

**Southern Research STEM Education Outreach**  
**Middle School Field Trip Experiences**  
**2015 Alabama Course of Study Alignment**

	<b>Green Engineering</b>	<b>Infectious Diseases</b>	<b>The Three Seas</b>
	<b>Physical Science Standards (Grade 8)</b>	<b>Life Science Standards (Grade 7)</b>	<b>Earth and Space Science Standards (Grade 6)</b>
15. Analyze evidence to explain how changes in human population, per capita consumption of natural resources, and other human activities affect Earth's systems.			✓
3. Construct an explanation of the function of specific cell structures for maintaining a stable environment.		✓	
4. Construct models and representations of organ systems to demonstrate how multiple interacting organs and systems work together to accomplish specific functions.		✓	
13. Create and analyze graphical displays to illustrate the relationships of kinetic energy to the mass and speed of an object.	✓		
14. Use models to construct an explanation of how a system of objects may contain varying types and amounts of potential energy.	✓		
16. Apply the law of conservation of energy to develop arguments supporting the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.	✓		
	<b>Science and Engineering Practices</b>		
Asking Questions and Defining Problems	✓	✓	✓
Developing and Using Models	✓	✓	✓
Planning and Carrying Out Investigations	✓	✓	✓
Analyzing and Interpreting Data	✓	✓	✓
Using Mathematics and Computational Thinking	✓		
Constructing Explanations and Designing Solutions	✓		

Engaging in Argument from Evidence			
Obtaining, Evaluating, and Communicating Information			
	<b>Cross-Cutting Concepts</b>		
Patterns	✓	✓	✓
Cause and Effect			✓
Scale, Proportion, and Quantity	✓		
Systems and System Models	✓	✓	✓
Energy and Matter	✓		
Structure and Function	✓		
Stability and Change			