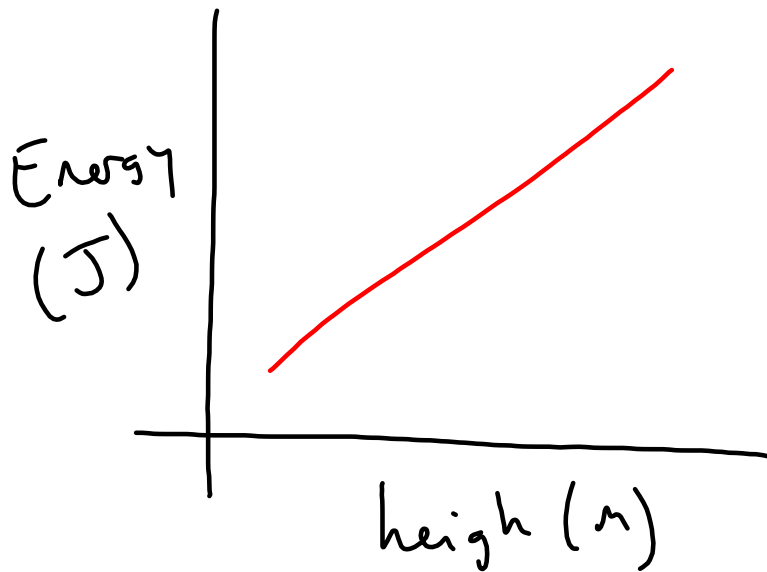


ESTM Transfer Lab 2

- Compress spring to cert energy
- Measure height up ramp
- Constants:
 - mass
 - $k = 300 \text{ N/m}$
- Graph \rightarrow Energy: y-axis
height up ramp: x-axis
$$E_{\text{el}} = \frac{1}{2}k(\Delta x)^2$$
- Function of best fit and equation



What does
the slope
mean?

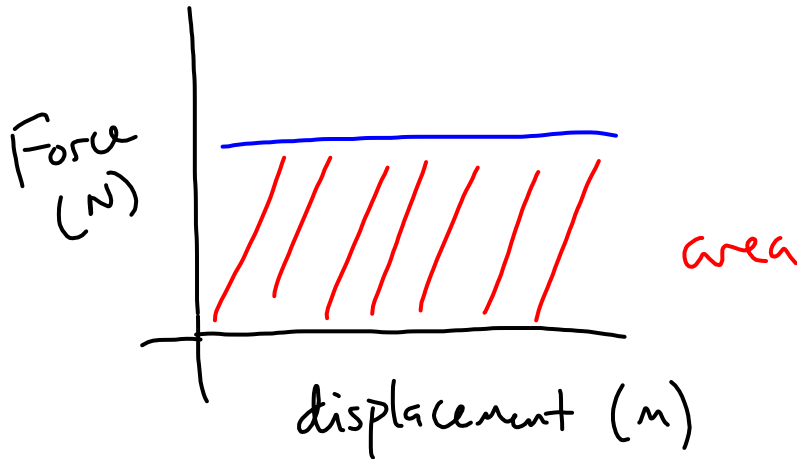
$$\text{slope} = \left[\frac{\text{J}}{\text{m}} \right] = \left[\frac{\text{kg} \cdot \frac{\text{m}^2}{\text{s}^2}}{\text{m}} \right]$$

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

slope is force

$$\text{slope} = \frac{E}{h} = F_g \quad F_g = mg$$

$$E_g = mgh$$



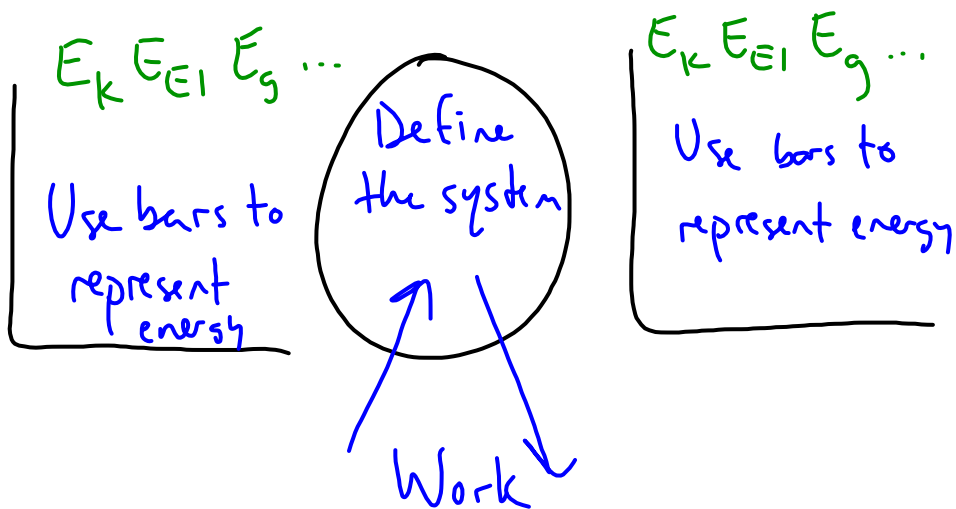
$$\text{Area} = F (\Delta x)$$

$$\text{Work} = F (\Delta x)$$

(J)

- 1st Law of Thermodynamics

$$E_{\text{initial}} + W = E_{\text{final}}$$



- Pie Charts:

- Energy $\rightarrow E_K, E_g, E_{Th}, E_{EI}$

- Size of pie is determined
by initial energy