

Free Fall

As you work through the steps in the lab procedure, record your experimental values and the results on this worksheet. Use the exact values you record for your data to make later calculations.

Make sure to read the instructions before beginning to make sure you're doing this correctly!

Initial Drop—Data and Prediction

Record the height for your initial drop.

Using the equations of uniformly accelerated motion, what do you *predict* the fall time should be?

Record the *measured* fall time.

Series of Drops–Data

Record your height and fall time measurements below.

See the instructions for an important note about these values.

Enter your data into the table starting with the *largest* height value and going in order of decreasing height. Record your data from the previous part in the top row. (Do not include units in your answers.)

Table 1

Height (m)	Fall Time (s)

Calculations and Analysis

What is your experimental value for g ? (See Linear Regression if you need help with this section.)

What is the percent error in the experimental value of g ?

If you did not get an exact value of 9.81 m/s^2 for g , what factors might have contributed to the error? Does this account for your difference (as in, would the factors you identify make your calculated value of g larger or smaller than it actually is, and is that consistent with what you measured)?