

Acceleration of Gravity

Name _____ Date _____

Title:

The acceleration of gravity.

Purpose:

To experimentally find the acceleration of gravity, and compare it to the accepted value of 9.8 m/s^2 .

Materials & Procedure:

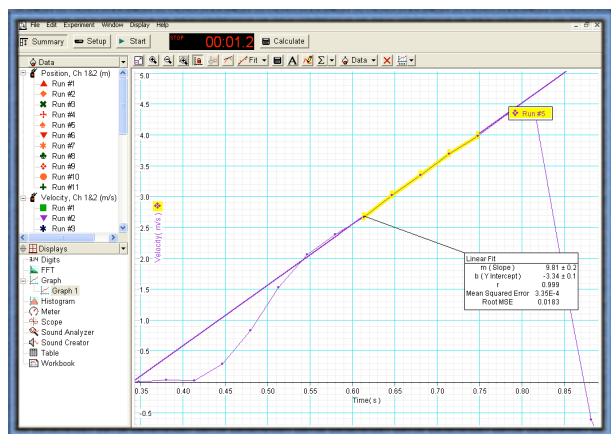


In this experiment, you may use one of two accepted methods. The first, is to use the **motion sensor** and have it graph the position of a falling object. If you choose this method, you must decide which object to drop as well as how far to allow it to fall. The second method is to use a **photogate** and picket fence combination. This method simplifies your decisions, however it only records a few data points.

You and your partners must **write** a complete list of all materials used as well as all major procedure steps. This list must be complete enough so that another student could follow the procedure and get the same results.

You and your partners will probably need to do several **trial** runs before you are satisfied with your graph. Do not delete these practice trials.

Data:



Capture the screen for one of your good values and include this in your lab report.

The data section of your lab should also include **qualitative observations**. This might include the reason for skipping a single trial that did not work. If you have changed your procedure in the middle of the experiment, observations would also include the reasons for this decision.

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Calculations:

When you select linear fit from the options in data studio, the computer will do the calculation of slope for you. Because this is an interpretation of data, this result still belongs in the calculations section of your report. For the data table, record the slope of a linear fit for five consecutive trials.

Calculate the average result from your five trials as well as a percent error for your average.

<i>Actual Trial Number</i>	<i>Slope of a linear fit</i>
<i>Average Result</i>	
<i>Percent Error</i>	

Conclusions:

In the first paragraph of your conclusion, discuss the possible sources for error in your experiment. Do not invent errors that did not occur.

In the second paragraph of your conclusion, discuss possible applications for the experimental methods used in this lab.