Hooke's Law Lab 1

Spring 1

Spring constant k: The stiffness of a spring. $g = 9.8\ N/k$, use kg

$F_g = m \cdot g$

Force required to stretch (N)	Length of stretch (m)	$\frac{\text{Force}}{\text{unit length of stretch}}$ (N/m)

- The spring constant is the ratio of the *force* to *the length of stretch*. This ratio should be a "constant". Is it relatively constant? What is the spring constant for this spring?

- How much force would it take to stretch the spring to:

a) 1 meter?

b) 2 meters?

c) 5 centimeters?

- Graph Force on the y-axis and ΔX on the x-axis.
  1. What is the shape and direction of the scatterplot?
- Draw a best fit line through the data and find the slope.
  2. What is the numeric value and practical significance of the slope?

Hooke's Law Lab 1

Spring 2

Spring constant k: The stiffness of a spring. $g = 9.8\ N/k$, use kg

$F_g = m \cdot g$

Force required to stretch (N)	Length of stretch (m)	$\frac{\text{Force}}{\text{unit length of stretch}}$ (N/m)

- The spring constant is the ratio of the *force* to *the length of stretch*. This ratio should be a "constant". Is it relatively constant? What is the spring constant for this spring?

- How much force would it take to stretch the spring to:

a) 1 meter?

b) 2 meters?

c) 5 centimeters?

- Graph Force on the y-axis and ΔX on the x-axis.
  1. What is the shape and direction of the scatterplot?
- Draw a best fit line through the data and find the slope.
  2. What is the numeric value and practical significance of the slope?