## Benchmarks Grades 5-8 (M)

### Benchmarks

| Mighty Currents | Hand-cranked Generator | Electricity Bench | Optics Lab | Mixing Colors | Mystery Shadows | Soap Film Rainbow | Colors Banner | Seasons Lab | Orrery | Coriolls Fountain | Snow Chamber | Dew Point | The Sound Lab | Patterns of Movement | Pendulum Lab | Peg and Pendulum | Lessons' Figures | Lariat Chain | Ripple Tank | Musical Ratios | Waves on a String | MacFourier | Mobiles Lab | Pendulum Clock | Sawtooth Grapher | Variable Length Pendulum | Vibrations and Frequencies |
|------------------|------------------------|-------------------|------------|---------------|----------------|-------------------|---------------|-------------|--------|-------------------|---------------|-----------|----------------|------------------------|-------------|----------------|-------------------|-------------|-----------|-----------------|------------------------|-----------|--------------|------------------|----------------|----------------|------------------|------------------------|

## Science as Inquiry (SI-E)

### A. The Abilities Necessary to do scientific inquiry.

1. Identifying questions that can be used to design a scientific investigation.
2. Designing and conducting a scientific investigation.
3. Using mathematics and appropriate tools and techniques to gather, analyze, and interpret data.
4. Developing descriptions, explanations, and graphs using data.
5. Developing models and predictions using the relationships between data and explanations.
6. Comparing alternative explanations and predictions.
7. Communicating scientific procedures, information, and explanations.
8. Utilizing safety procedures during scientific investigations.

### B. Understanding scientific inquiry.

1. Recognizing that different kinds of questions guide different kinds of scientific investigations.
2. Communicating that current scientific knowledge guides scientific investigations.
3. Understanding that math, technology, and scientific techniques used in an experiment can limit or enhance the accuracy of scientific knowledge.
4. Using data and logical arguments to propose, modify, or elaborate on principles and models.
5. Understanding that scientific knowledge is enhanced through peer review, alternative explanations, and constructive criticism.
6. Communicating that scientific investigations can result in new ideas, new methods or procedures, and new technologies.
7. Understanding that scientific development/technology is driven by societal needs and funding.