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	Lissajous' Figures	Lariat Chain	Ripple Tank	Musical Ratios	Pendulum Lab	Peg and Pendulum	Waves on a String	MacFourier	Mobiles Lab	Pendulum Clock	Sawtooth Grapher	Stress Analyzer	Variable Length Pendulum
Science as Inquiry																										
A. The Abilities Necessary to do Scientific Inquiry.																										
1. Identifying questions and concepts that guide scientific investigations.	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. Designing and conducting scientific investigations.		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
3. Using technology and mathematics to improve investigations and	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
communications.																										
4. Formulating and revising scientific explanations and models using logic	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
and evidence.																										
5. Recognizing and analyzing alternative explanations and models.	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
6. Communicating and defending a scientific argument.	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
7. Utilizing science safety procedures during scientific investigations.	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
B. Understanding Scientific Inquiry.																										
1. Communicating that scientists usually base their investigations on	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
existing models, explanations, and theories.																										
2. Communicating that scientists conduct investigations for a variety 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
reasons, such as exploration of new area, discovery of new aspects of																										
the natural world, confirmation of prior investigations, evaluation of																										
current theories, and comparison of models and theories.																										
3. Communicating that scientists rely on technology to enhance the	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
gathering and manipulation of data.																										
4. Analyzing a proposed explanation of scientific evidence according to the	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
following criteria: follow a logical structure, follow rules of evidence,																										
allow for questions and modifications, and is based on historical and																										
current scientific knowledge.																										
5. Communicating that the results of scientific inquiry, new knowledge,	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
and methods emerge from different types of investigations and public																										
communication among scientists.																										

		x				x		x				x		x		x	x	x		x		x	x	x			**Vibrations and Frequencies**