

## Principles of Agricultural Science - Animal Next Generation Science Standards Alignment

	Unit 1 Animal Planet	Unit 2 History and Use of Animals	Unit 3 Animal Handling and Safety	Unit 4 Cells and Tissues	Unit 5 Animal Nutrition	Unit 6 Animal Reproduction	Unit 7 Genetics	Unit 8 Animal Health	Unit 9 Animal Products, Marketing, and Selection
<b>Disciplinary Core Ideas</b>									
<b>Life Science</b>									
<b>LS1: From Molecules to Organisms: Structures and Processes</b>									
• LS1.A: Structure and Function			X	X	X	X	X	X	
• LS1.B: Growth and Development of Organisms							X		
• LS1.C: Organization for Matter and Energy Flow in Organisms				X	X				
<b>LS2: Ecosystems: Interactions, Energy, and Dynamics</b>									
• LS2.A: Interdependent Relationships in Ecosystems									
• LS2.B: Cycles of Matter and Energy Transfer in Ecosystems				X					
• LS2.C: Ecosystem Dynamics, Functioning, and Resilience									
• LS2.D: Social Interactions and Group Behavior									
<b>LS3: Heredity: Inheritance and Variation of Traits</b>									
• LS3.A: Inheritance of Traits							X		X
• LS3.B: Variation of Traits							X		X
<b>LS4: Biological Evolution: Unity and Diversity</b>									
• LS4.A: Evidence of Common Ancestry and Diversity									
• LS4.B: Natural Selection									
• LS4.C: Adaptation							X		
• LS4.D: Biodiversity and Humans									
<b>Earth and Space Science</b>									
<b>ESS1: Earth's Place in the Universe</b>									
• ESS1.A: The Universe and Its Stars									
• ESS1.B: Earth and the Solar System									
• ESS1.C: The History of Planet Earth									
<b>ESS2: Earth's Systems</b>									
• 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									
• ESS2.D: Weather and Climate									
• ESS2.E: Biogeology									
<b>ESS3: Earth and Human Activity</b>									
• ESS3.A: Natural Resources									

	Unit 1 Animal Planet	Unit 2 History and Use of Animals	Unit 3 Animal Handling and Safety	Unit 4 Cells and Tissues	Unit 5 Animal Nutrition	Unit 6 Animal Reproduction	Unit 7 Genetics	Unit 8 Animal Health	Unit 9 Animal Products, Marketing, and Selection
• ESS3.B: Natural Hazards									
• ESS3.C: Human Impacts on Earth Systems									
• ESS3.D: Global Climate Change									
<b>Physical Science</b>									
<b>PS1: Matter and Its Interactions</b>									
• PS1.A: Structure and Properties of Matter									
• PS1.B: Chemical Reactions				X					
• PS1.C: Nuclear Processes									
<b>PS2: Motion and Stability: Forces and Interactions</b>									
• PS2.A: Forces and Motion									
• PS2.B: Types of Interactions									
<b>PS3: Energy</b>									
• PS3.A: Definitions of Energy									
• PS3.B: Conservation of Energy and Energy Transfer					X				
• PS3.C: Relationship Between Energy and Forces									
• PS3.D: Energy in Chemical Processes and Everyday Life					X				
<b>PS4: Waves and Their Applications in Technologies for Information Transfer</b>									
• PS4.A: Wave Properties									
• PS4.B: Electromagnetic Radiation									
• PS4.C: Information Technologies and Instrumentation									
<b>Engineering, Technology, and the Application of Science</b>									
• ETS1: Engineering Design									
• ETS1.A: Defining and Delimiting Engineering Problems									
• ETS1.B: Developing Possible Solutions									
• ETS1.C: Optimizing the Design Solution									
<b>Science and Engineering Practices</b>									
• Asking Questions and Defining Problems			X	X	X	X		X	X
• Developing and Using Models			X	X	X		X		
• Planning and Carrying Out Investigations			X	X					
• Analyzing and Interpreting Data			X	X	X	X	X	X	X
• Using Mathematics and Computational Thinking					X	X	X		X
• Constructing Explanations and Designing Solutions			X		X	X		X	X
• Engaging in Argument from Evidence						X		X	X
• Obtaining, Evaluating, and Communicating Information		X		X	X	X	X	X	X
<b>Crosscutting Concepts</b>									
• Patterns						X	X		

	Unit 1 Animal Planet	Unit 2 History and Use of Animals	Unit 3 Animal Handling and Safety	Unit 4 Cells and Tissues	Unit 5 Animal Nutrition	Unit 6 Animal Reproduction	Unit 7 Genetics	Unit 8 Animal Health	Unit 9 Animal Products, Marketing, and Selection
• Cause and Effect: Mechanism and Prediction			X		X				X
• Scale, Proportion, and Quantity							X		
• Systems and System Models			X	X	X	X	X		
• Energy and Matter: Flows, Cycles, and Conservation					X				
• Structure and Function		X		X	X	X	X	X	X
• Stability and Change					X	X			

### Understandings about the Nature of Science

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