Benchmarks Grades 9-12 (H)	Mighty Currents	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	The Sound Lab	Patterns of Movement	Pendulum Lab	Peg and Pendulum	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
Physical Science (PS-H)																													
A. Measurement and Symbolic Representation.																													
1. Manipulating and analyzing quantitative data using the SI system.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2. Understanding the language of chemistry.																													
B. Atomic Structure.																													
1. Describing the structure of the atom and identifying and characterizing																													
the particles that compose it.																													
2. Describing the nature and importance of radioactive isotopes and																													
nuclear reactions.																													
3. Understanding that an atom's electron configuration, particularly that																													
of the outermost electrons, determines the chemical properties of that																													
atom.																													
C. The Structure and Properties of Matter.																													
1. Distinguishing among elements, compounds, and/or mixtures.																													
2. Discovering the patterns of physical and chemical properties found on																													
the periodic table of the elements.																													
3. Understanding that physical properties of substances reflect the nature of	x	x	x	x	x	x	x	x	x			x	x	x	x				x	x	x	x							x
interactions among its particles.																													
4. Separating mixtures based upon the physical properties of their																													
components.																													
5. Understanding that chemical bonds are formed between atoms when																													
the outermost electrons are transferred or shared to produce ionic																													
and covalent compounds.																													
6. Recognizing that carbon atoms can bond to one another in chains,																													
rings, and branching networks to form a variety of structures.																													
7. Using the kinetic theory to describe the behavior of atoms and molecules																													
during phase changes and to describe the behavior of matter in its																													
different phases.																													
D. Chemical Reactions.																													
1. Observing and describing changes in matter and citing evidence of																													
chemical change.																													
2. Comparing contrasting, and measuring the pH of acids and bases using																													
a variety of indicators.																													
3. Writing balanced equations to represent a variety of chemical reactions.																													
4. Analyzing the factors that affect the rate and equilibrium of a chemical																													

reaction.																															
5. Applying the law of conservation of matter to chemical reactions.																															
6. Comparing and contrasting the energy changes that accompany		x	x	x	x	x											x	x	x	x						x				
changes in matter.																															
7. Identifying important chemical reactions that occur in living systems, the																															
home, industry, and the environment.																															
E. Forces and Motion.																															
1. Recognizing the charecteristics and relative strengths of the forces of		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
nature.																															
2. Understanding the relationship of displacement, time, rate of motion,		x	x	x	x							x			x	x	x	x	x	x	x	x	x	x	x	x	x			
representing rate and changes of motion mathematically and graphically.																															
3. Understanding effects of forces on changes in motion as explained by		x													x	x	x	x	x	x	x	x	x	x	x	x	x			
Newtonian mechanics.																															
4. Illustrating how frame of reference affects our ability to judge motion.					x	x	x				x	x			x	x	x	x	x	x	x	x	x	x	x	x	x			
F. Energy.																															
1. Describing and representing relationships among energy, work, power		x	x	x											x	x	x	x	x	x	x	x	x	x	x	x			
and efficiency.																															
2. Applying the universal law of conservation of matter, energy, and		x	x	x											x	x	x	x	x	x	x	x	x	x	x	x			
momentum, and recognizing their implications.																															
G. Interactions of Energy and Matter.																															
1. Giving examples of the transport of energy through wave action.															x	x	x	x	x	x	x	x	x	x	x	x	x			
2. Analyzing the relationship and interaction of magnetic and electrical		x	x	x							x	x			x	x	x	x	x											
fields and the forces they produce.																															
3. Characterizing and differentiating electromagnetic and mechanical waves		x	x	x							x	x			x	x	x	x	x	x	x				x	x	x			
and their effects on objects as well as humans.																															
4. Explaining the possible hazards of exposure to various forms and amounts		x	x	x						x							x	x	x	x					x		x			
of energy.																															