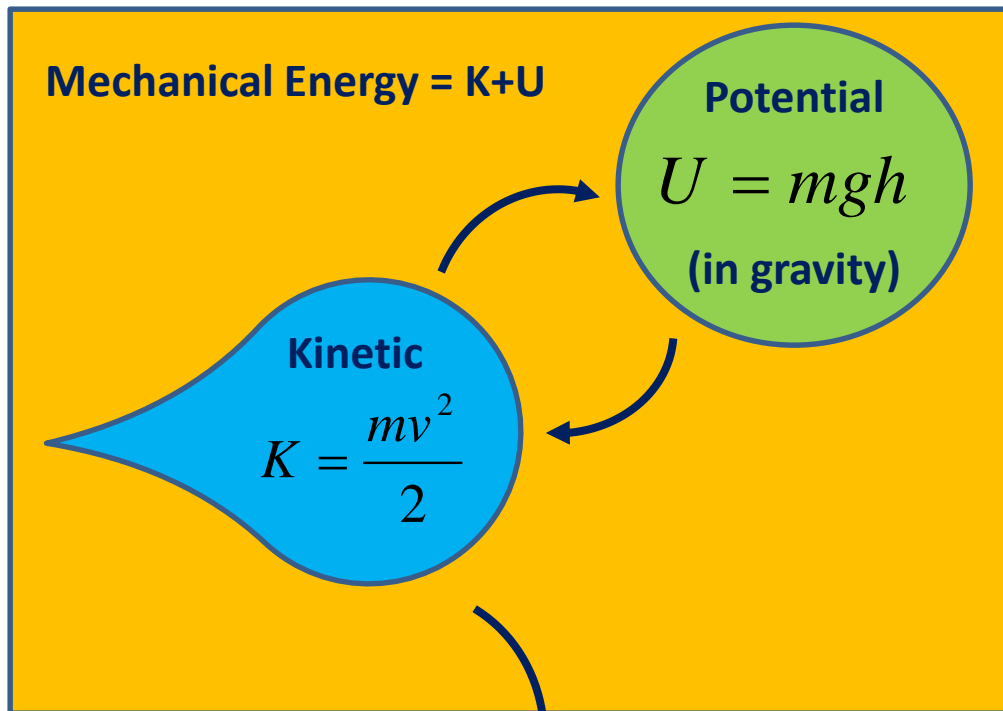


# Mechanical Energy and Work



**Change in Energy = Work**

$$W = F\Delta x$$

Unit of Energy & Work is called Joule (J)

$$1J = 1N \cdot m = 1 \frac{kg \cdot m^2}{s^2}$$

# Homework

Find Energy in Joules, for the following cases:

- a) Kinetic energy of yourself running as fast as you can.
- b) Potential energy of yourself after climbing the mount Everest.
- c) Minimal work you need to do to shoot an arrow of mass 50 g to the height 100m, with a bow.
- d) Kinetic energy of all molecules in 1 cubic meter of air. Assume them to have a typical speed about 500m/s. Density of air is  $1.2 \text{ kg/m}^3$ .