

# Human Anatomy & Physiology (Anatomy)

<b>Unit Title:</b> 1. Introduction to the Human Body	<b>Duration:</b> 1 week		
<b>Objective:</b> TLW demonstrate the organization of the human body and homeostatic regulation			
<b>Literacy Activities:</b> -Close reading -Teacher/Student Think/Read Aloud -Contextual Problem Solving -Pair & share -Current events reading, summarizing, and responding			
<b>Skills:</b> -Define <i>anatomy</i> and <i>physiology</i> , directional terms and sections/regions used in describing the body and the relationship of body parts to one another. -List and discuss in order of increasing complexity the levels of organization of the human body. -Explain the meaning of homeostasis and give examples of regulatory mechanisms.			
<b>Vocabulary:</b>			
Anatomy	Physiology	Supine	Prone
Superior	Inferior	Anterior	Posterior
Ventral	Dorsal	Medial	Lateral
Proximal	Distal	Superficial	Deep
Thoracic	Abdominopelvic	Axial	Appendicular
Homeostasis	Negative Feedback Loop	Positive Feedback Loop	Dissection

<b>Unit Title:</b> 2. Cells		<b>Duration:</b> 3 weeks
<b>Objective:</b> TLW understand the basic processes of cells and how they move substances across the membranes.		
<b>Literacy Activities:</b> -Close reading -Teacher/Student Think/Read Aloud -Contextual Problem Solving -Pair & share -Current events reading, summarizing, and responding		
<b>Skills:</b> -Identify the structural and functional parts of a cell -Compare the major passive and active transport processes that act to move substances through cell membranes -Compare and discuss DNA and RNA and their function in protein synthesis		
<b>Vocabulary:</b>		
ATP centriole cilia crenation DNA diffusion endoplasmic reticulum	filtration flagellum Golgi apparatus hypertonic hypotonic lysosome nucleoplasm	organelle osmosis phagocytosis pinocytosis ribosome RNA

<b>Unit Title:</b> 3. Cell Reproduction and Tissues		<b>Duration:</b> 3 weeks
<b>Objective:</b> TLW identify major tissues of the body		
<b>Literacy Activities:</b> -Close reading -Teacher/Student Think/Read Aloud -Contextual Problem Solving -Pair & share -Current events reading, summarizing, and responding		
<b>Skills:</b> -List and discuss the 4 major types of tissues in the body. -Identify the major types of tissue using a microscope. -Discuss the stages of mitosis and explain the importance of cellular reproduction.		
<b>Vocabulary:</b>		
adipose axon chondrocyte collagen cuboidal columnar	goblet cell mitosis prophase metaphase anaphase telophase	neuron replication squamous transcription translation

<b>Unit Title:</b> 4. Integumentary System		<b>Duration:</b> 3 weeks
<b>Objective:</b> TLW the integumentary system and its role in protecting the body.		
<b>Literacy Activities:</b> -Close reading -Teacher/Student Think/Read Aloud -Pair & share -Current events reading, summarizing, and responding		
<b>Skills:</b> -Describe the structure and function of the epidermis and dermis -List and briefly describe the accessory organs of the skin. -Understand the role of the skin in protecting the body and regulating its temperature.		
<b>Vocabulary:</b>		
apocrine sweat gland arrector pili axon blister chondrocyte cutaneous cuticle cyanosis dermis eccrine sweat gland epidermis	follicle hypodermis keratin lancuna lunula melanin mucocutaneous junction mucous membrane neuron osteocyte papilla	sebaceous gland sebum serous membrane stratum corneum stratum germinativum subcutaneous sudoriferous gland synovial membrane

<b>Unit Title:</b> 5. Skeletal System		<b>Duration:</b> 2.5 weeks
<b>Objective:</b> TLW identify the purpose and structure of the bones of the skeleton.		
<b>Literacy Activities:</b> -Close reading -Teacher/Student Think/Read Aloud -Pair & share -Current events reading, summarizing, and responding		
<b>Skills:</b> -Discuss the functions of the skeletal system. -Identify the major anatomical structures found in a typical long bone. -List the bones found in the main subdivisions of the skeleton. -Compare the major types of joints.		
<b>Vocabulary:</b>		
appendicular skeleton articular cartilage articulation axial skeleton chondrocytes compact bone diaphysis	epiphysis fontanel hemopoiesis osteoblasts osteoclasts osteocytes pectoral girdle	pelvic girdle red bone marrow sinus synovial membrane yellow bone marrow

<b>Unit Title:</b> 6. Muscular System		<b>Duration:</b> 2.5 weeks
<b>Objective:</b> TLW identify muscle structure and understand contraction and effects of exercise		
<b>Literacy Activities:</b> -Close reading -Teacher/Student Think/Read Aloud -Contextual Problem Solving -Pair & share -Current events reading, summarizing, and responding		
<b>Skills:</b> -Locate and compare the structure and function of the three major types of muscle tissue. -Discuss the microscopic structure of a skeletal muscle sarcomere and motor unit and how contraction occurs. -Identify and give the function of the major muscle groups. -Isolate and identify muscles of a rat.		
<b>Vocabulary:</b>		
abduction actin adduction all or none antagonist atrophy bursa extension fatigue flexion	hypertrophy hypothermia insertion isometric isotonic motor neuron myofilaments myosin neuromuscular junction origin	oxygen debt paralysis prime mover sarcomere synergist tendon tetanic contraction tonic contraction

<b>Unit Title:</b> 7. Digestive System		<b>Duration:</b> 2.5 weeks
<b>Objective:</b> TLW understand the purpose and parts of the digestive system.		
<b>Literacy Activities:</b> -Close reading -Teacher/Student Think/Read Aloud -Group reading -Pair & share -Current events reading, summarizing, and responding		
<b>Skills:</b> -List in sequence each of the component parts or segments of the alimentary canal. -Identify accessory organs of digestion. -Define and contrast mechanical and chemical digestion and note where they take place. -Discuss the basics of protein, lipid, and carbohydrate digestion. -Dissect and identify internal organs of rats.		
<b>Vocabulary:</b>		
absorption alimentary canal appendicitis bolus chyme constipation diarrhea	digestion emulsify feces frenulum gastroesophageal reflux jaundice mastication	mesentery papilla peristalsis rugae ulcer uvula villus

<b>Unit Title:</b> 8. Nutrition	<b>Duration:</b> 2 weeks			
<b>Objective:</b> TLW describe metabolic roles of the major nutrient groups.				
<b>Literacy Activities:</b> -Close reading -Teacher/Student Think/Read Aloud -Pair & share -Current events reading, summarizing, and responding				
<b>Skill:</b> -Define and contrast anabolism and catabolism -Describe the metabolic roles of carbohydrates, lipids, proteins, vitamins, and minerals -Define basal metabolic rate and list factors that affect it -Track and classify food intake for one week				
<b>Vocabulary:</b> <table><tr><td></td><td></td><td></td></tr></table>				



<b>Unit Title:</b> 9. Rat dissection		<b>Duration:</b> 3 weeks
<b>Objective:</b> TLW identify major muscle groups, internal organs, and blood vessels of the rat.		
<b>Literacy Activities:</b> -Close reading -Teacher/Student Think/Read Aloud -Pair & share -Current events reading, summarizing, and responding		
<b>Skills:</b> -Identify external anatomy before skinning the rat -Isolate and identify major muscles -Identify internal body organs -Isolate and identify major blood vessels		
<b>Vocabulary:</b>		
aorta biceps brachii brachialis carotid artery cortex external oblique femoral artery/vein gastrocnemius gluteus muscles	iliac artery/vein intercostals internal oblique masseter medulla pectoralis muscle pinna rectus abdominus rectus femoris	renal artery/vein semitendons subclavian artery/vein triceps brachii ureter urethra vena cava

<b>Unit Title:</b> 10. Blood		<b>Duration:</b> 1.5 weeks
<b>Objective:</b> TLW describe the components of blood and their function as well as compatibility of donations.		
<b>Literacy Activities:</b> -Close reading -Teacher/Student Think/Read Aloud -Pair & share -Current events reading, summarizing, and responding		
<b>Skills:</b> -Describe the primary functions and formed elements of blood -Explain the steps in blood clotting -Describe ABO and Rh blood typing		
<b>Vocabulary:</b>		
anemia antibodies antigens embolus erythroblastosis fetalis erythrocyte fibrin fibrinogen	hematocrit hemoglobin heparin leukemia leukocyte leukocytosis lymphocyte	oxyhemoglobin phagocyte plasma polycythemia serum thrombocyte thrombus

<b>Unit Title:</b> 11. Circulatory & Lymphatic Systems		<b>Duration:</b> 2 weeks
<b>Objective:</b> TLW understand how blood circulates through the heart and blood vessels. TLW also understand the importance of the fluids of the cardiovascular and lymphatic systems.		
<b>Literacy Activities:</b> -Close reading -Teacher/Student Think/Read Aloud -Pair & share -Current events reading, summarizing, and responding		
<b>Skills:</b> -Identify the heart chambers, sounds, and valves -Trace blood through the heart and body -Explain the relationship between blood vessel structure and function -Use a sphygmomanometer to take blood pressure and know the primary factors involved in its generation -Identify major organs of the lymphatic system -Compare and contrast the major types of immunity		
<b>Vocabulary:</b>		
angina arteriole artery AV valve atrium bicuspid valve capillary cardiac output	CPR coronary bypass surgery diastolic pressure ECG endocardium myocardial infarction myocardium pacemaker	pericardium pulse tricuspid valve vein ventricle venule

<b>Unit Title:</b> 12. Respiratory System		<b>Duration:</b> 2 weeks
<b>Objective:</b> TLW comprehend breathing and the organs through which air passes		
<b>Literacy Activities:</b> -Close reading -Teacher/Student Think/Read Aloud -Pair & share -Current events reading, summarizing, and responding		
<b>Skills:</b> -List the major organs of the respiratory system and describe their functions -Compare and contrast inhalation and exhalation -Discuss the volumes of air exchanged during pulmonary ventilation -Use spirometers to determine vital capacity		
<b>Vocabulary:</b>		
alveoli apnea bronchi ERV Heimlich maneuver hyperventilation	IRV larynx oxyhemoglobin pharynx pulmonary ventilation RV	respiration spirometer TV trachea VC

<b>Unit Title:</b> 13. Urinary system		<b>Duration:</b> 1 weeks
<b>Objective:</b> TLW recognize the functions of the urinary organs and factors that influence urine production		
<b>Literacy Activities:</b> -Close reading -Teacher/Student Think/Read Aloud -Pair & share -Current events reading, summarizing, and responding		
<b>Skills:</b> -Identify the organs of the urinary system and give the generalized function of each -Name the parts of a nephron and describe their role in urine formation -List factors that influence urine volume -Discuss avenues by which water enters and leaves the body on a regular basis -Identify normal vs irregular urine samples		
<b>Vocabulary:</b>		
cystitis diuretic edema incontinence	interstitial fluid micturition polyuria renal	ureter urethra voiding

<b>Unit Title:</b> 14. Nervous System and Special Senses	<b>Duration:</b> 2 weeks			
<b>Objective:</b> TLW understand how impulses are sent through the nervous system and how special sense organs contribute to the overall body's function				
<b>Literacy Activities:</b> -Close reading -Teacher/Student Think/Read Aloud -Pair & share -Current events reading, summarizing, and responding				
<b>Skills:</b> -List the organs and divisions of the nervous system -Discuss how nerve impulses are sent -Identify the major components of the brain -Describe the structure of the eye and functions of its component -Identify the ear's anatomy and its sensory function in hearing and equilibrium -Discuss chemoreceptors in the nose and tongue				
<b>Vocabulary:</b> <table><tr><td></td><td></td><td></td></tr></table>				

<b>Unit Title:</b> 1		<b>Duration:</b> weeks
<b>Objective:</b> TLW		
<b>Literacy Activities:</b> -Close reading -Teacher/Student Think/Read Aloud -Pair & share -Current events reading, summarizing, and responding		
<b>Skills:</b> -		
<b>Vocabulary:</b>		