

Physics 2010 -- Fall 2006 Laboratory 3: Springs and Things

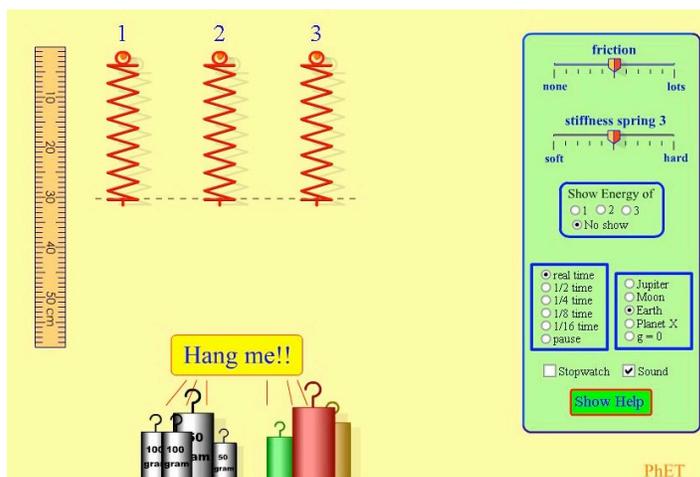
NAME _____
Section Day (circle): M Tu W Th F
Section Time: 8a 10a 12p 2p 4p
TA Name: _____

There is no prelab with this exercise.

Part A: Masses and Springs

This is a "virtual lab". We will do an experiment using software which can be found at the PhET simulations page: <http://phet.colorado.edu>

Find the sim "Masses and Springs" and run it. You should see this:



0) Play with this simulation for a while. Try to figure out what all the controls do.

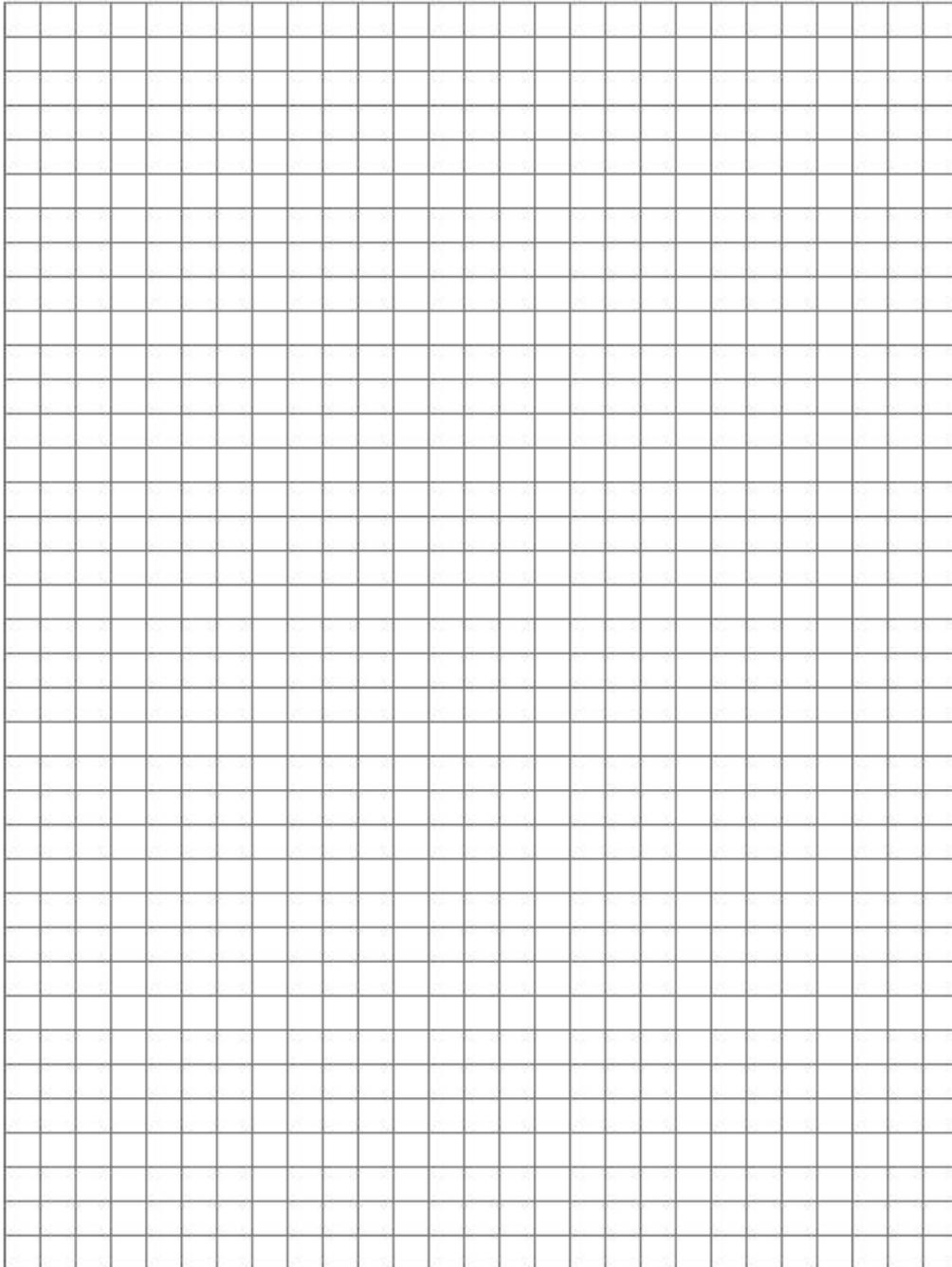
1) Figure out a way to determine the spring constant k of **Spring 1**, and explain your reasoning.

Hints: Recall that the spring constant k is defined by Hooke's Law $|\mathbf{F}_{\text{spring}}| = k x$, where x is the amount of stretch of the spring. Also, You can "zoom in" by right-clicking with the mouse. The ruler can be moved by left-clicking and drag.

2) Make a graph of stretch x vs. mass hung. (Use the graph paper on next page). How could the spring constant k be determined this graph?

3) Using your results from part 1, determine the masses of the three colored unknown masses. Explain what reasoning you used to find the mass.

4) Determine the acceleration due to gravity on Planet X. Explain how you found the value.



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