Gulfport School District
PACING GUIDE

HUMAN ANATOMY & PHYSIOLOGY

Content Strands: Inquiry (I) and Life Sciences (L)		
QTR	**Competency/Objective**	
	Apply inquiry-based and problem-solving processes and skills to scientific investigations. (I)	
1.1 to 2.2	1a	Use current technologies such as CD-ROM, DVD, Internet, and on-line data search to explore current research related to a specific topic. (DOK 3)
1.1 to 2.2	1b	Clarify research questions and design laboratory investigations. (DOK 3)
1.1 to 2.2	1c	Demonstrate the use of scientific inquiry and methods to formulate, conduct, and evaluate laboratory investigations (e.g., hypotheses, experimental design, observations, data analyses, interpretations, theory development). (DOK 3)
1.1 to 2.2	1d	Organize data to construct graphs (e.g., plotting points, labeling x- and y-axis, and creating appropriate titles and legends for circle, bar, and line graphs) to draw conclusions and make inferences. (DOK 3)
1.1 to 2.2	1e	Evaluate procedures, data, and conclusions to critique the scientific validity of research. (DOK 3)
1.1 to 2.2	1f	Formulate and revise scientific explanations and models using logic and evidence (data analysis). (DOK 3)
1.1 to 2.2	1g	Collect, analyze, and draw conclusions from data to create a formal presentation using available technology (e.g., computers, calculators, SmartBoard, CBL's, etc.) (DOK 3)
	Demonstrate an understanding of the basic organization of the body. (L)	
1.1	2a	Apply and relate appropriate anatomical terms to the body in anatomical position. (DOK 1) • Relationship of body parts • Major cavities and essential organs
1.1	2b	Explain how specific mechanisms (e.g., feedback, transport, pH, temperature regulation, etc.) maintain homeostasis. (DOK 1)
1.1	2c	Describe the relationships and interactions of biochemical composition of the human body to body functions. (DOK 2) • Compounds and elements necessary for maintaining life • Major groups of organic substances in the human body • Major types of chemical reactions employed within the organ systems • Effects of external factors (e.g., heat, pH, etc.) on enzymatic reactions
1.1	2d	Categorize the relationship of the cell and its functions to the more complex levels of organization within the body. (DOK 2) • Anabolic and catabolic reactions within a human cell • Four major categories of tissues and their location, structure, and function
	Demonstrate an understanding of the structure, functions, and relationships of the body systems. (L)	
1.2	3a	Identify structures and explain functions of the components of the integumentary system. (DOK 1)

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	Demonstrate an understanding of the structure, functions, and relationships of the body systems. (L)	
1.2	3b	Research and distinguish among common integumentary system disorders in terms of origin, manifestation, and treatments. (DOK 1)
1.2	3c	Compare the structure and functions of the skeletal system with its relationship to movement. (DOK 1) • Structures which comprise bone • Difference between endochondrial and intramembranous ossification • Major bones of the axial and appendicular skeleton, noting inherent differences between males and females • Types of joints and their movements
1.2	3d	Research and draw conclusions about changes in the skeletal system associated with disease, disorder, injury, age, and stress. (DOK 3)
1.2	3e	Compare the functions and structures of the muscular system with its relationship to movement. (DOK 1) • Major components and functions of skeletal muscle fiber • Major skeletal muscles and the process of contraction • Three types of muscles in the body
1.2	3f	Research and evaluate the impact of medical technology on muscle physiology and disease. (DOK 3)
2.1	3g	Relate the components of the nervous system to the senses and the functions of the human body systems. (DOK 1) • Four types of neurological cells and the functions of each • Conduction of a nerve impulse • Structures and functions of the brain and spinal cord • Divisions of the nervous system (e.g., central nervous system, peripheral nervous system, sympathetic and parasympathetic, etc.)
2.1	3h	Describe functions of the various sense organs and identify environmental factors that affect their responses. (DOK 1)
2.1	3i	Distinguish the location, structure, and functions of the endocrine glands. (DOK 1) • Major endocrine glands • Function of each endocrine gland and the various hormones they generated by each • Negative feedback mechanisms that regulate hormonal secretions

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2.1	3j	Research common disorders or diseases of the endocrine system and assess the unique problems associated with diagnoses and treatments. (DOK 3)
2.2	3k	Identify and discuss the structures and functions of the organs of the digestive system and discuss their relationships to the interaction among the human body systems. (DOK 2) • Major organs of the digestive system (e.g., alimentary canal and accessory structures) • Roles of organs in the mechanical and chemical digestion of food and nutrient absorption • Contents of the alimentary canal and how they are mixed and moved • Enzymes and gland secretions as related to the absorption of digestion products
2.2	3l	Research common disorders or diseases of the digestive system and identify a diagnosis, based upon a given set of symptoms, for a specific disorder. (DOK 3)
2.2	3m	Describe the primary functions of the respiratory organs and the relationships between structure and function. (DOK 1) • Breathing verses respiration • Gaseous exchange between air and blood and mechanisms of gaseous transport by the blood
2.2	3n	Research to describe various diseases commonly affecting normal respiratory function and assert environmental and social factors which may contribute to the incidence of disease. (DOK 2)
2.1	3o	Demonstrate an understanding of the structures and functions of the circulatory system and their role in maintaining homeostasis. (DOK 2) • Blood types and the four parts of blood in terms of morphology, function, and origin • Pulmonary and systemic circulation • Systolic and diastolic pressures in relationship to cardiovascular health
2.2	3p	Investigate and describe the social and economic impact of technological advances in medical treatment on cardiovascular disorders. (DOK 3)
2.2	3q	Describe and discuss the structures and functions of the lymphatic system and the relationships to the circulatory system and immunity. (DOK 1) • Major lymphatic organs and pathways • Functions of lymph nodes, lymphocytes, immunoglobulins, thymus, and spleen • Types of immunity and immune responses
2.2	3r	Research and describe common lymphatic disorders and present conclusions about the effectiveness of available treatment options. (DOK 3)
2.2	3s	Explain the role of the structures and functions of the urinary system as they relate to the formation, composition, and elimination of urine. (DOK 1)
2.2	3t	Research and describe the treatments of common urinary system disorders. (DOK 1)

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PACING GUIDE

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2.2	3u	Identify and discuss the locations, structures, and functions of the major components of the male and female reproductive systems. (DOK 1) • Role of hormones in maturation and reproduction • Development of a fetus
2.2	3v	Research common reproductive diseases and disorders and justify the need for continued research in the diagnosis and treatment of reproductive system diseases. (DOK 3)