

Lab 1: Damped Oscillations, Part One

You have been asked to design a metronome for a famous pianist, and you have decided to use a spring with a small mass attached, which will bounce up and down with the beat. Now, this metronome will only be useful if the *period* (or the time it takes for one full cycle) of an oscillation stays the same over a long enough time interval (at least for a three minute tune). When you let the spring oscillate for a long period of time, you observe that the amplitude gradually gets smaller. What about the period?



Question: Does the period of a spring stay the same over time?

This week you will focus on **data-collecting**. Next week, we will do a lot more with your data and try to answer some more questions about your metronome, so use your time wisely and take as much data as time allows.

Timetable

I. Introduction:	10 min	Whole class
II. Brainstorming and Planning:	10 min	Groups of 4
III. Carrying out the Experiment:	40 min	Groups of 4
IV. Class Discussion:	30 min	Whole Class
V. Evaluate and Reconsider:	15 min	Groups of 4