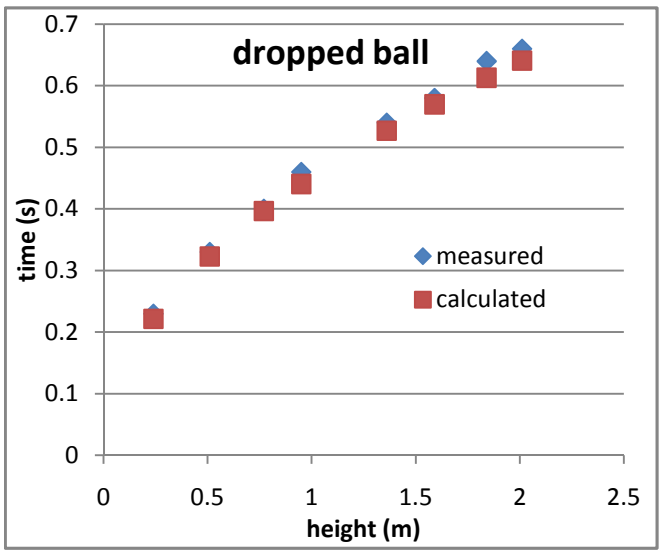
Sample worksheet for a dropped ball experiment

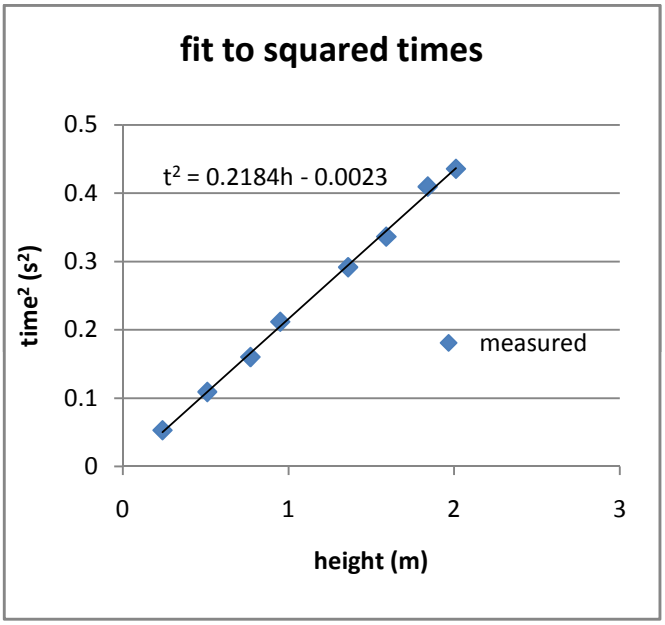
height	time	calculated	time^2
0.24	0.23	0.221	0.0529
0.51	0.33	0.323	0.1089
0.77	0.4	0.396	0.16
0.95	0.46	0.440	0.2116
1.36	0.54	0.527	0.2916
1.59	0.58	0.570	0.3364
1.84	0.64	0.613	0.4096
2.01	0.66	0.640	0.4356



Steps to construct worksheet:

1. Enter data in columns A and B
2. insert chart (scatter)
3. Use Layout tab to label axes
4. Enter =sqrt(2*A2/9.8) in cell C2
5. select data, add series.
6. Enter =B2^2 in cell D2
7. Copy C2, select C3:C9, paste
8. Insert chart. Select col. A, C.
9. format data series: no line
10. Add trendline, display eqn.

Find g via slope = 2/g.
Find % error in g (format number %)



expected g:	9.8	m/s^2
slope:	0.2184	m/s^2
measured g:	9.16	m/s^2
% error	-6.56%	

The labels and equation can be edited to improve formatting.
Note that superscript can be selected under "fonts".
Format cell - number can be used to set a reasonable number of decimal places in numbers.

We expected the acceleration of gravity to be 9.8 m/s2 and measured 9.16 m/s2, giving an error of 6.6%. This error is greater than can be explained easily from the precision of our measurements, which we think were accurate to at least 2%. Also, the error appears to be systematic, increasing with greater heights.

The main source of error was probably air resistance, which was not considered in our analysis. Air resistance would act to decrease the acceleration, causing an underestimate of g, which is what we found. It is not unreasonable to expect that air resistance could be 6% of the force of gravity, which would give a good explanation of the results found.