This activity is going to be used for several different purposes. The first is to support the material that has been introduced from the Chapter covering velocity, acceleration and Galileo's Laws. We have already introduced the concepts and definitions, but now we will explore them in a more hands-on manner. The information gathered here will be analyzed to determing if the concepts from the text hold true in our laboratory settings.

Secondly, once we have completed this lab, calculated the data, graphed the data, and then answered the questions, we will perform the same lab but this time useing the Vernier Technology available to the class. We will then discuss the pros and cons of each method, and determine which method gives us more usable reluts. Student feedback will also be collected to determine which is easier to use and more fun for the students.

Students will use a similar Excel spreadsheet as this to calculate their results. They will perform the lab, record their data, then they will then use their Excel spreadsheet. Since this is an example, I will post this for the class to see before we begin the lab, and they will use this as a template for their own spreadsheet.

They lab instructs them to set up a ramp. The ramp will be used at to roll three different balls down. Each ball will have a different weight. Each ball will be released at the top of the ramp and the time and distance down the ramp will be recorded. There will be 5 trials of each. This will be enough data to comlete the lab and graph the results.

NOTE: These numbers are made up so the calculations can be seen. No idea if they are close to real values or not.

Galileo's Uniform Acceleration

TRIAL #1

Small Ball

Distance (m): 2.05

		VELOCITY (m/s)	ACCELERATION (M/S^2)
Time (s):	2.30	0.89130	2.58049
	2.25	0.91111	2.46951
	2.36	0.86864	2.71688
	2.41	0.85062	2.83322
	2.28	0.89912	2.53580

AVERAGE VELOCITY (m/s):	0.88416	AVERAGE ACCELERATION (m/s^2)	2.62718

TRIAL #2

Medium Ball

Distance (m): 1.72

		VELOCITY (m/s)	ACCELERATION (M/S^2)
Time (s):	2.08	0.82692	2.51535
	2.11	0.81517	2.58843
	2.11	0.81517	2.58843
	2.09	0.82297	2.53959
	2.21	0.77828	2.83959

AVERAGE VELOCITY (m/s): 0.81170

AVERAGE ACCELERATION (m/s^2) 2.61428

TRIAL #3

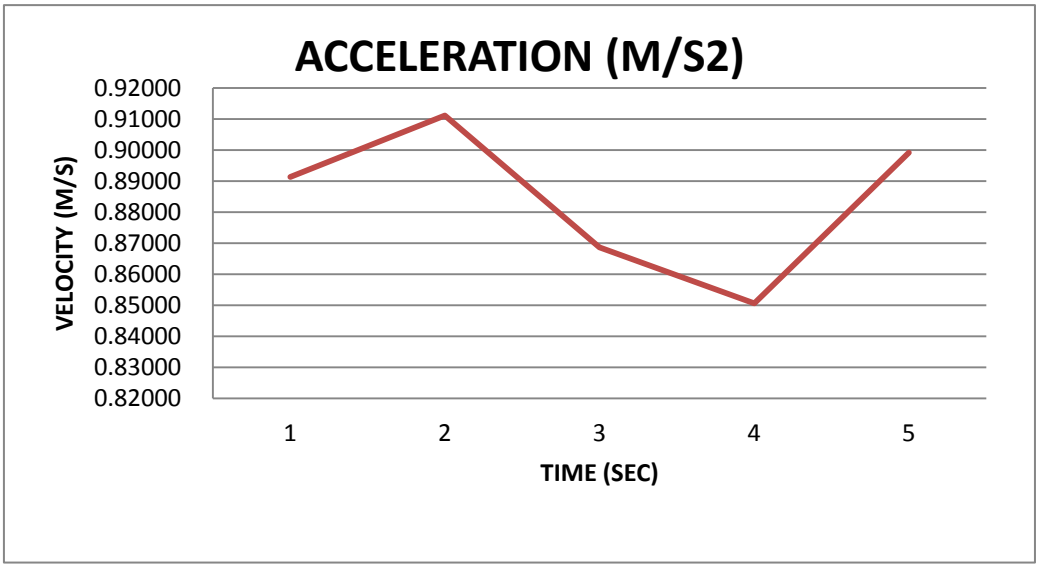
Large Ball

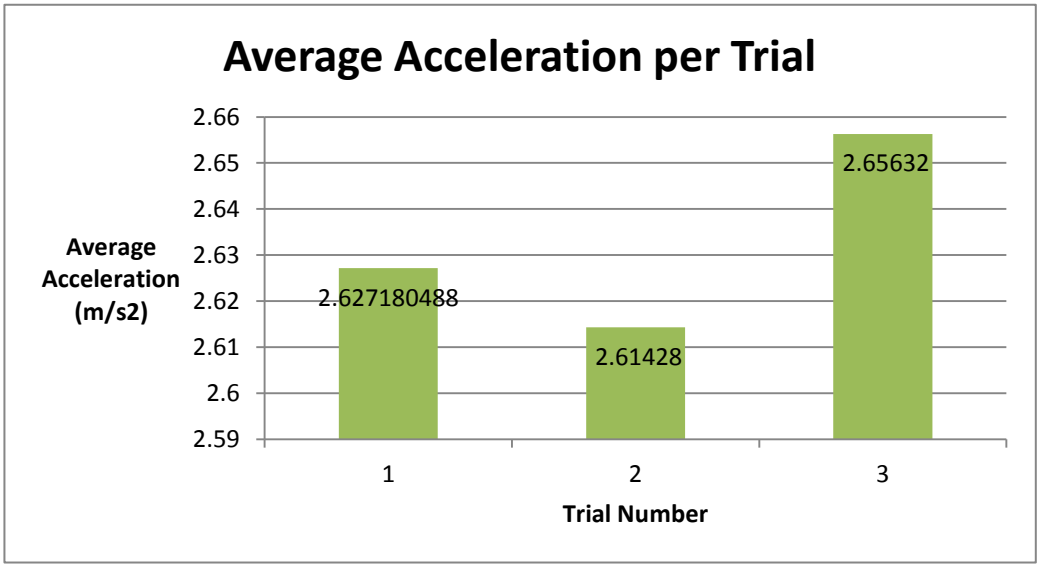
Distance (m): 1.45

		VELOCITY (m/s)	ACCELERATION (M/S^2)
Time (s):	1.81	0.80110	2.25938
	1.88	0.77128	2.89140
	1.85	0.78378	2.79986
	1.82	0.79670	2.70979
	1.79	0.81006	2.62119

AVERAGE VELOCITY (m/s): 0.79258

AVERAGE ACCELERATION (m/s^2) 2.65632


ACCELERATION (M/S2)
VELOCITY (M/S)
0.92000
0.91000
0.90000
0.89000
0.88000
0.87000
0.86000
0.85000
0.84000
0.83000
0.82000
1
2
3
4
5
TIME (SEC)


Average Acceleration per Trial
Average Acceleration (m/s2)
2.66
2.65
2.64
2.63
2.62
2.61
2.6
2.59
2.627180488
2.61428
2.65632
1
2
3
Trial Number