

Correlation with National Science Standards

Use the chart below to find Science A–Z units that best support the Next Generation Science Standards* for Middle School Life Science, and several featured resources from those units that provide strong connections. Each Performance Expectation in the chart represents all three dimensions: Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts.

NOTE: Science A–Z resources primarily align with standards in grades K-5. However, the units and resources listed below provide a foundation for satisfying middle school standards.

Middle School Life Science Topics: "How can one explain the ways cells contribute to the function of living organisms? How does a system of living and non-living things operate to meet the needs of the organisms in an ecosystem? How do living organisms pass traits from one generation to the next? How do organisms change over time in response to changes in the environment?"

MS. Structure, Function, and Information Processing		
Performance Expectations	Disciplinary Core Ideas	Science A–Z Units (Featured Resources)
MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.	LS1.A: Structure and Function	5–6 Inside Living Things (Nonfiction Books)
MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.	LS1.A: Structure and Function	5–6 Inside Living Things (Nonfiction Books; <i>Cell Models</i> Process Activity; <i>Plant Cell and Animal Cell</i> Science Diagram)
MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.	LS1.A: Structure and Function	5–6 Inside Living Things (Nonfiction Books; <i>Fighting Infection</i> FOCUS Book; <i>Transport Systems in Plants</i> FOCUS Book; <i>Space Bones</i> Quick Reads; <i>Body Systems for Movement</i> Investigation Pack; <i>Seven Major Body Systems</i> Science Diagram)
MS-LS1-8. Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.	LS1.D: Information Processing	5–6 Inside Living Things (Nonfiction Books; <i>You've Got a Lot of Nerve</i> FOCUS Book; <i>Incredible Eyes</i> FOCUS Book)

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MS. Matter and Energy in Organisms and Ecosystems		
Performance Expectations	Disciplinary Core Ideas	Science A–Z Units (Featured Resources)
MS-LS1-6. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.	LS1.C: Organization for Matter and Energy Flow in Organisms	5–6 Food Chains (Nonfiction Books; Discussion Cards; <i>Food Chain</i> Science Diagram)
	PS3.D: Energy in Chemical Processes and Everyday Life	5–6 Food and Nutrition (Nonfiction Books; <i>Photosynthesis</i> Science Diagram)
MS-LS1-7. Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.	LS1.C: Organization for Matter and Energy Flow in Organisms	5–6 Food and Nutrition (Nonfiction Books)
	PS3.D: Energy in Chemical Processes and Everyday Life	5–6 Food and Nutrition (Nonfiction Books; <i>Nutrients in Meals</i> Investigation Pack)
MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.	LS2.A: Interdependent Relationships in Ecosystems	5–6 Food Chains (Nonfiction Books; <i>Properties of Food Chains</i> Investigation Pack; <i>Dark, Hot, and Hostile</i> Quick Reads; <i>Broken Chains</i> FOCUS Book; <i>Apex Predators</i> FOCUS Book)
MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.	LS2.B: Cycle of Matter and Energy Transfer in Ecosystems	5–6 Food Chains (Nonfiction Books; <i>Paper Food Chains and Food Web</i> Process Activity; <i>Forest Food Web</i> Science Diagram; <i>Ocean Food Web</i> Science Diagram; <i>Micro Food Chains</i> FOCUS Book)
		5–6 Food and Nutrition (Nonfiction Books)
MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.	LS2.C: Ecosystem Dynamics, Functioning, and Resilience	5–6 Food Chains (<i>How Environmental Changes Affect Food Webs</i> Project-Based Learning Pack; <i>The Ocean’s Green Machines</i> Science Video; <i>Population Control</i> Debate) 5–6 Atmosphere and Climate (Nonfiction Books) 5–6 Adaptations (<i>The Curious Case of the Peppered Moth</i> FOCUS Book)

MS. Interdependent Relationships in Ecosystems		
Performance Expectations	Disciplinary Core Ideas	Science A–Z Units (Featured Resources)
MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.	LS2.A: Interdependent Relationships in Ecosystems	5–6 Food Chains (Nonfiction Books; <i>Apex Predators</i> FOCUS Book; <i>How Environmental Changes Affect Food Webs</i> Project-Based Learning Pack)
MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.	LS2.C: Ecosystem Dynamics, Functioning, and Resilience	5–6 Food Chains (<i>Properties of Food Chains</i> Investigation Pack; <i>Micro Food Chains</i> FOCUS Book; <i>Broken Chains</i> FOCUS Book) 5–6 Water (<i>Life in the Current</i> FOCUS Book)
	LS4.D: Biodiversity and Humans	5–6 Water (Nonfiction Books; <i>Water For The People</i> FOCUS Book) 5–6 Food Chains (<i>Invasion of the Zebra Mussels</i> Quick Reads)
	ETS1.B: Developing Possible Solutions	5–6 Water (Nonfiction Books; <i>Water For The People</i> FOCUS Book) 3–4 Habitats/Environment (<i>Bloomin' Algae</i> FOCUS Book)

MS. Growth, Development, and Reproduction of Organisms		
Performance Expectations	Disciplinary Core Ideas	Science A–Z Units (Featured Resources)
MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.	LS1.B: Growth and Development of Organisms	5–6 Adaptations (Nonfiction Books; <i>Emperors of the Ice</i> FOCUS Book; <i>Design Animal Adaptations</i> Process Activity; <i>Structural Adaptations</i> Investigation Pack) 3–4 Plant Life (<i>Traveling Seeds</i> FOCUS Book) 3–4 Life Cycles (<i>Life in the Pouch</i> FOCUS Book)
MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.	LS1.B: Growth and Development of Organisms	5–6 Adaptations (<i>Controlling Water Loss from Leaves</i> Process Activity; <i>Plant Behavior</i> FOCUS Book)

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MS. Growth, Development, and Reproduction of Organisms (continued)		
Performance Expectations	Disciplinary Core Ideas	Science A–Z Units (Featured Resources)
MS-LS3-1. Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.	LS3.A: Inheritance of Traits	5–6 Adaptations (Nonfiction Books)
	LS3.B: Variation of Traits	5–6 Adaptations (Nonfiction Books; <i>The Curious Case of the Peppered Moth</i> FOCUS Book)
MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.	LS1.B: Growth and Development of Organisms	Resources to be developed
	LS3.A: Inheritance of Traits	Resources to be developed
	LS3.B: Variation of Traits	Resources to be developed
MS-LS4-5. Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.	LS4.B: Natural Selection	5–6 Adaptations (Nonfiction Books; <i>Dogs by Design</i> FOCUS Book)

MS. Natural Selection and Adaptations		
Performance Expectations	Disciplinary Core Ideas	Science A–Z Units (Featured Resources)
MS-LS4-1. Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.	LS4.A: Evidence of Common Ancestry and Diversity	5–6 Food Chains (<i>Jurassic Food Chains</i> FOCUS Book) 3–4 Minerals, Rocks, and Soil (<i>Fossils</i> FOCUS Book) 3–4 Habitats/Environment (<i>Habitats Then and Now</i> FOCUS Book)

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MS. Natural Selection and Adaptations (continued)		
Performance Expectations	Disciplinary Core Ideas	Science A–Z Units (Featured Resources)
MS-LS4-2. Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.	LS4.A: Evidence of Common Ancestry and Diversity	5–6 Adaptations (Nonfiction Books; <i>Fossil Horses</i> Quick Reads) 3–4 Minerals, Rocks, and Soil (<i>Fossils</i> FOCUS Book)
MS-LS4-3. Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.	LS4.A: Evidence of Common Ancestry and Diversity	Resources to be developed
MS-LS4-4. 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: Natural Selection	5–6 Adaptations (<i>Darwin's Finches</i> FOCUS Book; <i>The Curious Case of the Peppered Moth</i> FOCUS Book)
MS-LS4-6. Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.	LS4.C: Adaptation	5–6 Adaptations (Nonfiction Books; <i>Darwin's Finches</i> FOCUS Book; <i>The Curious Case of the Peppered Moth</i> FOCUS Book)