

Newton's 2nd Law:

- Newton's 1st: Overall (net) forces cause acceleration
- Newton's 2nd: Overall forces will cause an object to accelerate in the direction of the net force. Objects that have more mass will accelerate less for a given net force. (Things that are light are easier to accelerate)

Newton's 2nd Law:

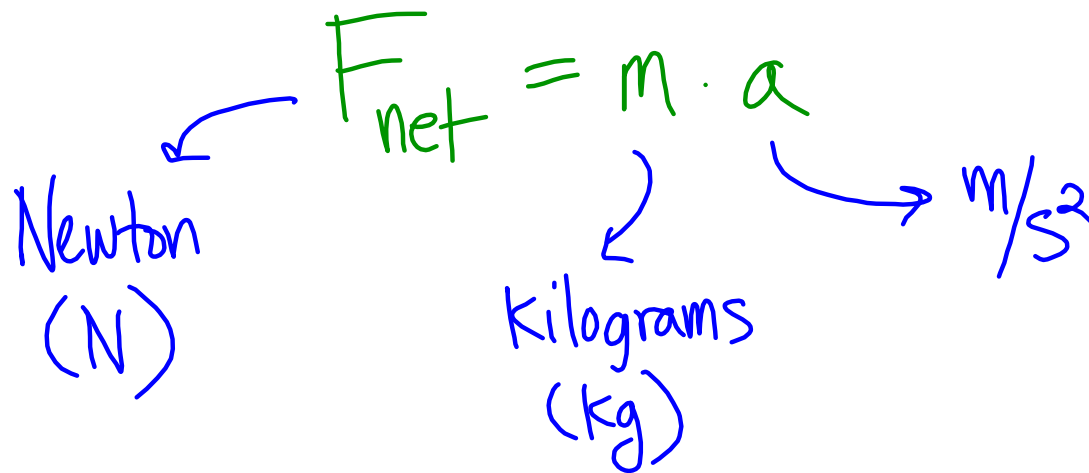
Net force on
an object = Object's
mass · Object's
acceleration

$$F_{\text{net}} = m \cdot a$$

Newton
(N)

Kilograms
(kg)

m/s²



If You Know Table for $F = m \cdot a$

If you know	You can find	By using	Units
m, a	F_{net}	$F_{\text{net}} = m \cdot a$	N + direction
F_{net}, m	a	$a = \frac{F_{\text{net}}}{m}$	$\frac{\text{m}}{\text{s}^2}$ + direction
F_{net}, a	m	$m = \frac{F_{\text{net}}}{a}$	kg

Snail pushed with an overall force of 6.2 N.
It has a mass of 0.2 kg. What is its acceleration?

① $F_{\text{net}} = 6.2 \text{ N}, m = 0.2 \text{ kg}$

② a

③ $a = \frac{F_{\text{net}}}{m}$

④ $a = \frac{6.2 \text{ N}}{0.2 \text{ kg}} = 31$

⑤ $a = 31 \frac{\text{m}}{\text{s}^2} \text{ up}$

Pulley:

