

### Hooke's Law Lab

1. We are interested in the relationship between force on a spring and the distance it stretches.
2. Go to [www.andrews.edu/~rwright/labs/](http://www.andrews.edu/~rwright/labs/) and look at the first photo. Notice a mass is stretching the spring. A pointer is measuring the position on a meterstick.
3. Record the position of the pointer and the force stretching the spring in the table (don't forget to change kg to N).
4. Look at the other photos and record the positions and forces in the table.
5. Using Vernier's Graphical Analysis or similar app, create a scatter plot of the position (x-axis) vs force (y-axis).
6. What shape is the graph? \_\_\_\_\_
7. Find the appropriate regression? \_\_\_\_\_
8. Compare your regression to  $F = kx$ . What is your value of  $k$ ? \_\_\_\_\_
9. What is the meaning of  $k$ . (Hint: find the units of  $k$ .) \_\_\_\_\_
10. Your regression has a y-intercept. What is the meaning of the y-intercept? \_\_\_\_\_

Position (m)	Force (N)