**Free Falling Lab Report**

Please type the following up and create ONE document per group! Make sure all tables and graphs are on the word document as well! Please print to turn in.

**Overall Objective: Explain the motion of a marble while falling to the ground.**

***Part A***

*Design*

Question: When a marble is dropped, will it fall at a constant rate? Does the mass have an effect on this rate?

*Data Collection & Processing:*

Raw Data:

* Create a data table with all of you raw data. Make sure to label your columns and include units! You will make a second data table showing the mass of the two marbles: Mass of blue marble = 4.1 g and Mass of silver marble = 28.1 g

Data Processing:

* Calculated data table (make sure to include column headers and units!)
* Create a pos vs time graph for BOTH marbles
  + Use logger pro
  + 2 lines on ONE graph!
    - To add a second data set, click DATA then NEW DATA SET
    - Make sure you have a title, labeled axis with units, and your graph is autoscaled!

**Part B**

*Design*

Question: When a marble is dropped, what is its average acceleration? What will be the acceleration of fall for two different masses?

*Data Collection & Processing:*

(NO RAW DATA)

Data Processing:

* create a data table with your calculations

**Conclusion and Evaluation**

* Conclusion: Discuss your results. Answer the research questions. Make reference to your data and graphs
* Limitations: how well did your experimental design help you answer your experimental question? What worked well and why? What didn’t work well and why? You could also discuss outliers here.
* Suggestions for improvements: What would you do differently next time?