PHYSICS IA

Topic: Hooke's Law
Question: Does Hooke's' Law apply to elastic bands?

Dependent Variable: The extension of the elastic bands
Independent Variable: The force applied on the elastic band

Introduction:

This is an experiment to see if elastic bands follow the principles of Hooke's law. Hooke's Law is concept that was proposed by physicist Robert Hooke that states that for relatively small deformations in an object the length of its extension is proportionate to the deforming force. This experiment is commonly proven with common springs. A force mass is attached to the spring and extends the spring in a manner that is proportional to its mass. The equation to prove the effect of Hooke's law is :

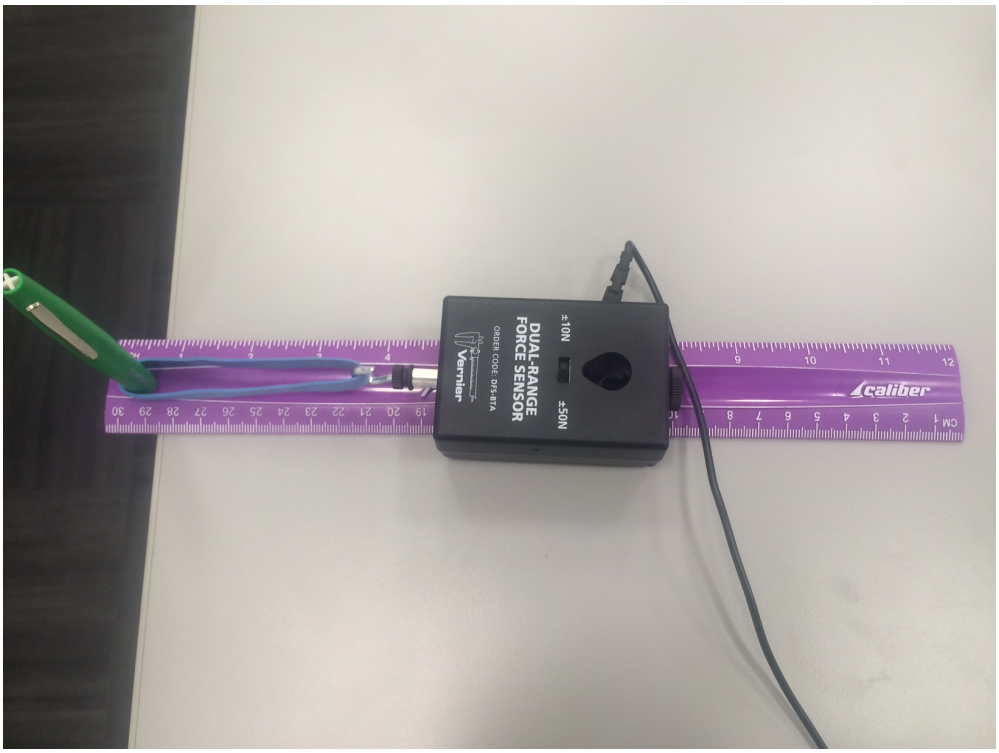
$$F = -kx$$

Where *F* represents the force exerted on the object, *k* is a constant value and *x* is the displacement.

This experiment is going to inquire as to whether elastic bands act like springs and when the elastic limit of the bands are reached. Elastic bands are an essential part of everyday casual life.

Materials:

A force meter
Elastic bands 0.75 cm thick and 5.5 cm diameter
Different Masses
Laptop
Logger lite software
Ruler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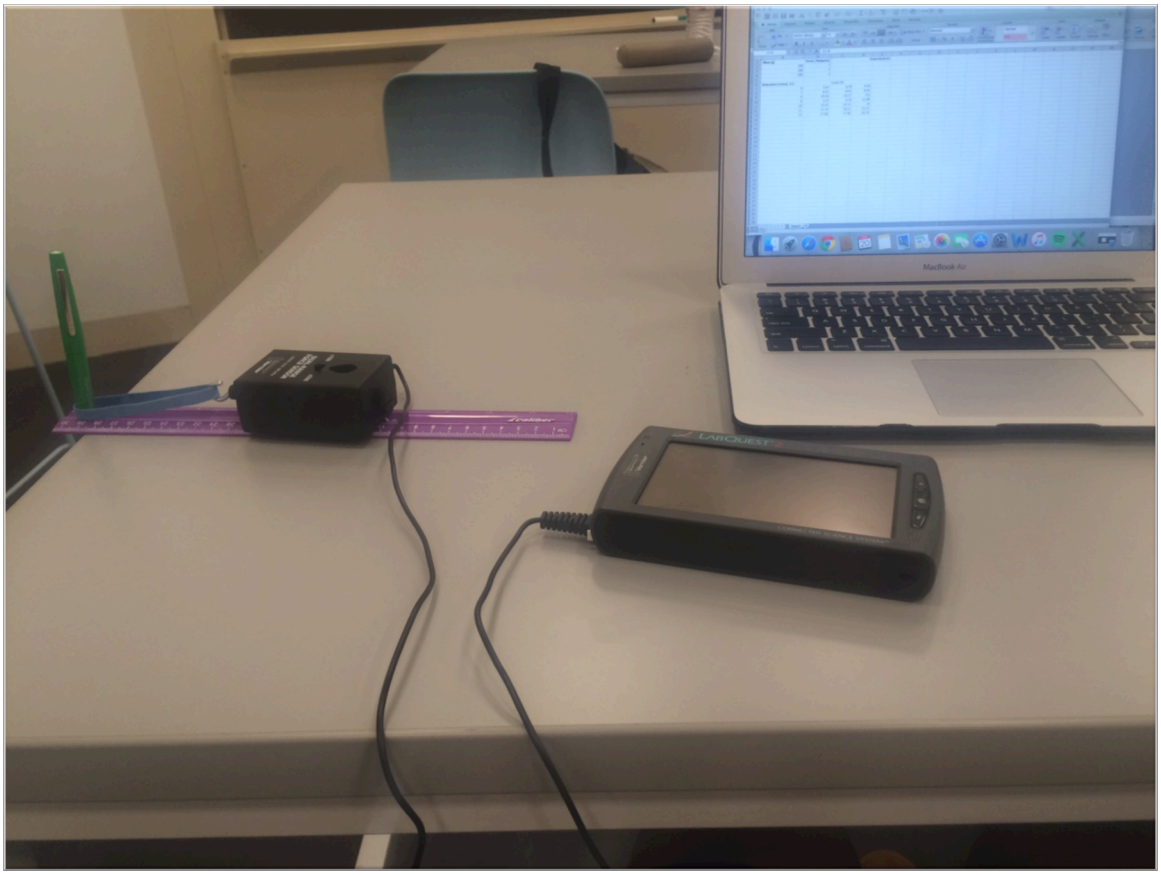
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