

Momentum Notes

1/6/2020

Momentum → describes an object's motion

↳ "pomentum"

$$p = mv$$

p = momentum ($\frac{\text{kgm}}{\text{s}}$ or Ns)

m = mass (kg)

v = velocity (m/s)

Impulse → change in momentum

↳ "Jimpulse"

$$J = Ft$$

J = Impulse (Ns)

F = Force (N)

t = time (s)

From Newton's 2nd law, $F = ma$

$$F = m \frac{\Delta v}{t}$$

multiply "t" by both sides

$$Ft = m\Delta v$$

↓
Impulse = change in momentum

Conservation of momentum

momentum is conserved through any type of collision. Elastic or inelastic.

total initial momentum = total final momentum

$$P_i = P_f$$

$$P_{Ai} + P_{Bi} = P_{Af} + P_{Bf}$$

$$m_{1i} v_{1i} + m_{2i} v_{2i} = m_{1f} v_{1f} + m_{2f} v_{2f}$$