

Lesson Title:	Hooke's Law (Hands-on and PhET sim)
AP Objective(s):	<ul style="list-style-type: none"> • Understand the process of designing experiments so they can describe procedures to be used, controls and measurements. • Observe and measure real phenomena using a variety of instruments. • Analyze data to display it in graphical form, fit lines to curves. • Calculate a spring constant using Hooke's Law from a hands-on and computer based experiment.

AGENDA	KEY POINTS
1. Hands-on 2. PhET Sim 3. Comparisons	<p>Hooke's Law states</p> $F = -kx$ <p>Where F is the applied force, k is the spring constant and x is the displacement from the equilibrium position.</p>

Time	Learning Activity
120	<p>This lab takes two days.</p> <p>The first day, students conduct a hands-on investigation of Hooke's Law using rubber bands and springs. Using Excel, they will graph their data and determine the spring constant for their rubber band and spring.</p> <p>The second day, students repeat their experiment using the PhET simulation. The end of class is spent discussion the advantages/disadvantages of using a computer simulation and comparing accuracy/precision of their data from both experiments.</p>