Benchmarks Grades 9-12 (H)	Mighty Current	Hand-cranked Generator	Electricity Bench	Optics Lab	Mixing Colors	Mystery Shadows	Soap Film Rainbow	Color Banner	Seasons Lab	Orrery	Coriollis Fountain	Snow Chamber	Dew Point	Lissajous' Figures	Lariat Chain	Ripple Tank	Musical Ratios	Waves on a String	MacFourier	Mobiles Lab	Pendulum Clock	Sawtooth Grapher	Stress Analyzer	Variable Length Pendulum	Vibrations and Frequencies
Earth and Space Science (ESS-H)																									
A. Energy In the Earth System.																									
1. Investigating the methods of energy transfer and identifying the sun									x	x	x														
as the major source of energy for most of the Earth's systems.																									
2. Modeling the seasonal changes in the relative position and appearance									x	x	x	x	x												
of the sun and inferring the consequences with respect to the Earth's																									
temperature.																									
3. Explaining fission and fusion in relation to the Earth's internal and	x	x	x						x	x	x	x	x												
external heat sources.																									
4. Explaining how decay of radioactive isotopes and the gravitational																									
energy from the Earth's original formation generates the Earth's																									
internal heat.																									
5. Demonstrating how the sun's radian energy causes convection currents								x	x	x	x	x													
within the atmosphere and the oceans.																									
6. Describing the energy transfer from the sun to the Earth and its								x	x	x	x	x													
atmosphere as it relates to the development of weather and climate																									
patterns.																									
7. Modeling the transfer of the Earth's internal heat by way of convection								x	x	x	x	x													
currents in the mantle which powers the movement of the lithospheric plates																									
B. Geochemical Cycles.																									
1. Illustrating how stable chemical atoms or elements are recycled through																									
the solid earth, oceans, atmosphere, and organisms.																									
2. Demonstrating Earth's internal and external energy sources as forces								x	x	x	x	x													
in moving chemical atoms or elements.																									
C. The Origin and Evolution of the Earth System.																									
1. Explaining the formation of the solar system from a nebular cloud of																									
dust and gas.																									
2. Estimating the age of the Earth by using dating techniques.																									
3. Communicating the geologic development of Louisiana.																									
4. Examining fossil evidence as it relates to the evolution of life and the																									
resulting changes in the amount of oxygen in the atmosphere.																									
5. Explaining that natural processes and changes in the Earth system may								x	x	x	x	x													
take place in a matter of seconds or develop over billions of years.																									
D. The Origin and Evolution of the Universe.																									
1. Identifying scientific evidence that supports the latest theory of the age and																									
origin of the universe.																									
2. Describing the organization of the known universe.								x	x	x	x	x													
3. Comparing and contrasting the sun with other stars.								x	x	x															
4. Identifying the elements found in the sun and other stars by investigating			x	x	x	x	x																		
the spectra.																									
5. Describing the role of hydrogen in the formation of all the natural elements.																									
6. Demonstrating the laws of motion for orbiting bodies.								x	x	x					x		x	x	x			x			x
7. Describe the impact of technology on the study of the Earth, the solar								x	x	x	x		x												

system, and the universe.