



# Gulfport School District QUARTER 1.2 BLUEPRINT

## BIOLOGY I

Content Strands: Inquiry (I), Life Science (L), and Physical Science (P)		
QTR	Competency/Objective	
<b>Apply inquiry-based and problem-solving processes and skills to scientific investigations. (I), (L), and (P)</b>		
1-4 Tested 1.1 to 2.2	1b	Formulate questions that can be answered through research and experimental design. (DOK 3)
1-4 Tested 1.1 to 2.2	1c	Apply the components of scientific processes and methods in classroom and laboratory investigations (e.g., hypotheses, experimental design, observations, data analyses, interpretations, theory development). (DOK 2)
1-4 Tested 1.1 to 2.2	1d	Construct and analyze graphs (e.g., plotting points, labeling x-and y-axis, creating appropriate titles and legends for circle, bar, and line graphs). (DOK 2)
1-4 Tested 1.1 to 2.2	1e	Analyze procedures, data, and conclusions to determine the scientific validity of research. (DOK 3)
1-4 Tested 1.1 to 2.2	1f	Recognize and analyze alternative explanations for experimental results and to make predictions based on observations and prior knowledge. (DOK 3)
1-4 Tested 1.1 to 2.2	1g	Communicate and defend a scientific argument in oral, written, and graphic form. (DOK 3)
<b>Describe the biochemical basis of life and explain how energy flows within and between the living systems. (P)</b>		
1.2	2e	Examine the life processes to conclude the role enzymes play in regulating biochemical reactions. (DOK 2) <ul style="list-style-type: none"> <li>• Enzyme structure</li> <li>• Enzyme function, including enzyme-substrate specificity and factors that effect enzyme function (pH and temperature)</li> </ul>
1.2	2f	Describe the role of adenosine triphosphate (ATP) in making energy available to cells. (DOK 1) <ul style="list-style-type: none"> <li>• ATP structure</li> <li>• ATP function</li> </ul>
1.2	2g	Analyze and explain the biochemical process of photosynthesis and cellular respiration and draw conclusions about the roles of the reactant and products in each. (DOK 3) <ul style="list-style-type: none"> <li>• <i>Photosynthesis and respiration (reactants and products)</i></li> <li>• <i>Light-dependent reactions and light independent reactions in photosynthesis, including requirements and products of each</i></li> <li>• <i>Aerobic and anaerobic processes in cellular respiration, including products of each and energy differences</i></li> </ul>



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	<b>Analyze and explain the structures and function of the levels of biological organization. (L)</b>	
1.2	4a	Differentiate among plant and animal cells and eukaryotic and prokaryotic cells. (DOK 2) <ul style="list-style-type: none"> <li>• Functions of all major cell organelles and structures (e.g., nucleus, mitochondrion, rough ER, smooth ER, ribosomes, Golgi bodies, vesicles, lysosomes, vacuoles, microtubules, microfilaments, chloroplast, cytoskeleton, centrioles, nucleolus, chromosomes, nuclear membrane, cell wall, cell membrane [active and passive transport], cytosol)</li> <li>• Components of mobility (e.g., cilia, flagella, pseudopodia)</li> </ul>
1.2	4b	Differentiate between types of cellular reproduction. (DOK 1) <ul style="list-style-type: none"> <li>• Main events in the cell cycle and cell mitosis (including differences in plant and animal cell divisions)</li> <li>• Binary fission (e.g., budding, vegetative propagation, etc.)</li> <li>• Significance of meiosis in sexual reproduction</li> <li>• Significance of crossing over</li> </ul>
1.2	4c	Describe and differentiate among the organizational levels of organisms (e.g., cells, tissues, organs, systems, types of tissues.) (DOK 1)
1.2	4d	Explain and describe how plant structures (vascular and nonvascular) and cellular functions are related to the survival of plants (e.g., movement of materials, plant reproduction). (DOK 1)