

Unit Development

distance

m

Distance covered in time

m/s velocity

$$v = d/t$$

Change velocity in time

m/s²

acceleration

$$a = \frac{v_f - v_i}{t}$$

acceleration moving mass

$\frac{kg \cdot m}{s^2}$

N

Newton

(Force)

(weight)

$$F = ma$$

$$(w = mg)$$



Apply a Force to move an object a Distance(work)

$$N \times m = J$$

Joule

(energy)

$$W = F \times d$$

$$(PE = mgh)$$

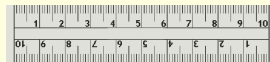
$$(KE = 1/2 m v^2)$$

Doing work for a period of time (Power)

$$J/s = \text{watt}$$

$$P = \frac{W}{t}$$

Base units

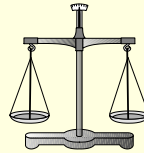


distance

m

mass

kg



Time

s

Volume

L



Amount of substance
mol

pick up book put on table .78m high
use. 1.56 J of energy acceleration is 1.54 m/s²

What is mass?

$$W = F \times d$$

$$F = m \cdot a$$

$$W = m \times a \times d$$

$$m = \frac{W}{a \times d}$$

$$m = \frac{1.56 \text{ J}}{1.54 \text{ m/s}^2 \cdot .78 \text{ m}}$$

~~kg m²/s²~~

.454 Kg/lb

105 ~~lb~~

.454 (Kg)
1 ~~lb~~