

Environmental Science Issues Next Generation Science Standards Alignment

	Unit 1 – Issue Analysis	Unit 2 – Biodiversity	Unit 3 – Energy, Technology, and Society	Unit 4 – Feeding the World	Unit 5 – Pollution	Unit 6 – ESI Research
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		X				
• LS1.C: Organization for Matter and Energy Flow in Organisms						
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		X	X	
• LS2.D: Social Interactions and Group Behavior						
LS3: Heredity: Inheritance and Variation of Traits						
• LS3.A: Inheritance of Traits						
• LS3.B: Variation of Traits						
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		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	X		X		X	
• ESS2.E: Biogeology						
ESS3: Earth and Human Activity						
• ESS3.A: Natural Resources			X			
• ESS3.B: Natural Hazards						
• ESS3.C: Human Impacts on Earth Systems		X	X	X	X	
• ESS3.D: Global Climate Change			X		X	

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Physical Science						
PS1: Matter and Its Interactions						
• PS1.A: Structure and Properties of Matter						
• PS1.B: Chemical Reactions						
• 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			X			
• PS3.C: Relationship Between Energy and Forces						
• PS3.D: Energy in Chemical Processes and Everyday Life			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	
• ETS1.B: Developing Possible Solutions					X	
• ETS1.C: Optimizing the Design Solution					X	
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
• Using Mathematics and Computational Thinking		X	X	X	X	
• Constructing Explanations and Designing Solutions			X		X	
• Engaging in Argument from Evidence			X	X	X	
• Obtaining, Evaluating, and Communicating Information			X	X	X	X
Crosscutting Concepts						
• Patterns	X	X	X		X	
• Cause and Effect: Mechanism and Prediction	X	X	X	X	X	
• Scale, Proportion, and Quantity	X					
• Systems and System Models		X			X	
• Energy and Matter: Flows, Cycles, and Conservation						
• Structure and Function	X					
• Stability and Change	X	X				

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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	
• Scientific Knowledge is Open to Revision in Light of New Evidence					X	
• Science Models, Laws, Mechanisms, & Theories Explain Natural Phenomena						
• Science is a Way of Knowing						
• 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	X	X	X	X