**Mass & Matter**

**That’s heavy man… heavy.**



**Mr. Beadle – Rm 202**

[**www.vhmsscience.weebly.com**](http://www.vhmsscience.weebly.com)

**bbeadle@alpinedistrict.org**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_**

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| **Lab Activities** | **Score** |
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| Elastic Energy Experimental Design | /72 |

**Scientific Method & Experimental Design**

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| **Experimental Test Question & Hypothesis /10** |
| **Overall Question**: What is mass? What is matter? What happens to our mass when we increase the amount of matter?*Look at the variables that you’re testing and rephrase the overall question into a testable experimental question*:How does (independent variable) affect (dependent variable)?**Investigative question**: ( /4) |
| Example: **If** I change the (independent variable) **then** the (dependent variable) changes **because…*** This statement should be a subset of a series of tests that tests the original hypothesis.
* Include what you are changing in the independent variable and how that changes the dependent variable.
* The “because” portion is the “why” behind the explanation of your possible outcomes.

**Your Hypothesis**: ( /6) |
| **Experimental Design: /10** |
| How are you going to carry out your experiment?  Be sure that you set up a step by step approach detailing each set of procedures.  (Think of a recipe book w. materials and procedures).

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| **Materials**(Bullet Points, Quantities & Items) | **Procedures**(1. 2. 3.) |
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| **Qualitative Observations** (What you see before, during or after the experiment - min 2):  **/4** |
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| **Data Table /20** |

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| **Data Analysis** (min 4): **/8** |
| * What is the range of your dependent data (Your high and low) and how does it compare to your independent range of data?
* What is the average of your dependent data compared to the independent data?
* What trends do you see according to your graph?
* What data points don’t seem to match up to the trends? (These “bumps” in the graph are your possible experimental errors)
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| **Conclusion: /10** |
| * Summarize
	+ **Q**uestion & Hypothesis
	+ **P**rocedures
	+ **O**bservations, Trends, Results & Data Analysis related to the question/hypothesis.
	+ **E**xperimental errors
* Final Concluding statements
	+ **C**onclusion 1:
		- Does the data support or reject your original hypothesis?
	+ **C**onclusion 2:
		- Explain the “why” behind the phenomenon that you witnessed and provide the reasoning to support why your hypothesis is correct or incorrect.
		- Use your findings to give deeper insights in your research.
* Next Steps:
	+ How can we apply what you learned to help explain other phenomenon?
	+ What is the next step in your research

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