

Newton's 2nd Law

"When a net force acts on a body it will cause an acceleration of the body in the direction of the new force"

Example: If you push on a 15 kg object with a force of 50.0 N and friction is 20.0 N what will its acceleration rate be?

$F_n = ma$
 $F_n = \text{Push} - \text{stop}$
 $F_n = \text{pull}$

$f = 20\text{ N}$ $F = 50\text{ N}$

$F_n = F - f$
 $F_n = 50 - 20$
 $F_n = 30\text{ N}$

$F_n = ma$
 $a = \frac{F_n}{m} = \frac{30\text{ N}}{15\text{ kg}} = 2.0 \frac{\text{N}}{\text{kg}}$

units
 $F = ma$
 $1\text{ N} = 1\text{ kg} \times 1\text{ m/s}^2$
 $\frac{1\text{ N}}{\text{kg}} = 1 \frac{\text{m}}{\text{s}^2}$

Oct 17-8:59 AM