>	<b>15 Days</b>	<b>8A, 8B, 8C, 8D, 8E</b>	
	<p>8(A) The student will explain Mendel's laws of inheritance by predicting genotypes and phenotypes of offspring using the Punnett square.</p> <p>8(B) The student will predict genotypes and phenotypes of animal offspring using Mendelian or non-Mendelian patterns of inheritance in various forms of livestock and use Punnett Square and assign alleles to justify all predictions.</p> <p>8(C) The student will identify the parts of the nucleotide and the difference between the nucleotides found in deoxyribonucleic acid (DNA) versus ribonucleic acid (RNA).</p> <p>8(D) The student will explain the functions of DNA and RNA.</p> <p>8(E) The student will describe how heredity is used in the selection of livestock such as knowing the difference between outbreeding and inbreeding/linebreeding.</p>			
	<b>Growth and Development</b>	<b>10 Days</b>	<b>12A, 12B, 12C</b>	
<p>12(A) The student will compare cells from different parts of animals, including epithelia, muscles, and bones, to show specialization of structure and function.</p> <p>12(B) The student will describe and explain cell differentiation in the development of organisms.</p> <p>12(C) The student will sequence the levels of organization in animals and relate the parts to each other and to the whole.</p>				
<b>Grading Period 3</b> <b>11/8-12/17</b> <b>25 Days</b>	<b>Reproduction</b>	<b>15 Days</b>	<b>7A, 7B, 7C, 7D, 13A</b>	
	<p>7(A) The student will describe reproductive cycles and relate them to breeding systems.</p> <p>7(B) The student will explain the embryo transfer process and how it can impact livestock industries.</p> <p>7(C) The student will recognize the significance of meiosis to sexual reproduction.</p> <p>7(D) The student will evaluate animal behavior and its relationship to livestock management.</p> <p>13(A) The student will discuss the effects of biotechnology such as cloning, artificial insemination, and freezing of semen and embryos on the production of livestock.</p>			
	<b>Anatomy and Physiology</b>	<b>10 Days</b>	<b>9A, 9B, 9C, 9D</b>	
<p>9(A) The student will identify and compare the external anatomy of livestock species.</p> <p>9(B) The student will compare the anatomy and physiology of the skeletal, muscular, reproductive, digestive, circulatory, genitourinary, respiratory, nervous, immune, and endocrine systems of animals.</p> <p>9(C) The student will describe interactions among various body systems such as circulatory, respiratory, and muscular systems.</p> <p>9(D) The student will identify and describe the functions of epithelial, nervous, connective, and muscular tissue and relate the functions to animal body systems.</p>				
<b>Grading Period 4</b> <b>1/4-2/18</b> <b>33 Days</b>	<b>Anatomy and Physiology Continue</b>	<b>5 Days</b>	<b>9A, 9B, 9C, 9D</b>	
	<p>9(A) The student will identify and compare the external anatomy of livestock species.</p> <p>9(B) The student will compare the anatomy and physiology of the skeletal, muscular, reproductive, digestive, circulatory, genitourinary, respiratory, nervous, immune, and endocrine systems of animals.</p> <p>9(C) The student will describe interactions among various body systems such as circulatory, respiratory, and muscular systems.</p> <p>9(D) The student will identify and describe the functions of epithelial, nervous, connective, and muscular tissue and relate the functions to animal body systems.</p>			
	<b>Selection and Evaluation</b>	<b>15 Days</b>	<b>6A</b>	
	<p>6(A) The student will evaluate market classes and grades of livestock.</p>			
	<b>Nutrition</b>	<b>13 Days</b>	<b>10A, 10B, 10C, 10D, 10E, 10F</b>	
<p>10(A) The student will describe the structures and functions of the digestive system of ruminant animals, including cattle, and non-ruminant animals, including poultry.</p> <p>10(B) The student will identify and describe sources of nutrients and classes of feeds and relate them to ruminant and non-ruminant animals.</p> <p>10(C) The student will identify and describe vitamins, minerals, and feed additives and how they relate to the nutritional requirements of ruminant and non-ruminant animals.</p> <p>10(D) The student will formulate rations based on different nutritional requirements.</p> <p>10(E) The student will analyze feeding practices in relation to nutritional requirements of animals.</p> <p>10(F) The student will analyze feed quality issues and determine their effect on animal health.</p>				

<b>Grading Period 5 2/21-4/14 34 Days</b>	<b>Nutrition Continue</b>	<b>9 Days</b>	10A, 10B, 10C, 10D, 10E, 10F
	10(A) The student will describe the structures and functions of the digestive system of ruminant animals, including cattle, and non-ruminant animals, including poultry. 10(B) The student will identify and describe sources of nutrients and classes of feeds and relate them to ruminant and non-ruminant animal. 10(C) The student will identify and describe vitamins, minerals, and feed additives and how they relate to the nutritional requirements of ruminant and non-ruminant animals. 10(D) The student will formulate rations based on different nutritional requirements. 10(E) The student will analyze feeding practices in relation to nutritional requirements of animals. 10(F) The student will analyze feed quality issues and determine their effect on animal health.		
	<b>Health and Diseases</b>	<b>25 Days</b>	11A, 11B, 11C, 11D, 11E, 11F, 11G, 11H
	11(A) The student will identify factors that influence the health of animals such as geographic location, age, genetic composition, and inherited diseases for a particular species. 11(B) The student will identify pathogens and describe the effects that diseases have on various body systems. 11(C) The student will explain the methods of prevention, control, and treatment for diseases. 11(D) The student will describe the process of immunity and disease transmission. 11(E) The student will explain how external and internal parasites are transmitted and the effect they have on the host. 11(F) The student will explain the methods of prevention, control, and treatment of internal and external parasites. 11(G) The student will describe the life cycles of various parasites and relate them to animal health issues. 11(H) The student will conduct parasite diagnostic tests.		
<b>Grading Period 6 4/19-5/26 28 Days</b>	<b>Processing, Harvesting and Marketing of Livestock, Final Review/Exam</b>	<b>28 Days</b>	3G, 4C, 6B, 6C, 13D, 14A, 14B, 14C, 14D, 15A, 15B
	3(G) The student will analyze, evaluate, make inferences, and predict trends from data. 4(C) The student will draw inferences based on data related to promotional materials for products and services. 6(B) The student will identify animal products such as organic and farm-raised and consumption patterns relative to human diet and health issues. 6(C) The student will describe the growth and development of livestock as a global commodity. 13(D) The student will design, conduct, and complete research to solve a self-identified problem in scientific animal agriculture. 14(A) The student will map the stages of animal growth and development and how they relate to market readiness. 14(B) The student will describe the harvesting process. 14(C) The student will describe federal and state meat inspection standards such as safety, hygiene, and quality control standards. 14(D) The student will identify retail and wholesale cuts of meat and meat by-products and correlate to major muscle groups. 15(A) The student will compare various methods of marketing livestock. 15(B) The student will describe methods of marketing meat and meat products.		