

# Anatomy & Physiology

## At-A-Glance - Lamar CISD

<b>Professional Standards/Employability Skills/Technical Skills</b>	
<b>Ongoing Skills Imbedded All Year</b>	<p>A&amp;P 1(A) The student will demonstrate verbal and non-verbal communication in a clear, concise, and effective manner.</p> <p>A&amp;P 1(B) The student will exhibit the ability to cooperate, contribute, and collaborate as a member of a team.</p> <p>A&amp;P 11(A) The student will analyze the relationships between the anatomical structures and physiological functions of systems, including the integumentary, nervous, skeletal, muscular, cardiovascular, respiratory, digestive, urinary, immune, endocrine, and reproductive systems.</p> <p>A&amp;P 11(B) The student will evaluate the cause and effect of disease, trauma, and congenital defects on the structure and function of cells, tissues, organs, and systems.</p> <p>A&amp;P 11(D) The student will examine characteristics of the aging process on body systems.</p> <p>A&amp;P 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.</p> <p>A&amp;P 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.</p> <p>A&amp;P 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 which have been tested over a wide variety of conditions are incorporated into theories.</p> <p>A&amp;P 3(C) The student will know 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 and new technologies emerge.</p> <p>A&amp;P 3(D) The student will distinguish between scientific hypotheses and scientific theories.</p> <p>A&amp;P 3(E) The student will plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>A&amp;P 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, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures.</p> <p>A&amp;P 3(G) The student will analyze, evaluate, make inferences, and predict trends from data.</p> <p>A&amp;P 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.</p>
<b>Ongoing Ways to Show</b>	<p>A&amp;P 2(A) The student will demonstrate safe practices during laboratory and field investigations.</p> <p>A&amp;P 2(B) The student will demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.</p> <p>A&amp;P 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.</p> <p>A&amp;P 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.</p> <p>A&amp;P 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 which have been tested over a wide variety of conditions are incorporated into theories.</p> <p>A&amp;P 3(C) The student will know 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 and new technologies emerge.</p> <p>A&amp;P 3(D) The student will distinguish between scientific hypotheses and scientific theories.</p> <p>A&amp;P 3(E) The student will plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>A&amp;P 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, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures.</p> <p>A&amp;P 3(G) The student will analyze, evaluate, make inferences, and predict trends from data.</p> <p>A&amp;P 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.</p>

Grading Period	Unit Name	Estimated Time Frame	TEKS
<b>Grading Period 1</b> <b>28 Days</b>	<b>Introduction to Lab Safety</b>	<b>3 Days</b>	2A, 2B, 3E, 3F, 3G, 3H
	<p>A&amp;P 2(A) The student will demonstrate safe practices during laboratory and field investigations.</p> <p>A&amp;P 2(B) The student will demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.</p> <p>A&amp;P 3(E) The student will plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>A&amp;P 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, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures.</p> <p>A&amp;P 3(G) The student will analyze, evaluate, make inferences, and predict trends from data.</p> <p>A&amp;P 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.</p>		
	<b>Introduction to Anatomy &amp; Physiology</b>	<b>7 Days</b>	2A, 11A
	<p>A&amp;P 2(A) The student will demonstrate safe practices during laboratory and field investigations.</p> <p>A&amp;P 11(A) The student will analyze the relationships between the anatomical structures and physiological functions of systems, including the integumentary, nervous, skeletal, muscular, cardiovascular, respiratory, digestive, urinary, immune, endocrine, and reproductive systems.</p>		
	<b>Biochemistry, Cellular Biology</b>	<b>6 Days</b>	7A, 7B
	<p>A&amp;P 7(A) The student will investigate and describe the integration of the chemical and physical processes, including equilibrium, temperature, pH balance, chemical reactions, passive transport, active transport, and biofeedback, that contribute to homeostasis.</p> <p>A&amp;P 7(B) The student will determine the consequences of the failure to maintain homeostasis.</p>		
	<b>Histology</b>	<b>6 Days</b>	12A, 11B
	<p>A&amp;P 12(A) The student will explain embryological development of cells, tissues, organs, and systems.</p> <p>A&amp;P 11(B) The student will evaluate the cause and effect of disease, trauma, and congenital defects on the structure and function of cells, tissues, organs, and systems.</p>		
<b>Integumentary System</b>	<b>6 Days</b>	11A	
<p>A&amp;P 11(A) The student will analyze the relationships between the anatomical structures and physiological functions of systems, including the integumentary, nervous, skeletal, muscular, cardiovascular, respiratory, digestive, urinary, immune, endocrine, and reproductive systems.</p>			
<b>Grading Period 2</b> <b>25 Days</b>	<b>Skeletal System &amp; Joints</b>	<b>20 Days</b>	11A, 6A, 6D
	<p>A&amp;P 11(A) The student will analyze the relationships between the anatomical structures and physiological functions of systems, including the integumentary, nervous, skeletal, muscular, cardiovascular, respiratory, digestive, urinary, immune, endocrine, and reproductive systems.</p> <p>A&amp;P 6(A) The student will explain the coordination of muscles, bones, and joints that allows movement of the body.</p> <p>A&amp;P 6(D) The student will analyze and describe the effects of pressure, movement, torque, tension, and elasticity on the human body.</p>		
	<b>Joints &amp; Muscular System</b>	<b>5 Days</b>	6A, 8A, 11A, 6D, 6E
<p>A&amp;P 6(A) The student will explain the coordination of muscles, bones, and joints that allows movement of the body.</p> <p>A&amp;P 8(A) The student will illustrate conduction systems such as nerve transmission or muscle stimulation.</p> <p>A&amp;P 11(A) The student will analyze the relationships between the anatomical structures and physiological functions of systems, including the integumentary, nervous, skeletal, muscular, cardiovascular, respiratory, digestive, urinary, immune, endocrine, and reproductive systems.</p> <p>A&amp;P 6(D) The student will analyze and describe the effects of pressure, movement, torque, tension, and elasticity on the human body.</p> <p>A&amp;P 6(E) The student will perform an investigation to determine causes and effects of force variance and communicate findings.</p>			

<b>Grading Period 3</b> <b>25 Days</b>	<b>Joints &amp; Muscular System continues</b>	<b>10 Days</b>	6A, 8A, 11A, 6D, 6E
	<p>A&amp;P 6(A) The student will explain the coordination of muscles, bones, and joints that allows movement of the body.</p> <p>A&amp;P 8(A) The student will illustrate conduction systems such as nerve transmission or muscle stimulation.</p> <p>A&amp;P 11(A) The student will analyze the relationships between the anatomical structures and physiological functions of systems, including the integumentary, nervous, skeletal, muscular, cardiovascular, respiratory, digestive, urinary, immune, endocrine, and reproductive systems.</p> <p>A&amp;P 6(D) The student will analyze and describe the effects of pressure, movement, torque, tension, and elasticity on the human body.</p> <p>A&amp;P 6(E) The student will perform an investigation to determine causes and effects of force variance and communicate findings.</p>		
	<b>Nervous System</b>	<b>10 Days</b>	8A, 11A, 8C, 8B, 6B
	<p>A&amp;P 8(A) The student will illustrate conduction systems such as nerve transmission or muscle stimulation.</p> <p>A&amp;P 11(A) The student will analyze the relationships between the anatomical structures and physiological functions of systems, including the integumentary, nervous, skeletal, muscular, cardiovascular, respiratory, digestive, urinary, immune, endocrine, and reproductive systems.</p> <p>A&amp;P 8(C) The student will evaluate the application of advanced technologies such as electroencephalogram, electrocardiogram, bionics, transcutaneous electrical nerve stimulation, and cardioversion.</p> <p>A&amp;P 8(B) The student will investigate the therapeutic uses and effects of external sources of electricity on the body system.</p> <p>A&amp;P 6(B) The student will investigate and report the uses of various diagnostic and therapeutic technologies.</p>		
	<b>Special Senses</b>	<b>5 Days</b>	11A, 6B, 6C
<p>A&amp;P 11(A) The student will analyze the relationships between the anatomical structures and physiological functions of systems, including the integumentary, nervous, skeletal, muscular, cardiovascular, respiratory, digestive, urinary, immune, endocrine, and reproductive systems.</p> <p>A&amp;P 6(B) The student will investigate and report the uses of various diagnostic and therapeutic technologies.</p> <p>A&amp;P 6(C) The student will interpret normal and abnormal contractility conditions such as in edema, glaucoma, aneurysms, and hemorrhage.</p>			
<b>Grading Period 4</b> <b>33 Days</b>	<b>Endocrine System</b>	<b>10 Days</b>	11A
	<p>A&amp;P 11(A) The student will analyze the relationships between the anatomical structures and physiological functions of systems, including the integumentary, nervous, skeletal, muscular, cardiovascular, respiratory, digestive, urinary, immune, endocrine, and reproductive systems.</p>		
	<b>Hematology System</b>	<b>13 Days</b>	5D
	<p>A&amp;P 5(D) The student will analyze the effects of energy excess in disorders as they relate to body systems such as cardiovascular, endocrine, muscular, skeletal, and pulmonary.</p>		
	<b>Cardiovascular System</b>	<b>10 Days</b>	6C, 9A, 9B, 9C, 11A
<p>A&amp;P 6(C) The student will interpret normal and abnormal contractility conditions such as in edema, glaucoma, aneurysms, and hemorrhage.</p> <p>A&amp;P 9(A) The student will analyze the physical, chemical, and biological properties of transport systems, including circulatory, respiratory, and excretory.</p> <p>A&amp;P 9(B) The student will determine the factors that alter the normal functions of transport systems.</p> <p>A&amp;P 9(C) The student will contrast the interactions among the transport systems.</p> <p>A&amp;P 11(A) The student will analyze the relationships between the anatomical structures and physiological functions of systems, including the integumentary, nervous, skeletal, muscular, cardiovascular, respiratory, digestive, urinary, immune, endocrine, and reproductive systems.</p>			
	<b>Cardiovascular System continue</b>	<b>4 Days</b>	6C, 9A, 9B, 9C, 11A
	<p>A&amp;P 6(C) The student will interpret normal and abnormal contractility conditions such as in edema, glaucoma, aneurysms, and hemorrhage.</p> <p>A&amp;P 9(A) The student will analyze the physical, chemical, and biological properties of transport systems, including circulatory, respiratory, and excretory.</p> <p>A&amp;P 9(B) The student will determine the factors that alter the normal functions of transport systems.</p> <p>A&amp;P 9(C) The student will contrast the interactions among the transport systems.</p> <p>A&amp;P 11(A) The student will analyze the relationships between the anatomical structures and physiological functions of systems, including the integumentary, nervous, skeletal, muscular, cardiovascular, respiratory, digestive, urinary, immune, endocrine, and reproductive systems.</p>		
	<b>Lymphatic System</b>	<b>7 Days</b>	9C, 9A
<p>A&amp;P 9(C) The student will contrast the interactions among the transport systems.</p> <p>A&amp;P 9(A) The student will analyze the physical, chemical, and biological properties of transport systems, including circulatory, respiratory, and excretory.</p>			

<b>Grading Period 5 34 Days</b>	<b>Respiratory System</b>	<b>7 Days</b>	<b>9A</b>
	A&P 9(A) The student will analyze the physical, chemical, and biological properties of transport systems, including circulatory, respiratory, and excretory.		
	<b>Digestive System</b>	<b>8 Days</b>	<b>11A, 5A, 5B, 5C</b>
	A&P 11(A) The student will analyze the relationships between the anatomical structures and physiological functions of systems, including the integumentary, nervous, skeletal, muscular, cardiovascular, respiratory, digestive, urinary, immune, endocrine, and reproductive systems. A&P 5(A) The student will analyze the chemical reactions that provide energy for the body. A&P 5(B) The student will evaluate the modes, including the structure and function of the digestive system, by which energy is processed and stored within the body. A&P 5(C) The student will analyze the effects of energy deficiencies in malabsorption disorders as they relate to body systems such as Crohn's disease and cystic fibrosis.		
	<b>Excretory Systems/Body Fluids</b>	<b>8 Days</b>	<b>9A</b>
A&P 9(A) The student will analyze the physical, chemical, and biological properties of transport systems, including circulatory, respiratory, and excretory.			
<b>Grading Period 6 28 Days</b>	<b>Reproductive System</b>	<b>18 Days</b>	<b>12B, 12C, 13A, 13B</b>
	A&P 12(B) The student will identify the functions of the male and female reproductive systems. A&P 12(C) The student will summarize the human growth and development cycle. A&P 13(A) The student will recognize advances in stem cell research such as cord blood use. A&P 13(B) The student will recognize advances in bioengineering and transplant technology.		
	<b>Environmental Impact on Human Systems</b>	<b>5 Days</b>	<b>10A, 10B</b>
	A&P 10(A) The student will identify the effects of environmental factors such as climate, pollution, radioactivity, chemicals, electromagnetic fields, pathogens, carcinogens, and drugs on body systems. A&P 10(B) The student will explore measures to minimize harmful environmental factors on body systems.		
	<b>Advancements/Current Research in Human Systems</b>	<b>5 Days</b>	<b>4B, 4C, 4D, 4E, 4F, 11C</b>
A&P 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, published journal articles, and marketing materials. A&P 4(C) The student will draw inferences based on data related to promotional materials for products and services. A&P 4(D) The student will evaluate the impact of scientific research on society and the environment. A&P 4(E) The student will evaluate models according to their limitations in representing biological objects or events. A&P 4(F) The student will research and describe the history of science and contributions of scientists. A&P 11(C) The student will research technological advances and limitations in the treatment of system disorders.			