

## COMPILATION: Unit 7 - Energy dissipation lab

Date: Wed, 14 Mar 2001  
From: Andrew Kartsounes <kartsoun@HARTLAND.K12.MI.US>  
Subject: Ediss Lab

Does anyone do a lab to construct the math model for Ediss due to friction? I have labs for Ee, Ek, and Eg, so the students already know those. Assume I have all the best equipment in the world. (I don't, but I don't want to hold back any ideas!)

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Date: Wed, 14 Mar 2001  
From: Betsy Barnard <bbarnard@FACSTAFF.WISC.EDU>  
Subject: Re: Ediss Lab

This was developed by Dave Braunschweig and others a couple summers ago, and I just did it yesterday:

Use elastic energy of a rubber band stretched across a track to propel a cart (with friction pad) various distances on the Pasco track. (You've previously calibrated the rubber band by taking the integral of force vs. stretch.

Assuming elastic energy is completely dissipated to the track (a little is dissipated in the stretch) construct a graph of Ediss vs. displacement of the cart. Slope is friction force, which is confirmed by pushing the cart at constant velocity using a force probe.

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