

Agricultural Power and Technology Next Generation Science Standards Alignment

	Unit 1 Introduction to Ag Power and Tech	Unit 2 Safety and Measurement	Unit 3 Material Properties	Unit 4 Fabrication	Unit 5 Energy	Unit 6 Machines and Structures	Unit 7 Mechanical Applications
Disciplinary Core Ideas							
Physical Science							
PS1: Matter and Its Interactions							
• PS1.A: Structure and Properties of Matter			X		X		
• PS1.B: Chemical Reactions			X		X		
• PS1.C: Nuclear Processes							
PS2: Motion and Stability: Forces and Interactions							
• PS2.A: Forces and Motion			X				
• PS2.B: Types of Interactions			X		X		
PS3: Energy							
• PS3.A: Definitions of Energy	X		X		X	X	
• PS3.B: Conservation of Energy and Energy Transfer	X	X	X		X	X	
• PS3.C: Relationship Between Energy and Forces		X	X		X	X	
• PS3.D: Energy in Chemical Processes and Everyday Life	X		X		X		
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	X		X	X	X	X	X
• ETS1.B: Developing Possible Solutions	X		X	X	X	X	X
• ETS1.C: Optimizing the Design Solution		X	X		X	X	
Science and Engineering Practices							
• Asking Questions and Defining Problems	X	X	X	X	X	X	X
• Developing and Using Models	X	X	X	X	X	X	X
• Planning and Carrying Out Investigations	X		X	X	X	X	X
• Analyzing and Interpreting Data	X	X	X	X	X	X	
• Using Mathematics and Computational Thinking	X	X	X	X	X	X	
• Constructing Explanations and Designing Solutions	X		X	X	X	X	X
• Engaging in Argument from Evidence			X	X	X		

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• Obtaining, Evaluating, and Communicating Information	X		X	X	X	X	X

Crosscutting Concepts

• Patterns	X	X	X	X	X	X	
• Cause and Effect: Mechanism and Prediction	X	X	X	X	X	X	
• Scale, Proportion, and Quantity			X		X	X	
• Systems and System Models	X	X	X	X	X	X	X
• Energy and Matter: Flows, Cycles, and Conservation	X		X	X	X	X	
• Structure and Function			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	
• 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		X	X	
• Science is a Way of Knowing			X		X	X	
• Scientific Knowledge Assumes Order & Consistency in Natural Systems			X		X	X	
• Science is a Human Endeavor	X		X	X	X	X	X
• Science Addresses Questions About the Natural and Material World.							X