

SPRING CONSTANT LAB HOOKE'S LAW

OBJECTIVE

To determine the spring constant (k) of an elastic substance (spring, rubber band, etc) to use to calculate the Elastic Potential Energy

PROCEDURE

1. Attach a spring to the apparatus as instructed along with the mass holder.
2. Adjust the indicator to zero on the scale or measure in meters from a fixed point (table top) to bottom of mass holder. Record this as Initial Length (L_i)
3. Place a known mass on the mass holder and record the new distance either by the indicator or measuring up from the table top. Record as Final Length (L_f)
4. Calculate the force created by the mass ($F = m g$ where m is in kg and $g = 9.8 \text{ m/s}^2$) Record this as Force (F).
5. Subtract the two lengths $L_f - L_i$ and record as Δx in meters.
6. Calculate the spring constant for that particular spring or elastic piece by

Using this formula. $F = k \Delta x$ solve for k ; $k = F / \Delta x$

The unit for k will be N / m (newtons per meter)

Data Table

Elastic piece	L_f	L_i	Δx	mass	F	k