GRADE LEVEL: **10-12** **SUBJECT:** **Anatomy and Physiology** **DATE:** **2017-2018**

MONTH/GRADING PERIOD: Q1 **MASTER 4-5-18**

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
CELLS					
Levels of Organization in the Human Body: Cellular • Parts of the Cell • Cellular Transport	**AP.1.1:** Investigate the forms of cellular transport within and across cell membranes. Explain how passive and active transport move materials through the body and into/out of cells. Describe how simple diffusion differs from facilitated diffusion. Describe how vesicular transport moves materials within a cell.	• Investigate the forms of cellular transport within and across cell membranes. • Explain how passive and active transport move materials through the body and into/out of cells. • Describe how simple diffusion differs from facilitated diffusion. • Describe how vesicular transport moves materials within a cell.	• Labeling Diagram • Cell Membrane Transport Lab • Cell Quiz	• Nucleus • Centrioles • Ribosomes • Lysosomes • Vacuoles • Mitochondria • Golgi • Rough ER • Smooth ER • Nucleolus • Cilia/Flagella • Phosphate • Lipid • Cholesterol • Protein • Carbohydrate • Passive Transport • Active Transport • Endocytosis • Exocytosis • Phagocytosis • Hypotonic • Hypertonic • Isotonic	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Cell Division	**AP.1.2:** Develop a model which describes the stages of somatic cell division (mitosis), how it contributes to maintaining homeostasis, and why cellular differentiation is vital to development.	• Develop a model which describes the stages of somatic cell division (mitosis). • Describe how the model contributes to maintaining homeostasis. • Describe why cellular differentiation is vital to cell development.	• Coloring Worksheet	• Interphase • Prophase • Metaphase • Anaphase • Telophase • Cytokinesis • Homeostasis	CRITICAL
• Homeostasis	**AP.1.3:** Explore the homeostatic range to sustaining human life, the principal mechanism involved, and predict the consequences of what happens when homeostasis is not maintained.	• Explore the homeostatic range to sustaining human life. • Explore the principal mechanism involved. • Predict the consequences of what happens when homeostasis is not maintained.	• At the Clinic Questions	• Negative feedback • Positive feedback	CRITICAL
• Protein Synthesis	**AP.1.4:** Introduce the basic step and control mechanisms of protein synthesis.	• Introduce the basic step and control mechanisms of protein synthesis.	• Protein Synthesis Worksheet • KNEX Lab	• Transcription • Translation • Codon • RNA	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Protein Folding	**AP.1.5:** Explore the vital ways that proteins contribute to the structure, metabolism, and defense of the body, as well as, the importance of shape to their function.	• Explore the vital ways that proteins contribute to the structure, metabolism, and defense of the body. • Explore the importance of shape to their function.			IMPORTANT
TISSUE AND ORGANS					
Levels of Organization in the Human Body: Tissue and Organ • Tissue Types	**AP.2.1:** Analyze how each hierarchical level of life contributes to complexity of anatomy and physiological functions (e.g. cells, tissues, etc). Investigate the relationships among various tissue types as well as the molecular and cellular composition of these tissues.	• Analyze how each hierarchical level of life contributes to complexity of anatomy and physiological functions (e.g. cells, tissues, etc). • Investigate the relationships among various tissue types. • Investigate the molecular and cellular composition of various tissues.	• Tissue Worksheet • Tissue POGIL • Tissue Quiz	• Connective • Epithelium • Muscle • Nervous • Voluntary • Involuntary • Striated	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Tissue Structure	**AP.2.2:** Investigate and be able to describe the histological structural and functional characteristics of the four basic tissue types.	• Investigate the histological structural of the four basic tissue types. • Describe the histological structural of the four basic tissue types. • Describe the functional characteristics of the four basic tissue types.	• Tissue Lab	• Pseudostratified • Squamous • Cuboidal • Columnar • Transitional • Stratified • Simple • Adipose • Areolar • Dense Fibrous • Bone • Cartilage • Blood • Axon • Dendrite	CRITICAL
• Body Cavities and Organs	**AP.2.3:** Identify the body cavities, their membranes, and the organs within each cavity. Investigate the major organ systems and describe their basic functional importance.	• Identify the body cavities, their membranes, and the organs within each cavity. • Investigate the major organ systems and describe their basic functional importance.	• Sorting Activity • Goldfish Lab • Ulcer Case Study	• Ventral • Dorsal • Cranial • Spinal • Thoracic • Abdominopelvic	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Body Directions • Body Regions • Planes	**AP.2.4:** Identify anatomical terms (including body direction, regions, planes) on a diagram, model, or through dissection.	• Identify anatomical terms (including body direction, regions, planes) on a diagram, model, or through dissection.	• Bikini Bottom Terms Worksheet • Poster Project • Playdoh Dissection	• Sagittal • Coronal • Transverse • Superior • Inferior • Anterior • Posterior • Medial • Lateral • Proximal • Distal • Prone • Supine	CRITICAL
INTEGUMENTARY SYSTEM					
Movement and Support in the Human Body: The Integumentary System • Structure of Skin • Function of Integumentary System	**AP.3.1:** Analyze the structural characteristics and functional importance of the integumentary system to maintaining homeostasis of the body.	• Analyze the structural characteristics of the integumentary system. • Analyze the functional importance of the integumentary system to maintaining homeostasis of the body.	• Skin Colorsheet • Skin Review • Integumentary System Test		CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Injuries and Disorders	**AP.3.2:** Investigate the injuries, diseases, and causes associated with the integumentary system and evaluate the consequences.	• Investigate the injuries, diseases, and causes associated with the integumentary system. • Evaluate the consequences of the injuries and diseases of the integumentary system.	• Grossology Reading Assignment • At the Clinic Questions • Skin Lab	• Athlete's foot • Impetigo • Decubitus Ulcers • Dermatitis • Psoriasis • Eczema • Squamous Cell Carcinoma • Basal Cell Carcinoma • Melanoma	CRITICAL
SKELETAL SYSTEM					
Movement and Support in the Human Body: The Skeletal System • Types of Bone • Bone Growth - Compact - Spongy	**AP.4.1:** Develop a model to illustrate the structure, development, growth, and function of compact and spongy bone.	• Develop a model to illustrate the structure, development, growth, and function of compact and spongy bone.	• Bones Colorsheet • Bone Lab • Appendicular Worksheet • Axial Worksheet • Skeletal System Test	• Compact Bone • Spongy Bone • Osteocyte • Osteon • Trabecullae • Hematopoiesis • Appendicular • Axial	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Characteristics of Long Bone • Individual Bone Identification	**AP.4.2:** Evaluate the general macroscopic characteristics of a typical long bone, then locate and identify individual bones and bone features.	• Evaluate the general macroscopic characteristics of a typical long bone • Locate and identify individual bones and bone features.	• Bone Structure Worksheet • Bone Identification Quiz	• Canalaculi • Lacuna • Haversian Canal • Periosteum • Epiphysis • Diaphysis • Lamella • Medullary Cavity • Endosteum • Red Marrow • Yellow Marrow • Carpal • Cervical • Clavical • Femur • Fibula • Frontal • Humerus • Ilium • Ishium • Lumbar • Mandible • Maxilla • Metecarpals • Metetarsals • Nassal • Occipital • Patella • Phalanges	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
				• Radius • Sacrum • Scapula • Sphenoid • Sternum • Tarsals • Temporal • Thoracic • Tibia • Ulna • Xyphoid Process • Zygomatic	
• Types of Joints	**AP.4.3:** Identify and describe the structure of the major types of joints and how these structural components influence functional mobility and stability.	• Identify the structure of the major types of joints. • Describe how these structural components influence functional mobility and stability.		• Amphiarthroses • Diarthroses • Synarthroses • Ball and Socket • Condyloid • Gliding • Hinge • Saddle • Pivot • Suture • Notch • Process • Crest • Epicondyle • Tuberosity	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
KEY IDEAS AND TEXTUAL SUPPORT					
• **Extract and construct meaning from science and technical texts using a variety of comprehension skills**	**11-12.LST.2.2:** Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.	• Determine the central ideas or conclusions of a text. • Summarize complex concepts, processes or information presented in a text.			CRITICAL
	11-12.LST.2.3: Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.	• Follow a complex multistep procedure when carrying out experiments or performing technical tasks. • Analyze the specific results of experiment based on explanation in text.			CRITICAL

GRADE LEVEL: 10-12 **SUBJECT: Anatomy and Physiology** **DATE: 2017-2018**

MONTH/GRADING PERIOD: Q2 **MASTER 5-11-18**

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
SKELETAL SYSTEM					
Movement and Support in the Human Body: The Skeletal System • Types of Bone • Bone Growth	**AP.4.1:** Develop a model to illustrate the structure, development, growth, and function of compact and spongy bone.	• Develop a model to illustrate the structure, development, growth, and function of compact and spongy bone.	• Bones Colorsheet • Bone Lab • Appendicular Worksheet • Axial Worksheet • Skeletal System Test	• Compact Bone • Spongy Bone • Osteocyte • Osteon • Trabecullae • Hematopoiesis • Appendicular • Axial	CRITICAL
• Characteristics of Long Bone • Individual Bone Identification	**AP.4.2:** Evaluate the general macroscopic characteristics of a typical long bone, then locate and identify individual bones and bone features.	• Evaluate the general macroscopic characteristics of a typical long bone. • Locate and identify individual bones and bone features.	• Bone Structure Worksheet • Bone Identification Quiz	• Canalaculi • Lacuna • Haversian Canal • Periosteum • Epiphysis • Diaphysis • Lamella • Medullary Cavity • Endosteum • Red Marrow • Yellow Marrow • Carpal • Cervical • Clavical • Femur • Fibula	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
				• Frontal • Humerus • Ilium • Ishium • Lumbar • Mandible • Maxilla • Metecarpals • Metetarsals • Nassal • Occipital • Patella • Phalanges • Radius • Sacrum • Scapula • Sphenoid • Sternum • Tarsals • Temporal • Thoracic • Tibia • Ulna • Xyphoid Process • Zygomatic	

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Types of Joints	**AP.4.3:** Identify and describe the structure of the major types of joints and how these structural components influence functional mobility and stability.	• Identify the structure of the major types of joints. • Describe how these structural components influence functional mobility and stability.		• Amphiarthroses • Diarthroses • Synarthroses • Ball and Socket • Condyloid • Gliding • Hinge • Saddle • Pivot • Suture • Notch • Process • Crest • Epicondyle • Tuberosity	CRITICAL
MUSCULAR SYSTEM					
Movement and Support in the Human Body: The Muscular System • Muscle	**AP.5.1:** Compare and contrast the structural and functional similarities and differences between skeletal, cardiac, and smooth muscle.	• Compare and contrast the structural similarities and differences between skeletal, cardiac, and smooth muscle. • Compare and contrast the functional similarities and differences between skeletal, cardiac, and smooth muscle.	• Tissue Lab	• Striated • Voluntary • Involuntary	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Muscle Contraction	**AP.5.2:** Investigate the molecular components of skeletal muscle fiber and how they function to bring about contraction and relaxation.	• Investigate the molecular components of skeletal muscle fiber. • Investigate how they function to bring about contraction and relaxation.	• Tissue POGIL • Muscle Anatomy Coloring Sheet • Muscular System Review • Muscular System Test	• Endomysium • Perimysium • Epimysium • Fasicles • Twitch • Sarcomere • Myosin • Actin • Sarcolemma	CRITICAL
• Sliding Filament Model	**AP.5.3:** Explain the molecular processes involved in the sliding filament model and biochemical mechanisms that provide energy for muscle contraction and relaxation.	• Explain the molecular processes involved in the sliding filament model. • Explain the biochemical mechanisms that provide energy for muscle contraction and relaxation.		• Acetylcholine • Sarcoplasmic Reticulum • Neuromuscular Junction • Crossbridge • Tetanus • Aerobic • Anaerobic • Fatigue	IMPORTANT
• Neuromuscular Junction	**AP.5.4:** Describe how a neuromuscular junction functions and investigate how motor units influence the force and velocity of muscle contraction.	• Describe how a neuromuscular junction functions. • Investigate how motor units influence the force and velocity of muscle contraction.			IMPORTANT

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Major Muscles	**AP.5.5:** Identify the major muscles on a diagram, model, or through dissection.	• Identify the major muscles on a diagram, model. • Identify the major muscles through dissection.	• Muscle ID Worksheet • Muscle ID 2 Worksheet	• Trapezius • Deltoid • Triceps • Biceps • Rectus Femoris • Vastus Lateralis • Vastus Medialis • Pectoralis • Intercostals • Rectus Abdominis • External Oblique • Transversus Abdominis • Sartorius • Gastrocnemius • Gluteus Medius • Gluteus Maximus • Latissimus Dorsi • Masseter	CRITICAL
• Muscle Contractions	**AP.5.6:** Distinguish between isotonic and isometric contractions of skeletal muscle. Examine muscular hypertrophy and atrophy and discuss causes of these processes.	• Distinguish between isotonic and isometric contractions of skeletal muscle. • Examine muscular hypertrophy and atrophy. • Discuss causes of these processes.	• Muscle Action Lab • Muscle Fatigue Lab	• Isotonic • Isometric • Hypertrophy • Atrophy • Abduction • Adduction • Extension • Flexion	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
NERVOUS SYSTEM					
Integration and Coordination in the Human Body: The Nervous System • Structure of Nervous System	**AP.6.1:** Develop a model that illustrates the structural components and functional subdivisions of the nervous system.	• Develop a model that illustrates the structural components of the nervous system. • Develop a model that illustrates the functional subdivisions of the nervous system.	• Nerves and Action Potential Worksheet • Nervous System Review • Nervous System Test	• Central Nervous System • Peripheral Nervous System • Somatic • Autonomic • Motor • Peripheral	CRITICAL
• Types of Neurons • Structure of Neurons	**AP.6.2:** Describe and diagram the structures of the various types of neurons, their supporting neuroglial cells, and investigate their basic functions.	• Describe and diagram the structures of the various types of neurons. • Describe and diagram the structures of the various types of neuroglial cells	• Design a Neuron Project • Brain Worksheet	• Glial Cells • Schwann Cells • Neurons • Cell Body • Dendrites • Axons • Synapse • Myelin Sheath	CRITICAL
• Divisions of Nervous System	**AP.6.3:** Compare and contrast the actions, origins, and pathways of nerve fibers in the parasympathetic and sympathetic divisions of the autonomic nervous system and their associated neurotransmitters.	• Compare and contrast the actions, origins, and pathways of nerve fibers in the parasympathetic and sympathetic divisions of the autonomic nervous system and their associated neurotransmitters	• At the Clinic Questions	• Parasympathetic • Sympathetic	IMPORTANT

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Neuron Communication	**AP.6.4:** Identify and model how action potentials are generated, the ions and channel protein involved, and the basic structural and functional aspects which allow for synaptic connection.	• Identify and model how action potentials are generated. • Identify the ions and channel proteins involved in action potentials. • Model the basic structural and functional aspects which allow for synaptic connection.	• Nerve Cell Communication Lab • Bang to the Head Lab	• Action Potential • Neurotransmitters • Depolarization • Parasympathetic • Sympathetic	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
KEY IDEAS AND TEXTUAL SUPPORT					
• **Extract and Construct Meaning From Science and Technical Texts Using a Variety of Comprehension Skills**	**11-12.LST.2.2:** Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.	• Determine the central ideas or conclusions of a text. • Summarize complex concepts, processes or information presented in a text by paraphrasing them in simpler but still accurate terms.			CRITICAL
	11-12.LST.2.3: Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.	• Follow a complex multistep procedure when carrying out experiments or performing technical tasks. • Analyze the specific results of experiment based on explanation in text.			CRITICAL

GRADE LEVEL: 10-12 **SUBJECT: ANATOMY** **DATE: 2017-2018**

MONTH/GRADING PERIOD: QUARTER 3 **MASTER 2-16-18**

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
SOMATIC AND SPECIAL SENSES					
Integration and Coordination in the Human Body: Somatic and Special Senses • 5 Senses • Chemical Senses	**AP.7.1:** Distinguish between somatic senses and special senses, the prominent sensory receptor types, and their functional operation.	• Distinguish between somatic and special senses. • Distinguish between the prominent sensory receptor types and their functional operation.	• Taste and Smell Lab • Test (Sight, Sound, Taste, Hearing, Equilibrium)	• Mechanoreceptors • Proprioceptors • Chemoreceptors • Photoreceptors • Somatic • Gustatory • Olfactory	CRITICAL
• Eye Parts • Eye Functions	**AP.7.2:** Explore the anatomy of the eye, its functional layers, the fovea and its function. Investigate how the eye accommodates for near and distance vision as well as how the eye adapts to changes in light.	• Explore the anatomy of the eye, its layers and the fovea. • Explore the function of the eye. • Investigate how the eye accommodates for near and distance vision. • Investigate how the eye adapts to changes in light.	• Eye Worksheet • Cow Eye Dissection Lab • Eye Model Identification	• Conjunctiva • Sclera • Fovea • Cornea • Choroid • Ciliary Zonule • Iris • Pupil • Lens • Aqueous Humor • Vitreous Humor • Optic Nerve • Retina • Rods • Cones	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Ear Parts • Ear Functions	**AP.7.3:** Investigate the structural components and function of the ear, and model how equilibrium and sound are detected through the ear.	• Investigate the structural components of the ear. • Investigate the functions of the ear. • Model how the equilibrium and sound are detected through the ear.	• Worksheet • Ear Model Identification	• Pinna • Ceruminous Glands • External Auditory Meatus • Tympanic Membrane • Ossicles • Malleus • Incus • Stapes • Cochlea • Vestibular • Semicircular Canals • Static Equilibrium • Dynamic Equilibrium	CRITICAL
ENDOCRINE SYSTEM					
Integration and Coordination in the Human Body: The Endocrine System • Organs of Endocrine System • Functions or Hormones	**AP.8.1:** Investigate the structure and function of the endocrine system and develop models showing how changes in prominent hormone levels impact homeostasis throughout the body systems.	• Investigate the structure and function of the endocrine system. • Develop models showing how changes in prominent hormone levels impact homeostasis throughout the body systems.	• Sorting Activity • Mind Map • Hormone POGIL • Endocrine System Test	• Anterior Pituitary • Posterior Pituitary • Thyroid • Parathyroid • Pancreas • Adrenal glands • Cortex • Medulla • Thymus • Ovaries • Testes • Placenta • Growth Hormone	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
				• Prolactin • Follicle Stimulating Hormone • Luteinizing Hormone • Oxytocin • Anti-diuretic Hormone • T3/T4 • Parathyroid Hormone • Insulin • Glucagon • Glucocorticoid • Mineralocorticoid • Aldosterone • Epinephrine • Melatonin • Thymosin • Estrogen • Progesterone • Testosterone • HCG • Goiter • Grave's Disease • Diabetes • Addison's Disease	

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Types of Glands	**AP.8.2:** Discuss the structural and functional differences between an endocrine gland and an exocrine gland.	• Discuss the structural and functional differences between an endocrine gland and an exocrine gland.	• Essay Question	• Endocrine • Exocrine • Gland	CRITICAL
• Types of Hormones	**AP.8.3:** Distinguish between amino acid, peptide, and lipid based hormones and describe how they differ in bringing about changes in cellular activity.	• Distinguish between amino acid, peptide, and lipid based hormones. • Describe how hormones differ in bringing about changes in cellular activity.		• Amino Acid • Peptide • Lipid • Steroid	IMPORTANT
• Function of Hormones	**AP.8.4:** Investigate the hormones of the hypothalamus-pituitary complex, the function of these hormones in controlling the thyroid, gonads, and adrenal cortex and the feedback signals that control them. Evaluate how the HP complex, the sympathetic nervous system, and the adrenal medulla are influenced by stress.	• Investigate the hormones of the hypothalamus-pituitary complex. • Investigate the function of the hormones in controlling the thyroid, gonads and adrenal cortex. • Evaluate how the HP complex, sympathetic nervous system and the adrenal medulla are influenced by stress.	• Endocrine Game	• Negative Feedback • Positive Feedback	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Hormones that Regulate Blood Sugar	**AP.8.5:** Investigate the endocrine and exocrine functions of the pancreas and its involvement in digestion and blood sugar regulation.	• Investigate the endocrine and exocrine functions of the pancreas. • Discuss the pancreas' involvement in blood sugar regulation.	• Diagnosing Diabetes Lab	• Islets of Langerhans	CRITICAL
BLOOD					
Transport in the Human Body: The Blood • Maintaining Homeostasis in the Blood	**AP.9.1:** Analyze and model the functions of blood, which are fundamental to maintaining homeostasis; including hemostasis; nutrient, gas, and waste exchange; and inflammatory response.	• Analyze and model the functions of blood, which are fundamental to maintaining hemostasis. • Analyze and model nutrient, gas and waste exchange. • Analyze and model inflammatory response.	• Blood Disorder Case Studies	• Hemostasis • Hematopoiesis • Thrombocytes • Anemia • Leukemia • Sickle Cell	CRITICAL
• Parts of Blood • Types of Blood Cells	**AP.9.2:** Evaluate the composition and functions of whole blood, plasma, and the regulation and production of blood cells.	• Evaluate the composition of whole blood. • Evaluate the functions of blood. • Evaluate the composition of plasma. • Evaluate the function of plasma. • Evaluate the regulation of blood cells.	• Cells Coloring Worksheet • Sorting Activity • Blood Test	• Erythrocyte • Leukocyte • Neutrophil • Eosinophils • Basophils • Granulocyte • Agranulocyte • Diapedesis • Chemotaxis	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Blood Types	**AP.9.3:** Investigate the ABO blood types, antigens and antibodies, and their significance in blood transfusion.	• Investigate the ABO blood types. • Investigate antigens and antibodies. • Investigate the significance of antigens and antibodies in blood transfusion.	• Blood Type POGIL • Blood Type Lab	• Antigen • Antibody • Donor • Recipient • Erythroblastosis Fetalis	CRITICAL
CARDIVASCULAR SYSTEM					
Transport in the Human Body: The Cardiovascular System • Functions of the Heart	**AP.10.1:** Investigate the primary structures of the cardiovascular system and explore their functional importance to maintaining homeostasis.	• Investigate the primary structures of the cardiovascular system. • Explore the functional importance of the structures of the cardiovascular system to maintaining homeostasis.	• Heart Worksheet • Cardiovascular System Test	• Myocardium • Striated • Apex • Septum • Atrium • Ventricle • Coronary Artery • Pulmonary Vein • Vena Cava • Capillaries • Thrombosis • Arteriosclerosis • Angina • Aorta	CRITICAL
• The Cardiac Cycle	**AP.10.2:** Investigate the stages, control, and regulation of the cardiac cycle.	• Investigate the stages of the cardiac cycle.	• Cardiac Cycle POGIL	• Bicuspid • Tricuspid • Semilunar Valves	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Blood Vessel Types	**AP.10.3:** Compare and contrast the structural and functional difference between the different blood vessel types. Model what vasoconstriction and vasodilation are and how they impact homeostasis.	• Compare and contrast the structural difference between blood vessels. • Compare and contrast the functional difference between blood vessels.			CRITICAL
• Model of Heart	**AP.10.4:** Use a diagram and/or a model to illustrate the external and internal structures and layers of the heart, the vessels entering and leaving the heart, and the one-way blood flow through the heart.	• Use a diagram and model to illustrate the structures and layers of the heart. Use a diagram and model to illustrate the one-way blood flow through the heart.	• Heart Model • Heart Dissection	• Endocardium • Pericardium	CRITICAL
• Blood Pressure	**AP.10.5:** Discuss the regulation of blood pressure. Analyze the effect of abnormal blood pressure on long-term health.	• Discuss the regulation of blood pressure. • Analyze the effect of abnormal blood pressure on long-term health.	• Blood Pressure Lab • Diagnosis Worksheet	• Hypertension • Hypotension • Systemic • Diastolic • Sphygmometer • Stethoscope	IMPORTANT
• Blood Volume	**AP.10.6:** Investigate how the cardiovascular system and other body systems respond to changes in blood volume as well as changes in physical activity, which allow the body to maintain homeostasis.	• Investigate how the cardiovascular system and other body systems respond to changes in blood volume. • Investigate how the cardiovascular system responds to physical activity.			IMPORTANT

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
KEY IDEAS AND TEXTUAL SUPPORT					
Extract and Construct Meaning from Science and Technical Texts Using a Variety of Comprehension Skills	**11-12.LST.2.2:** Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.	• Determine the central ideas or conclusions of a text. • Summarize complex concepts, processes or information presented in a text.			CRITICAL
	11-12.LST.2.3: Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.	• Follow a complex multistep procedure when carrying out experiments or performing technical tasks. • Analyze the specific results of experiment based on explanation in text.			CRITICAL

GRADE LEVEL: **10-12** **SUBJECT:** **Anatomy and Physiology** **DATE:** **2017-2018**

MONTH/GRADING PERIOD: Q4 **MASTER 2-15-18**

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
IMMUNE SYSTEM					
Transport in the Human Body: The Lymphatic System and Immune Mechanisms • Parts of the Immune System	**AP.11.1** Identify the primary structural components of the lymphatic system and their functions. Analyze the relationship with activities of bone marrow, thymus gland, and overall importance in maintaining homeostasis.	• Identify the primary structural components of the lymphatic system and their functions. • Analyze the relationship with activities of bone marrow, thymus gland, and maintaining homeostasis.	• Labeling Diagram • ELISA lab	• Pathogen • Bacteria • Virus • Tonsils • Thymus • Bone Marrow • Spleen • Lymph Nodes • Antibodies	CRITICAL
• Type of Immunity • Lines of Defense • Inflammatory Response	**AP.11.2** Investigate the difference between innate and acquired immunity. Examine how cellular and non-cellular components work collectively to defend the body against foreign pathogens and how they contribute to maintaining homeostasis.	• Investigate the difference between innate and acquired immunity. • Examine how cellular and non-cellular components work collectively to defend body against pathogens. • Examine how immunity components contribute to maintaining homeostasis.	• Non-specific Immunity Worksheet • Specific Immunity Worksheet • Interactive Webquest • Analogy Project • Lines of Defense Review Map	• Innate • Acquired • Symbiotic • Phagocytes • Natural Killer Cells • Inflammation • Cell Mediated • Humoral • Granulocytes • Neutrophils • Basophils • Eosinophils • Macrophage • Lymphocytes • Monocytes	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
DIGESTIVE SYSTEM					
Absorption and Excretion in the Human Body: The Digestive System • Organs of Digestive System	**AP.12.1:** Identify and locate major and accessory organs of the digestive system and investigate their physiological functions.	• Identify major and accessory organs of the digestive system. • Locate major and accessory organs of the digestive system. • Investigate the organs physiological functions.	• Digestive System Coloring Worksheet • Digestive System Quiz • Digestive System Lab • Digestive System Test	• Gall Bladder • Pancreas • Liver • Peristalsis • Alimentary Canal • Small Intestine • Large Instestine • Transverse Colon • Ascending Colon • Descending Colon • Sigmoid Colon • Appendix • Rectum • Sphincter • Duodenum • Jejunum • Ileum	CRITICAL
• Enzymes of Digestive System	**AP.12.2**: Investigate the enzymes of the gastrointestinal tract and accessory organs in relation to the processing, digesting, and absorbing of the three major biomolecules.	• Investigate the enzymes of the gastrointestinal tract and accessory organs in relation to the processing, digesting and absorbing of the three major biomolecules.	• Digestive System Coloring 2 Worksheet • Digestive System Webquest	• Proteins • Carbohydrates • Lipids • Amylase • Trypsin	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Effect of pH	**AP.12.3** Explain the difference between metabolic and respiratory acidosis and alkalosis.	• Explain the difference between metabolic and respiratory acidosis and alkalosis.		• Acidic • Alkaline	IMPORTANT
RESPIRATORY SYSTEM					
Absorption and Excretion in the Human Body: The Respiratory System • Organs of Respiratory System	**AP.13.1:** Identify and locate major organs of the respiratory system and discuss their functions.	• Identify the major organs of the respiratory system. • Discuss the functions of the respiratory system.	• Respiratory Worksheet • Respiratory Coloring • Respiratory Review • Respiratory Test	• Bronchi • Bronchioles • Conchae • Larynx • Lung • Nasal Cavity • Pharynx • Sinus • Trachea • Diaphragm • Intercostal Muscles • Epiglottis	CRITICAL
• Inspiration and Expiration Processes	**AP.13.2:** Investigate the anatomical structures and physiological processes involved in inspiration & expiration.	• Investigate the anatomical structures in inspiration & expiration. • Investigate the physiological processes in inspiration & expiration.	• Lung Capacity Lab	• Inspiration • Expiration • Tidal Volume • Vital Capacity • Reserve Volume • Spirometer • Pneumonia • Emphysema • Hypoxia • COPD	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Partial Pressure Gradients	**AP.13.3**: Investigate how percentages and partial pressure gradients of oxygen and carbon dioxide impact net gas exchange.	• Investigate how percentages and partial pressure gradients of oxygen and carbon dioxide impact net gas exchange.		• Partial Pressure Gradient • Net Gas Exchange • Pulmonary Circuit • Systematic Circuit	IMPORTANT
• Homeostasis in Respiratory System	**AP.13.4:** Describe how the body monitors changes in blood pH and carbon dioxide using specialized receptors and how the respiratory system adjusts in order to maintain homeostasis.	• Describe how the body monitors changes in blood pH and carbon dioxide. • Describe how the respiratory system adjusts in order to maintain homeostasis.			IMPORTANT
THE URINARY SYSTEM					
Absorption and Excretion in the Human Body: The Urinary System • Organs of the Urinary System	**AP.14.1** Identify and locate major organs of the urinary system and discuss their functions.	• Identify and locate the major organs of the urinary system. • Discuss the functions of the major organs of the urinary system.	• Urinary System Worksheet • Urinary System Test	• Kidney • Bladder • Urethra • Ureter • Nephron • Renal Cortex • Renal Medulla	CRITICAL
• Kidney Functions	**AP.14.2** Understand the function of the kidneys in relation to homeostatic control of bodily fluids, blood pressure, and erythrocyte production.	• Understand the function of the kidneys in relation to homeostatic control of bodily fluids, blood pressure and erythrocyte production.	• Case Studies	• Urea • Waste Excretion • Water Balancing • Erythropoietin	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Nephron Structural Unit	**AP.14.3** Develop a model of the nephron which explores its structural components and the functional processes of filtration, secretion, and reabsorption, which are essential to maintaining homeostasis.	• Develop a model of the nephron which explores its structural components and the functional process of filtration, secretion and reabsorption, which are essential to maintaining homeostasis.		• Renal Tubule • Renal Corpuscle • Proximal Convoluted Tubule (PCT) • Distal Convoluted Tubule (DCT) • Collecting Duct • Nephron Loop	IMPORTANT
	AP.14.4 Explain the neural basis of micturition including the function of the sphincters associated with the male and female urethra.	• Explain the neural basis of micturition including the function of the sphincters associated with the male and female urethra.		• Micturition • Cystitis • Pyelitis • Urethritis	IMPORTANT
• Water Absorption and Excretion	**AP.14.5** Investigate how the kidneys respond to excess water intake and to dehydration, as well as the role of antidiuretic hormone (ADH) and sodium in the regulation of water absorption and excretion.	• Investigate how the kidneys respond to excess water intake and dehydration. • Investigate the role of antidiuretic hormone (ADH) and sodium in the regulation of water absorption and excretion.	• Kidney Dissection Lab	• Antidiuretic Hormone (ADH) • Diabetes Insipidus • Osmoreceptors • Aldosterone	IMPORTANT

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
REPRODUCTIVE SYSTEM					
Life Cycle in the Human Body: The Reproductive System • Organs of the Reproductive System	**AP.15.1** Identify and locate major and accessory organs of the female and male reproductive systems and discuss their functions.	• Identify and locate major and accessory organs of the female and male reproductive systems. • Discuss the functions of the female and male reproductive system organs.	• Reproductive System Worksheet • Model Organs Lab Activity • Reproductive System Test	• Gonads • Ovary • Testes • Epididymus • Ductus Deferens • Seminiferous Tubule • Lobule • Septum • Seminal Vesicles • Prostate • Follicle • Fallopian Tubes • Uterus • Cervix • Vagina	CRITICAL
• Hormones of the Reproductive System	**AP.15.2** Discuss the role of hormones in the reproductive system.	• Discuss the role of hormones in the reproductive system.	• Cycle POGIL • Case Studies	• Hypothalamus • Anterior Pituitary • Follicle Stimulating Hormone (FSH) • Luteinizing Hormone (LH) • Testosterone • Spermatogenesis • Oogenesis	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
• Uterine and Ovarian Cycles	**AP.15.3** Create a model showing how fluctuating hormonal changes associated with the reproductive system impact both the uterine and ovarian cycles.	• Create a model showing how fluctuating hormonal changes associated with the reproductive system impact both the uterine and ovarian cycles.		• Estrogen • Progesterone	CRITICAL
• Spermatozoa Path	**AP.15.4** Describe how spermatozoa move through the female reproductive tract and describe the process of fertilization.	• Describe how spermatozoa move through the female reproductive tract. • Describe the process of fertilization.			CRITICAL
• Embryonic Development	**AP.15.5** Investigate and develop a model of early development which traces the changes of a fertilized cell (zygote) through the blastocyst level of development and the then gastrulation process resulting in the rise of the three primary germ layers.	• Investigate and develop a model of early development, which traces the changes of a zygote through the blastocyst level of development. • Investigate the gastrulation process resulting in the rise of the three primary germ layers.	• Pregnancy Worksheet	• Fertilization • Zygote • Fetus • Blastocyst • Human Chorionic Gonadotropin (hCG) • Ectoderm • Endoderm • Mesoderm	CRITICAL

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCAB	PRIORITY
KEY IDEAS AND TEXTUAL SUPPORT					
• **Extract and construct meaning from science and technical texts using a variety of comprehension skills**	**11-12.LST.2.2:** Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.	• Determine the central ideas or conclusions of a text. • Summarize complex concepts, processes or information presented in a text.			CRITICAL
	11-12.LST.2.3: Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.	• Follow a complex multistep procedure when carrying out experiments or performing technical tasks. • Analyze the specific results of experiment based on explanation in text.			CRITICAL