

LR Lab 5

Introduction: In this lab each group was to find if there is a relationship between the extensions of the elastic band and force on the elastic band?

Equipment:

1. Marbles
2. Styrofoam cup
3. Yarn
4. Ruler
5. elastic band

Procedure:

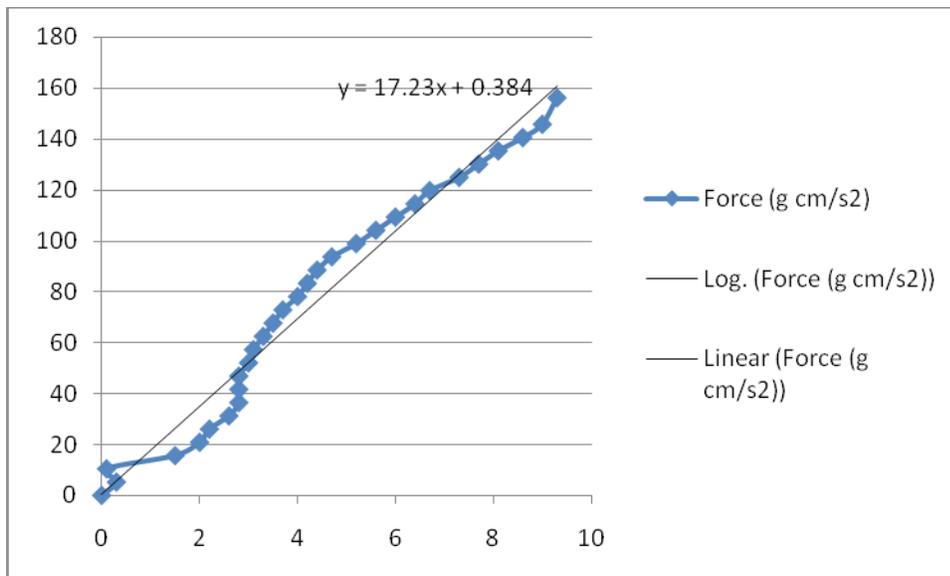
In this lab we were group into three and my group mates were Monalisa and Aileen. Aileen was the recorder, Monalisa was the one adding marbles in the cup, and I was the one steadying the cup and measure where the cup reached when the marbles were added in. Each team started adding the marbles in the cup since the Styrofoam were already hanging and set up. Our group only measured the mass of the empty cup, and the marbles then subtracted the mass of the cup to find out the mass of each marble. Then we started adding the marbles one by one in the Styrofoam hanging.

Data Table:

Displacement or distance (cm)	Force (g cm/s ²)
0	0
0.3	5.2
0.1	10.4
1.5	15.6
2	20.8
2.2	26
2.6	31.2
2.8	36.4
2.8	41.6

Displacement or distance (cm)	Force (g cm/s ²)
2.8	46.8
3	52
3.1	57.2
3.3	62.4
3.5	67.6
3.7	72.8
4	78
4.2	83.2
4.4	88.4
4.7	93.6
5.2	98.8
5.6	104
6	109.2
6.4	114.4
6.7	119.6
7.3	124.8
7.7	130
8.1	135.2
8.6	140.4
9	145.6
9.3	156

Chart Data:



Analysis:

1. The relationship between the between the extensions of the elastic band and force on the elastic band is not linear.
2. The extensions of the elastic band keep had more force as the marbles keep adding.
3. The graph is not reasonably linear.
4. The slope is 17.32
5. The y-intercept is .384

Conclusion:

The force of the marbles to the elastic band as the marbles keep adding, the predictions of the distance can be reliable. To the elastic band is not linear elastic. The force went through the elastic band as the marbles keep adding up. The more mass or marbles added to the Styrofoam, the more force occurred. The purpose of this activity or Hook's law of elasticity is the determine the relationship of the force applied to a spring and the distance that the spring is stretched.