**F-m-a Lab**

**Question:** What effect does varying force and varying mass have upon the acceleration of a cart?

**Purpose:** To use experimental data to determine the mathematical equation that relates force, mass and acceleration.

A complete lab write-up includes a Title, a Purpose, a Data section, a Conclusion and a Discussion of Results. The Data section should include two data tables and then the data should be graphed; one set should relate the relationship between mass and acceleration, the other shows the relationship between force and acceleration. The Conclusion should respond to the question raised in the Purpose of the lab (as always). The Discussion of Results section should reference the Data section and thoroughly discuss the supporting evidence for the conclusion.

**Scoring Rubric:**

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|  | Included, labeled and organized all parts of the lab report. | \_\_\_\_/ 10 |
|  | Data section includes two data tables and two graphs. Slope of the best fit line recorded for each graph. Axes are labeled and units reported. |
|  | Conclusion describes the relationship between mass and acceleration and force and acceleration. The experimentally-derived equation relating force, mass and acceleration is reported; symbols are defined. |
|  | Discussion of results accurately and thoroughly explains the logical connection between the data and the reported equation. |