

Lab Procedure Hooke's Law: The Calculation of k

This is only a procedure sheet. The ENTIRE lab must be typed up including materials, procedures and data

Procedure:

- Hang spring
- Measure length of spring at rest- measure from the bottom of the hanger to the bottom coil ("L")
- Hang 1 kilograms of mass from the spring.
- Measure the length of the stretched spring from the hanger to the bottom coil ("stretch")
- Calculate the length of elongation (x) by subtracting L from stretch.
- Enter your data into a chart starting at the bottom (since you started with the highest mass)
- Reduce the mass of the weights by 100g.
- Repeat your measurements.
- Continue removing mass until you have no more mass.
- Repeat the entire procedure for the rubber band.

(note about the rubber band: to get the initial length you will need to flatten the band.)

Make a data chart for each spring and the rubber band (This is a sample):

Length of spring
"L":

mass (kg)	Weight (Force) use 9.81m/s^2 (N)	x elongation (cm)	x elongation (m)
.1			
.2			
.....			
1.0			

Make one graph with the data from only the spring:
Use the graph to calculate k : The slope of the line will be equal to k .

F (N)

Graph 1:
Spring

Make a second graph for the rubber band.

Type up the lab including

- a good conclusion
- be sure to include discussion of k and PE.
- If you include this instruction sheet you will not need to include a procedure.

F (N)

x (m)

Graph 2:
Rubber Band

x (m)