

ESTM Transfer Lab 1

- Whiteboard
 - Data (including k and mass)
 - Graph \rightarrow Energy vs. maximum velocity
 - Function of best fit (and equation)

• Variables that we can change:

- mass

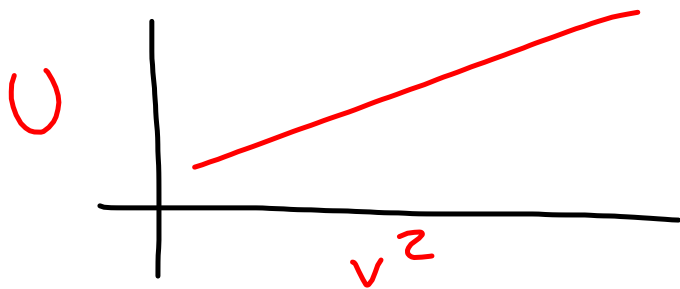
- Δx

- k

• Conservation of Energy

$$U_s \rightarrow K$$

$$\frac{1}{2} k (\Delta x)^2 = \frac{1}{2} m v^2$$



$$\text{slope} = \left[\frac{\text{J}}{\frac{\text{m}^2}{\text{s}^2}} \right] = \left[\frac{\text{N}\cdot\text{m}}{\frac{\text{m}^2}{\text{s}^2}} \right]$$

$$= \left[\frac{\text{kg} \frac{\cancel{\text{m}^2}}{\text{s}^2}}{\frac{\text{m}^2}{\text{s}^2}} \right]$$

$$= [\text{kg}]$$

$$\text{slope} = \frac{1}{2}m$$