

Anatomy & Physiology Standards and Benchmarks

Standard 1: Understands and applies principles of scientific inquiry				
<i>Power Benchmarks: Identifies questions and concepts that guide science investigations Uses technology and mathematics to improve investigations and communications Formulates and revises scientific explanations and models using logic and evidence Recognizes and analyzes alternative explanations and models</i>				
Course Level Benchmarks	Vocabulary	Knowledge	Skills	Classroom Resources
A. Formulates and revises scientific explanations and models	<ul style="list-style-type: none"> • scientific explanation • scientific model • data • within tolerance • scientific method 	<ul style="list-style-type: none"> • Knows scientific explanations and models are based on data • Know new data may lead to the modification of scientific explanations and models 	<ul style="list-style-type: none"> • Analyzes data with respect to scientific explanations and models (ACT, SAT, ITED, AP BIO) • Adjusts scientific explanations and models based on data (ACT, SAT, ITED, AP BIO) 	Physiology Curriculum Guide Emphasized throughout the entire curriculum <u>Technology:</u> use of science to solve everyday problems
B. Understands how scientific knowledge changes with new evidence	<ul style="list-style-type: none"> • scientific knowledge • evidence • influence • ethics 	<ul style="list-style-type: none"> • Knows examples of scientific knowledge that changed when new evidence was presented • Knows that science is an ongoing process and is always open to new ideas 	<ul style="list-style-type: none"> • Describes how science concepts have evolved with the discovery of new evidence • Hypothesizes how current science concepts and practices will influence future societies 	
C. Uses technology and mathematics to perform accurate scientific investigations and communications	<ul style="list-style-type: none"> • technology • mathematics • probability • ratio • accuracy • scientific investigations • scientific communication • spreadsheet and graphs 	<ul style="list-style-type: none"> • Knows how technology can help scientific investigations and communications • Knows mathematical computations and formulas are essential to scientific investigations 	<ul style="list-style-type: none"> • Determines tools most appropriate to use given a particular situation • Uses the necessary mathematics for a particular situation (ACT, SAT, ITED, AP BIO) • Calculates results with a given degree of accuracy • Formulates graphic representation of data (ACT, SAT, ITED, AP BIO) 	

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Course Level Benchmarks	Course Level Benchmarks	Course Level Benchmarks	Course Level Benchmarks	Course Level Benchmarks
D. Demonstrates safe handling procedures	<ul style="list-style-type: none"> • OSHA • EPA • MSDS • Right to Know • hazardous • safety procedures 	<ul style="list-style-type: none"> • Knows appropriate safety procedures for a given situation • Knows where safety devices are located in the classroom • Understands the process of waste disposal 	<ul style="list-style-type: none"> • Follows required safety procedures • Recognizes, reports, and corrects safety problems • Follows waste disposal procedures 	Physiology Curriculum Guide Emphasized throughout the entire curriculum

Anatomy & Physiology Standards and Benchmarks

Standard 2: Understands and applies principles of life science

*Power Benchmark: Understands and applies knowledge of the cell
Understands and applies knowledge the behavior of organisms*

Course Level Benchmarks	Vocabulary	Knowledge	Skills	Classroom Resources
<p>A. Analyzes the relationship between form and function of human body systems</p> <p>- Organization of the Body</p>	<p>Organization of the Body</p> <ul style="list-style-type: none"> • anatomy • physiology • homeostasis • anatomical position • directional terms • planes 	<p>Organization of the Body</p> <ul style="list-style-type: none"> • Knows the study of the human body is divided into two areas: anatomy and physiology • Knows there is a language to describe the location of a body structure relative to the another • Knows the human body is organized by a series of building-block components • Knows the body as a whole must maintain a relatively stable internal environment despite fluctuations in the external environment • Understands health and disease are relative terms 	<p>Organization of the Body</p> <ul style="list-style-type: none"> • Distinguishes between anatomy and physiology and describes the divisions of anatomy (AP BIO) • Uses examples to identify the directional terms and body planes • Describes the six levels of structural organization • Defines homeostasis and describes its importance to survival (AP BIO) • Describes the four categories of human disease 	<p>Physiology Curriculum Guide</p> <p>United Streaming Video</p>

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Course Level Benchmarks	Vocabulary	Knowledge	Skills	Classroom Resources
<p>A. Analyzes the relationship between form and function of human body systems (con't)</p> <p>- Systems that Support or Move the Body</p>	<p>Systems that Support or Move the Body</p> <ul style="list-style-type: none"> • skeletal system • tissue • bone • joint • muscular system • contraction • origin • insertion 	<p>Systems that Support or Move the Body</p> <ul style="list-style-type: none"> • Knows the skeletal system performs five major functions • Knows bones are continuous recycling • Knows muscle is composed of skeletal muscle tissue, connective tissue, and nerve tissue • Knows muscle tissue consists of specialized cells that shorten 	<p>Systems that Support or Move the Body</p> <ul style="list-style-type: none"> • Describes how bone grows and reforms after a fracture or break • Defines the criteria used to classify joints structurally and functionally • Describes the structure and function of the three types of muscle tissue 	<p>Physiology Curriculum Guide</p> <p>United Streaming Video</p>

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<i>Power Benchmark: Understands and applies knowledge of the cell Understands and applies knowledge the behavior of organisms</i>				
Course Level Benchmarks	Vocabulary	Knowledge	Skills	Classroom Resources
<p>A. Analyzes the relationship between form and function of human body systems (con't)</p> <p>- Systems that Control Communication</p>	<p>Systems that Control Communication</p> <ul style="list-style-type: none"> • nervous system • neurons • fibers • synapse • sensory • sensation • sensory receptors 	<p>Systems that Control Communication</p> <ul style="list-style-type: none"> • Knows the nervous system is the control center and communication network of the body 	<p>Systems that Control Communication</p> <ul style="list-style-type: none"> • Identifies how the nervous system mediates communication between the different parts of the body and interactions with the environment • Draws a brain map to identify the various brain structures 	<p>Physiology Curriculum Guide</p> <p>United Streaming Video</p>

Anatomy & Physiology Standards and Benchmarks

Standard 2: Understands and applies principles of life science (con't)

Concepts: Describes the structure and function of cells, organs, and systems in the human body

Course Level Benchmarks	Vocabulary	Knowledge	Skills	Classroom Resources
<p>A. Analyzes the relationship between form and function of human body systems (con't)</p> <p style="padding-left: 20px;">- Systems that Transport</p>	<p>Systems that Transport</p> <ul style="list-style-type: none"> • blood system • cardiovascular system 	<p>Systems that Transport</p> <ul style="list-style-type: none"> • Knows blood is a type of connective tissue and is classified as part of the circulatory system • Knows blood typing is based on the presence of proteins 	<p>Systems that Transport</p> <ul style="list-style-type: none"> • Describes the composition and physical characteristics of blood • Distinguishes between the formed elements on the basis of their concentrations in blood, their structure, and their major function • Identifies the importance of blood typing in performing blood transfusions • Describes the structure and function of the heart • Traces the flow of blood through the chambers of the heart • Distinguishes between the types of blood vessels on the basis of their structure and function 	<p>Physiology Curriculum Guide</p> <p>United Streaming Video</p>

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Course Level Benchmarks	Vocabulary	Knowledge	Skills	Classroom Resources
<p>A. Analyzes the relationship between form and function of human body systems (con't)</p> <ul style="list-style-type: none"> - Metabolic Processing Systems 	<p>Metabolic Processing Systems</p> <ul style="list-style-type: none"> • respiratory system • respiration • inspiration • expiration • digestive system • digestion • secretion 	<p>Metabolic Processing Systems</p> <ul style="list-style-type: none"> • Knows the respiratory system helps meets the metabolic needs of the body • Understands the difference between respiration and cellular respiration • Knows the organs of the digestive system are organized to maximize the efficiency of reducing foods to smaller particles 	<p>Metabolic Processing Systems</p> <ul style="list-style-type: none"> • Identifies the organs of the respiratory system on the basis of their location, structure, and functions • Describes the events involved in inspiration and expiration • Explains how cellular energy demands relate to respiration rate • Identifies the two divisions of the digestive system • Defines the six processes of digestion • Describes the structures and functions with the digestive system 	<p>Physiology Curriculum Guide</p> <p>United Streaming Video</p>

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Course Level Benchmarks	Vocabulary	Knowledge	Skills	Classroom Resources
<p>A. Analyzes the relationship between form and function of human body systems (con't)</p> <p>- The Cycle of Life</p>	<p>The Cycle of Life</p> <ul style="list-style-type: none"> • reproductive system • neural mechanisms • hormonal mechanisms • development • prenatal period • postnatal period 	<p>The Cycle of Life</p> <ul style="list-style-type: none"> • Knows the reproductive system is the only system that is not directly involved in maintaining internal homeostasis • Knows the reproductive system's overall function is the production of offspring • Knows human development is a continuous process of body change that begins at fertilization and continues until death 	<p>The Cycle of Life</p> <ul style="list-style-type: none"> • Identifies the organs of the male system on the basis of their structure and functions • Describes the neural and hormonal mechanisms that influence male reproduction • Identifies the organs of the female system on the basis of their structure and functions • Distinguishes between the prenatal and postnatal periods of development • Describes the process of fertilization and the changes it induces • Identifies the main events during the fetal period of development 	<p>Physiology Curriculum Guide</p> <p>United Streaming Video</p>