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Life Science Core Ideas																						
LS1	From Molecules to Organisms: Structures and Processes		✓		✓				✓								✓	✓	✓	✓	✓	
LS2	Ecosystems: Interactions, Energy, and Dynamics					✓	✓															✓
LS3	Heredity: Inheritance and Variation of Traits										✓	✓	✓									
LS4	Biological Evolution: Unity and Diversity											✓	✓	✓	✓	✓						
Structure and Function																						
LS1.A.1	Provide evidence that organisms (unicellular and multicellular) are made of cells and that a single cell must carry out all of the basic functions of life.							✓		✓												
LS1.A.2	Develop and use a model to describe the function of a cell as a whole and ways parts of the cells contribute to that function.								✓													
LS1.A.3	Develop an argument supported by evidence for how multicellular organisms are organized by varying levels of complexity; cells, tissue, organs, organ systems.		✓					✓											✓			
LS1.A.4	Present evidence that body systems interact to carry out key body functions, including providing nutrients and oxygen to cells, removing carbon dioxide and waste from cells and the body, controlling body motion/activity and coordination, and protecting the body.																		✓	✓		
Growth and Development of Organisms																						
LS1.B.1	Construct an explanation for how characteristic animal behaviors as well as specialized plant structures affect the probability of successful reproduction of animals and plants respectively.																✓	✓				
LS1.B.2	Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.																					
Organization for Matter and Energy Flow in Organisms																						
LS1.C.1	Construct a scientific explanation based on evidence for the role of photosynthesis and cellular respiration in the cycling of matter and flow of energy into and out of organisms.																✓					
Independent Relationships in Ecosystems																						
LS2.A.1	Analyze and interpret data to provide evidence for the effects of resource availability on individual organisms and populations of organisms in an ecosystem.				✓	✓																
LS2.A.2	Construct an explanation that predicts the patterns of interactions among and between the biotic and abiotic factors in a given ecosystem.					✓	✓															
Cycles of Matter and Energy																						
LS2.B.1	Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.					✓																
Ecosystem Dynamics, Functioning and Resilience																						
LS2.C.1	Construct an argument supported by empirical evidence that explains how changes to physical or biological components of an ecosystem affect populations					✓	✓															
LS2.C.2	Evaluate benefits and limitations of differing design solutions for maintaining an ecosystem					✓																

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Evidence of Common Ancestry and Diversity																						
LS4.A.1	Analyze and interpret evidence from the fossil record to infer patterns of environmental change resulting in extinction and changes to														✓							
Natural Selection																						
LS4.B.1	Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.												✓		✓							
LS4.B.2	Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.													✓								
Adaption																						
LS4.C.1	Interpret graphical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.													✓								
Defining and Delimiting Engineering Problems																						
ETS1.A.1	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.																✓					✓
Defining Possible Solutions																						
ETS1.B.1	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.																✓					✓
ETS1.B.2	Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.					✓											✓					✓
ETS1.B.3	Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.	✓															✓					✓

Science and Engineering Practices																						
Developing and Using Models		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Using Mathematics and Computational Thinking		✓	✓	✓	✓	✓		✓	✓		✓	✓			✓		✓	✓	✓	✓	✓	✓
Planning and Carrying Out Investigations		✓	✓	✓	✓	✓	✓	✓		✓		✓		✓	✓	✓		✓				✓
Asking Questions and Defining Problems		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Analyzing and Interpreting Data		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓				✓	✓	✓
Constructing Explanations and Designing Solutions		✓	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓		✓	✓				✓
Obtaining, Evaluating and Communicating Information		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓				✓	✓	✓	
Engaging in Argument From Evidence		✓	✓	✓	✓			✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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Crosscutting Concepts																					
Patterns, Similarity, and Diversity	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓		✓	✓		
Energy and Matter		✓		✓	✓	✓		✓	✓									✓	✓	✓	✓
Stability and Change		✓			✓	✓		✓					✓	✓							
Cause and Effect	✓	✓		✓				✓	✓		✓		✓			✓	✓	✓	✓	✓	
Systems and System Models	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Structure and Function							✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Scale, Proportion, and Quantity	✓	✓					✓					✓	✓	✓	✓	✓					✓

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