Lap Group _____ Physics Experiment

Design an Experiment to Test the Acceleration Due to Gravity

Directions: Your job is to design an experiment that provides a value for the acceleration due to gravity near the surface of the Earth.

Lab Requirements

1) Each group must first seek "project approval" by submitting a detailed *pre-lab write-up* of their experimental procedure. The pre-lab write-up should be written in the format listed below:

a) *Intro* - what are you trying to do

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b) *Materials* - what will you need (include everything)

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c) *Procedure* - how will you conduct the experiment

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d) What equations will you use? Write them below and solve them for the unknown.

e) *Sources of erro*r - where should you look for possible sources of error that will affect your results (list at least two)

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2) *Run the experiment after your group receives project approval*

3**) Lab Report - Each person must submit a detailed and typed lab report** (by individual to meet state requirements). The report should be in the Standard Physics Lab Report Format that you received at the beginning of the year.

Design an Experiment to Determine the Acceleration Due to Gravity
Lab Report Write-up

Your Lab Report should be written-up in the following format on a sheet of lined notebook paper. List the format and complete it according to the specifics of your lab. Each group member needs to write their own report. Do not make one report and copy it.

I. **Heading**: Name (left corner) and Group members (right corner)

II. **Title**: Make your own title for this experiment

III. **Purpose**: What is the purpose of conducting this experiment?

IV. **Equipment:** List ***all*** equipment that was used in your experiment.

V. **Procedures**: Accurately describe all of the procedures of your lab. Be as specific as possible, including listing of any graphs used on the computer and graphing tools used to interpret your results. You need to run the experiment at least three times to reduce the amount of error in the experiment. This should be at least ¾ of a page in length.

VI. **Results**: This section will include a table that was created using a ruler (make it very neat) or the table function if the lab is being typed. Include the data from three different trials and all other variables that were measured in the table. An example is listed below. Also include all equations used and how they were solved for acceleration. Plug in numbers, include units all numbers and circle your final answers.

Table example

	Trial #1	Trial #2	Trial #3
Initial Velocity (V_i)			
Final Velocity (V_f)			
Initial Time (t_i)			
Final Time (t_f)			
Distance (d)			
Acceleration (a)			

VII. **Conclusion**: State your results for each of the trials and show a percent error for each trial. The accepted value for gravity is $g = 9.8\ m/s^2$. State at least three sources of error.