

Unit Plan: MOLECULES TO ORGANISMS: STRUCTURE AND PROCESSES

Grade: 8TH

Subject: BIOLOGY

Term: 3

Thematic Concept: RESILIENCE	Universal EQ: “Why is resilience crucial for success?”	
Supporting Concept: EQUILIBRIUM	Content-Based EQ: “HOW DOES IMBALANCE AFFECT RESILIENCE?”	
Generalizations: Structure determines function/ Function determines structure; living organisms grow, develop and die; living organisms have an organized flow of matter and energy.		
Standard(s): HS-LS1- 1, 2, 3, 4, 5, 6, 7		
Unit Outcomes: The emphasis of this unit is on the use of models and investigations to gather evidence to support how organisms live and grow.		
Unit Description: This course focuses on how structure and processes allow organisms to grow from molecules in order to live.		
Conceptual Knowledge Students will understand: <ul style="list-style-type: none"> • Systems and interactions can be modeled using different scales • The direction and flow of energy and matter can impact a system • Energy is conserved • Characteristics (structure) determine function • Feedback’s impact on a system can be positive or negative 	Procedural Knowledge Students will be able to do: <ul style="list-style-type: none"> • How to implement safety procedures • Conduct an investigation to show that feedback mechanisms maintain homeostasis • Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy • Illustrate the hierarchical structural organization of multicellular organisms’ interacting systems with their specific functions • Demonstrate the role of mitosis and its 	Factual Knowledge Students will know: <ul style="list-style-type: none"> • Vocabulary • Photosynthesis and cellular respiration chemical equations • Laboratory safety procedures • Scientific method of inquiry • How to collect, record, and chart data

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	importance in producing and maintaining complex organisms	
Conceptual Formative Assessments: <ul style="list-style-type: none"> • Lessons and Activities 	Procedural Formative Assessments: <ul style="list-style-type: none"> • Lessons and Activities 	Factual Formative Assessments:
Conceptual Summative Assessments: <ul style="list-style-type: none"> • Organelle Book • Cell Analogy • Brownie Lab- Transcription and Translation • Diffusion and Osmosis Labs • Homeostasis Lab 	Procedural Summative Assessments: <ul style="list-style-type: none"> • Organelle Book • Cell Analogy • Brownie Lab- Transcription and Translation • Diffusion and Osmosis Labs • Homeostasis Lab 	Factual Summative Assessments: <ul style="list-style-type: none"> • Unit Exam
Affective Self-Regulatory Strategies: <ul style="list-style-type: none"> • Building confidence through collaboration 	Behavioral Self-Regulatory Strategies: <ul style="list-style-type: none"> • Science safety procedures • Scientific methods 	Cognitive Self-Regulatory Strategies: <ul style="list-style-type: none"> • Reflection on daily collaboration
Resources/Materials		

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