

Component Idea	Scope	Performance Expectation (PE)	Disciplinary Core Idea (DCI)	Science and Engineering Practice(s) (SEP)	Crosscutting Concepts (CCC)
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**LS1 From Molecules to Organisms: Structure and Processes**

Structure and Function	<b>What are Cells?</b>	MS-LS1-1	LS1.A (A)	Planning and Carrying Out Investigations	Scale, Proportion, and Quantity
	<b>Anatomy of a Cell</b>	MS-LS1-2	LS1.A (B)	Developing and Using Models	Structure and Function
	<b>Bodies and Systems</b>	MS-LS1-3	LS1.A (C)	Engaging in Argument from Evidence	Systems and System Models
Growth and Development of Organisms	<b>Reproduction in Plants and Animals</b>	MS-LS1-4	LS1.B	Engaging in Argument from Evidence	Cause and Effect
	<b>Growth of Plants</b>	MS-LS1-4	LS1.B	Engaging in Argument from Evidence	Cause and Effect
Organization for Matter and Energy Flow in Organisms	<b>Introduction to Photosynthesis</b>	MS-LS1-6	LS1.C   PS3.D	Constructing Explanations and Designing Solutions	Energy and Matter
	<b>Energy Flow in Organisms</b>	MS-LS1-7	LS1.C   PS3.D	Developing and Using Models	Energy and Matter
Information Processing	<b>Sensory Receptors</b>	MS-LS1-8	LS1.D	Obtaining, Evaluating, and Communicating Information	Cause and Effect

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**LS2 Ecosystems: Interactions, Energy, and Dynamics**

Interdependent Relationships in Ecosystems	<b>Organism Interactions in Ecosystems</b>	MS-LS2-1	LS2.A	Analyzing and Interpreting Data	Cause and Effect
	<b>Competition in Ecosystems</b>	MS-LS2-1	LS2.A (B)   LS2.A (C)	Analyzing and Interpreting Data	Cause and Effect
	<b>Predation in Ecosystems</b>	MS-LS2-2	LS2.A (D)	Constructing Explanations and Designing Solutions	Patterns
Cycle of Matter and Energy Transfer in Ecosystems	<b>Matter and Energy in Food Webs</b>	MS-LS2-3	LS2.B	Developing and Using Models	Energy and Matter
Ecosystem Dynamics, Functioning, and Resilience	<b>The Dynamic Nature of Ecosystems</b>	MS-LS2-4	LS2.C (A)	Engaging in Argument from Evidence	Stability and Change
	<b>Ecosystem Biodiversity</b>	MS-LS2-5	LS2.C (B)   ETS1.B   ETS1.B	Engaging in Argument from Evidence	Stability and Change
Biodiversity and Humans	<b>Changes in Biodiversity</b>	MS-LS2-5	LS4.D(0)   ETS1.B	Engaging in Argument from Evidence	Stability and Change
Inheritance of Traits	<b>Genes and Gene Mutations</b>	MS-LS3-1	LS3.A (A)	Developing and Using Models	Structure and Function
	<b>Inheritance</b>	MS-LS3-2	LS3.A (B)	Developing and Using Models	Cause and Effect

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**LS3 Heredity: Inheritance and Variation of Traits**

Variation of Traits	<b>Genetic Variation</b>	MS-LS3-2	LS3.B (A)	Developing and Using Models	Cause and Effect
	<b>Mutations</b>	MS-LS3-1	LS3.B (B)	Developing and Using Models	Structure and Function
Growth and Development of Organisms	<b>Reproduction and Variation</b>	MS-LS3-2	LS1.B: (0)	Developing and Using Models	Structure and Function



**LS4 Biological Evolution: Unity and Diversity**

Evidence of Common Ancestry and Diversity	<b>Fossil Record</b>	MS-LS4-1	LS4.A (A)	Analyzing and Interpreting Data	Patterns
	<b>Evolutionary History and Relationships</b>	MS-LS4-2	LS4.A (B)	Constructing Explanations and Designing Solutions	Patterns
	<b>Embryonic Development</b>	MS-LS4-3	LS4.A (C)	Analyzing and Interpreting Data	Patterns
Natural Selection	<b>Natural Selection and Populations</b>	MS-LS4-4	LS4.B (A)	Constructing Explanations and Designing Solutions	Cause and Effect
	<b>Artificial Selection</b>	MS-LS4-5	LS4.B (B)	Obtaining, Evaluating, and Communicating Information	Cause and Effect
Adaptation	<b>Adaptation by Natural Selection</b>	MS-LS4-6	LS4.C (0)	Using Mathematics and Computational Thinking	Cause and Effect