



Anatomy & Physiology (Proc 24)

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.

Anatomy & Physiology (Proc 24) Pre-Test/Post-Test TEKS Blueprint

Knowledge & Skills Statement	Student Expectation	iCEV Lesson Title
(6) Human body organization. The student demonstrates an understanding of the anatomic and physiological basis of life and the ability to explain the interdependence of structure and function in biological systems. The student is expected to:	(A) distinguish between the six levels of structural organization in the human body, including chemical, cellular, tissue, organ, system, and organism, and explain their interdependence;	The Human Body
(6) Human body organization. The student demonstrates an understanding of the anatomic and physiological basis of life and the ability to explain the interdependence of structure and function in biological systems. The student is expected to:	(D) research and describe negative and positive feedback loops as they apply to homeostasis; and	Understanding Homeostasis
(7) Histology. The student demonstrates the ability to analyze the structure and function of eukaryotic cells in relation to the formation of tissue. The student is expected to:	(A) define tissue and identify the four primary tissue types, their subdivisions, and functions;	The Human Body
(7) Histology. The student demonstrates the ability to analyze the structure and function of eukaryotic cells in relation to the formation of tissue. The student is expected to:	(B) compare epithelial tissue and connective tissue in terms of cell arrangement and interstitial materials;	The Human Body
(8) Skeletal system. The student analyzes the relationships between the anatomical structures and physiological functions of the skeletal system. The student is expected to:	(A) identify and differentiate between the axial skeleton and appendicular skeleton;	Human Anatomy: Skeletal System
(8) Skeletal system. The student analyzes the relationships between the anatomical structures and physiological functions of the skeletal system. The student is expected to:	(C) identify and locate the anatomy of bone, including spongy and compact tissue, epiphysis, diaphysis, medullary cavity, periosteum, bone marrow, and endosteum;	Human Anatomy: Skeletal System
(8) Skeletal system. The student analyzes the relationships between the anatomical structures and physiological functions of the skeletal system. The student is expected to:	(D) explain the major physiological functions of the skeletal system;	Human Physiology: Skeletal System
(8) Skeletal system. The student analyzes the relationships between the anatomical structures and physiological functions of the skeletal system. The student is expected to:	(F) identify and describe the different types of fractures such as compound, complete, simple, spiral, greenstick, hairline, transverse, and comminuted; and	Human Diseases and Disorders: Skeletal System
(8) Skeletal system. The student analyzes the relationships between the anatomical structures and physiological functions of the skeletal system. The student is expected to:	(G) identify and describe common diseases and disorders of the skeletal system such as scoliosis, osteoporosis, and bone cancer.	Human Diseases and Disorders: Skeletal System
(9) Integumentary system. The student analyzes the relationships between the anatomical structures and physiological functions of the integumentary system. The student is expected to:	(A) identify and describe the structures of the integumentary system, including layers of the skin, accessory organs within each layer, and glandular components in each layer;	Human Anatomy: Integumentary System
(9) Integumentary system. The student analyzes the relationships between the anatomical structures and physiological functions of the integumentary system. The student is expected to:	(C) describe and explain the process of tissue repair and scar formation; and	Human Physiology: Integumentary System
(9) Integumentary system. The student analyzes the relationships between the anatomical structures and physiological functions of the integumentary system. The student is expected to:	(D) identify and describe common diseases and disorders of the integumentary system such as skin cancer and psoriasis.	Human Diseases and Disorders: Integumentary System
(10) Muscular system. The student analyzes the relationships between the anatomical structures and physiological functions of the muscular system. The student is expected to:	(A) explain the major physiological functions of the muscular system, including voluntary movement, involuntary movement, heat production, and maintaining posture;	Human Anatomy: Muscular System
(10) Muscular system. The student analyzes the relationships between the anatomical structures and physiological functions of the muscular system. The student is expected to:	(C) examine common characteristics of muscle tissue, including excitability, contractibility, extensibility, and elasticity;	Human Anatomy: Muscular System
(10) Muscular system. The student analyzes the relationships between the anatomical structures and physiological functions of the muscular system. The student is expected to:	(E) examine the microscopic anatomy of a muscle fiber, including sarcomere, actin, and myosin;	Human Physiology: Muscular System
(10) Muscular system. The student analyzes the relationships between the anatomical structures and physiological functions of the muscular system. The student is expected to:	(F) describe the mechanisms of muscle contraction at the neuromuscular junction;	Human Physiology: Muscular System

Anatomy & Physiology (Proc 24) Pre-Test/Post-Test TEKS Blueprint

Knowledge & Skills Statement	Student Expectation	iCEV Lesson Title
(10) Muscular system. The student analyzes the relationships between the anatomical structures and physiological functions of the muscular system. The student is expected to:	(H) identify and describe common diseases and disorders of the muscular system such as muscle strains and muscular dystrophy; and	Human Diseases and Disorders: Muscular System
(11) Nervous system. The student analyzes the relationship between the anatomical structures and physiological functions of the nervous system. The student is expected to:	(A) summarize and distinguish between the major physiological functions of the nervous system, including sensation, integration, and motor response;	Human Physiology: Nervous System
(11) Nervous system. The student analyzes the relationship between the anatomical structures and physiological functions of the nervous system. The student is expected to:	(C) investigate and explain the interdependence between the cranial and spinal nerves with the special senses of vision, hearing, smell, and taste;	Nervous System: Understanding the Senses
(11) Nervous system. The student analyzes the relationship between the anatomical structures and physiological functions of the nervous system. The student is expected to:	(D) describe the anatomy of the structures associated with the senses, including vision, hearing, smell, taste, and touch;	Nervous System: Understanding the Senses
(11) Nervous system. The student analyzes the relationship between the anatomical structures and physiological functions of the nervous system. The student is expected to:	(E) identify the anatomical and physiological divisions of the peripheral nervous system and central nervous system;	Human Anatomy: Nervous System
(11) Nervous system. The student analyzes the relationship between the anatomical structures and physiological functions of the nervous system. The student is expected to:	(G) analyze the functional and structural differences between gray and white matter relative to neurons;	Human Anatomy: Nervous System
(11) Nervous system. The student analyzes the relationship between the anatomical structures and physiological functions of the nervous system. The student is expected to:	(H) distinguish between the types of neurons and explain the initiation of a nerve impulse during resting and action potential;	Human Anatomy: Nervous System
(11) Nervous system. The student analyzes the relationship between the anatomical structures and physiological functions of the nervous system. The student is expected to:	(I) categorize the major neurotransmitters by chemical and physical mechanisms; and	Human Anatomy: Nervous System
(12) Endocrine system. The student analyzes the relationships between the anatomical structures and physiological functions of the endocrine system. The student is expected to:	(A) identify and locate the nine glands associated with the endocrine system, including the ovaries, testes, pineal gland, pituitary gland, thyroid gland, parathyroid glands, thymus, pancreas, and adrenal glands;	Human Anatomy: Endocrine System
(12) Endocrine system. The student analyzes the relationships between the anatomical structures and physiological functions of the endocrine system. The student is expected to:	(B) compare and contrast endocrine and exocrine glands and identify the glands associated with each;	Human Anatomy: Endocrine System
(12) Endocrine system. The student analyzes the relationships between the anatomical structures and physiological functions of the endocrine system. The student is expected to:	(D) research the impact of the endocrine systems on homeostatic mechanisms and other body systems such as the integration between the hypothalamus and the pituitary gland;	Human Anatomy: Endocrine System
(12) Endocrine system. The student analyzes the relationships between the anatomical structures and physiological functions of the endocrine system. The student is expected to:	(E) explain how the endocrine glands are regulated, including neural, hormonal, and humoral control; and	Human Physiology: Endocrine System
(12) Endocrine system. The student analyzes the relationships between the anatomical structures and physiological functions of the endocrine system. The student is expected to:	(F) identify and describe common diseases and disorders of the endocrine system such as hypothyroidism, pancreatic cancer, and diabetes.	Human Anatomy: Endocrine System
(13) Urinary system. The student analyzes the relationships between the anatomical structures and physiological functions of the urinary system. The student is expected to:	(A) identify and describe the anatomical structures and functions of the urinary system, including the kidney, ureters, bladder, and urethra;	Human Anatomy: Urinary System
(13) Urinary system. The student analyzes the relationships between the anatomical structures and physiological functions of the urinary system. The student is expected to:	(C) summarize and illustrate the structures, functions, and types of nephrons;	Human Physiology: Urinary System
(13) Urinary system. The student analyzes the relationships between the anatomical structures and physiological functions of the urinary system. The student is expected to:	(D) examine the methods of fluid balance and homeostasis in the urinary system, including fluid intake and output;	Human Physiology: Urinary System
(13) Urinary system. The student analyzes the relationships between the anatomical structures and physiological functions of the urinary system. The student is expected to:	(F) describe the relationship between the nervous system, renal system, and muscular system before and during micturition; and	Human Physiology: Urinary System

Anatomy & Physiology (Proc 24) Pre-Test/Post-Test TEKS Blueprint

Knowledge & Skills Statement	Student Expectation	iCEV Lesson Title
(14) Cardiovascular system. The student analyzes the relationships between the anatomical structures and physiological functions of the cardiovascular system. The student is expected to:	(A) identify the major functions of the cardiovascular system, including transport, maintaining homeostasis, and immune response;	Human Anatomy: Cardiovascular System
(14) Cardiovascular system. The student analyzes the relationships between the anatomical structures and physiological functions of the cardiovascular system. The student is expected to:	(C) investigate and illustrate how systemic circulation transports blood, gasses, and nutrients from the heart to the internal anatomy of the heart, including tissue layers, chambers, and valves, and external anatomy of the heart, including coronary vessels;	Human Physiology: Cardiovascular System
(14) Cardiovascular system. The student analyzes the relationships between the anatomical structures and physiological functions of the cardiovascular system. The student is expected to:	(D) describe the relationship between blood flow and blood pressure, including systolic and diastolic pressure, pulse pressure, and mean arterial pressure;	Human Anatomy: Cardiovascular System
(14) Cardiovascular system. The student analyzes the relationships between the anatomical structures and physiological functions of the cardiovascular system. The student is expected to:	(F) illustrate how the PQRST waves of an electrocardiogram (EKG) demonstrate the conduction of electricity through the structures of the heart;	Human Physiology: Cardiovascular System
(14) Cardiovascular system. The student analyzes the relationships between the anatomical structures and physiological functions of the cardiovascular system. The student is expected to:	(G) describe the relationship between the cardiovascular system, nervous system, and muscular system in regulating cardiac output; and	Human Physiology: Cardiovascular System
(15) Lymphatic system. The student analyzes the relationships between the anatomical structures and physiological functions of the lymphatic system and understands the immune response. The student is expected to:	(B) describe the structure and function of the lymphatic organs and explain how lymph moves through the body;	Human Physiology: Lymphatic System
(15) Lymphatic system. The student analyzes the relationships between the anatomical structures and physiological functions of the lymphatic system and understands the immune response. The student is expected to:	(C) identify and describe the role and function of the immune cells, including T cells and B cells, within the lymphatic system structures;	Human Physiology: Lymphatic System
(15) Lymphatic system. The student analyzes the relationships between the anatomical structures and physiological functions of the lymphatic system and understands the immune response. The student is expected to:	(D) identify and determine antigens associated with ABO blood typing, including Rhesus (Rh) factor;	Lymphatic System: Blood Typing
(15) Lymphatic system. The student analyzes the relationships between the anatomical structures and physiological functions of the lymphatic system and understands the immune response. The student is expected to:	(F) describe the role of antigens and antibodies in the immune response; and	Human Physiology: Lymphatic System
(16) Digestive system. The student analyzes the relationships between the anatomical structures and physiological functions of the digestive system. The student is expected to:	(A) examine the anatomical structures and function of the alimentary canal and accessory organs;	Human Anatomy: Digestive System
(16) Digestive system. The student analyzes the relationships between the anatomical structures and physiological functions of the digestive system. The student is expected to:	(C) evaluate the modes by which energy is processed and stored within the body, including ingestion, propulsion, absorption, and elimination; and	Human Physiology: Digestive System
(16) Digestive system. The student analyzes the relationships between the anatomical structures and physiological functions of the digestive system. The student is expected to:	(D) identify and describe common diseases and disorders of the digestive system such as gallstones, Crohn's disease, irritable bowel syndrome, and gastroesophageal reflux disorder.	Human Diseases and Disorders: Digestive System
(17) Respiratory system. The student analyzes the relationships between the anatomical structures and physiological functions of the respiratory system. The student is expected to:	(B) compare and contrast the functions of upper and lower respiratory tract;	Human Anatomy: Respiratory System
(17) Respiratory system. The student analyzes the relationships between the anatomical structures and physiological functions of the respiratory system. The student is expected to:	(D) describe the relationship between the respiratory and cardiovascular systems during pulmonary circulation;	Human Physiology: Cardiovascular System
(18) Reproductive system. The student analyzes the relationships between the anatomical structures and physiological functions of the reproductive system. The student is expected to:	(A) explain embryological development of cells, tissues, organs, and systems;	Reproductive System: Embryological Development

Anatomy & Physiology (Proc 24) Pre-Test/Post-Test TEKS Blueprint

Knowledge & Skills Statement	Student Expectation	iCEV Lesson Title
(18) Reproductive system. The student analyzes the relationships between the anatomical structures and physiological functions of the reproductive system. The student is expected to:	(B) describe and examine the location, structure, and functions of the internal and external female and male reproductive organs and accessory glands;	Human Anatomy: Reproductive System
(19) Emerging technologies. The student identifies emerging technological advances in science and healthcare treatment and delivery. The student is expected to:	(B) research and describe advances in science and medicine at the cellular level such as stem cells and gene therapy.	Emerging Technologies: Science and Medicine