

Introduction to Agriculture, Food, and Natural Resources Next Generation Science Standards Alignment

	Unit 1 The Circles of Agricultural Education	Unit 2 Communicating Today	Unit 3 The Science of Agriculture	Unit 4 Natural Resources	Unit 5 Plants and Animals	Unit 6 Agricultural Power and Technology	Unit 7 Looking Ahead
Disciplinary Core Ideas							
Life Science							
LS1: From Molecules to Organisms: Structures and Processes							
• LS1.A: Structure and Function					X		
• LS1.B: Growth and Development of Organisms							
• LS1.C: Organization for Matter and Energy Flow in Organisms				X	X		
LS2: Ecosystems: Interactions, Energy, and Dynamics							
• LS2.A: Interdependent Relationships in Ecosystems				X			
• LS2.B: Cycles of Matter and Energy Transfer in Ecosystems				X			
• LS2.C: Ecosystem Dynamics, Functioning, and Resilience				X			
• LS2.D: Social Interactions and Group Behavior							
LS3: Heredity: Inheritance and Variation of Traits							
• LS3.A: Inheritance of Traits					X		
• LS3.B: Variation of Traits					X		
LS4: Biological Evolution: Unity and Diversity							
• LS4.A: Evidence of Common Ancestry and Diversity							
• LS4.B: Natural Selection							
• LS4.C: Adaptation							
• LS4.D: Biodiversity and Humans							X
Earth and Space Science							
ESS1: Earth's Place in the Universe							
• ESS1.A: The Universe and Its Stars							
• ESS1.B: Earth and the Solar System							
• ESS1.C: The History of Planet Earth							
ESS2: Earth's Systems							
• ESS2.A: Earth Materials and Systems							
• ESS2.B: Plate Tectonics and Large-Scale System Interactions							
• ESS2.C: The Roles of Water in Earth's Surface Processes				X			
• ESS2.D: Weather and Climate							
• ESS2.E: Biogeology							

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ESS3: Earth and Human Activity							
• ESS3.A: Natural Resources	X			X		X	
• ESS3.B: Natural Hazards							
• ESS3.C: Human Impacts on Earth Systems				X		X	X
• ESS3.D: Global Climate Change							
Physical Science							
PS1: Matter and Its Interactions							
• PS1.A: Structure and Properties of Matter							
• PS1.B: Chemical Reactions					X		
• PS1.C: Nuclear Processes							
PS2: Motion and Stability: Forces and Interactions							
• PS2.A: Forces and Motion							
• PS2.B: Types of Interactions							
PS3: Energy							
• PS3.A: Definitions of Energy							
• PS3.B: Conservation of Energy and Energy Transfer							
• PS3.C: Relationship Between Energy and Forces							
• PS3.D: Energy in Chemical Processes and Everyday Life							
PS4: Waves and Their Applications in Technologies for Information Transfer							
• PS4.A: Wave Properties							
• PS4.B: Electromagnetic Radiation							
• PS4.C: Information Technologies and Instrumentation							
Engineering, Technology, and the Application of Science							
• ETS1: Engineering Design							
• ETS1.A: Defining and Delimiting Engineering Problems							
• ETS1.B: Developing Possible Solutions							
• ETS1.C: Optimizing the Design Solution							
Science and Engineering Practices							
• Asking Questions and Defining Problems				X	X	X	
• Developing and Using Models					X	X	
• Planning and Carrying Out Investigations			X	X	X	X	
• Analyzing and Interpreting Data	X		X	X	X	X	
• Using Mathematics and Computational Thinking						X	
• Constructing Explanations and Designing Solutions					X		
• Engaging in Argument from Evidence					X	X	
• Obtaining, Evaluating, and Communicating Information			X	X	X	X	

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Crosscutting Concepts							
• Patterns				X	X		
• Cause and Effect: Mechanism and Prediction	X		X	X	X	X	
• Scale, Proportion, and Quantity				X			
• Systems and System Models					X		
• Energy and Matter: Flows, Cycles, and Conservation				X			
• Structure and Function				X	X		
• Stability and Change				X			

Understandings about the Nature of Science							
• Scientific Investigations Use a Variety of Methods			X		X	X	
• Scientific Knowledge is Based on Empirical Evidence						X	
• Scientific Knowledge is Open to Revision in Light of New Evidence							
• Science Models, Laws, Mechanisms, & Theories Explain Natural Phenomena			X				
• Science is a Way of Knowing			X		X		
• Scientific Knowledge Assumes Order & Consistency in Natural Systems					X		
• Science is a Human Endeavor	X		X				
• Science Addresses Questions About the Natural and Material World.					X	X	