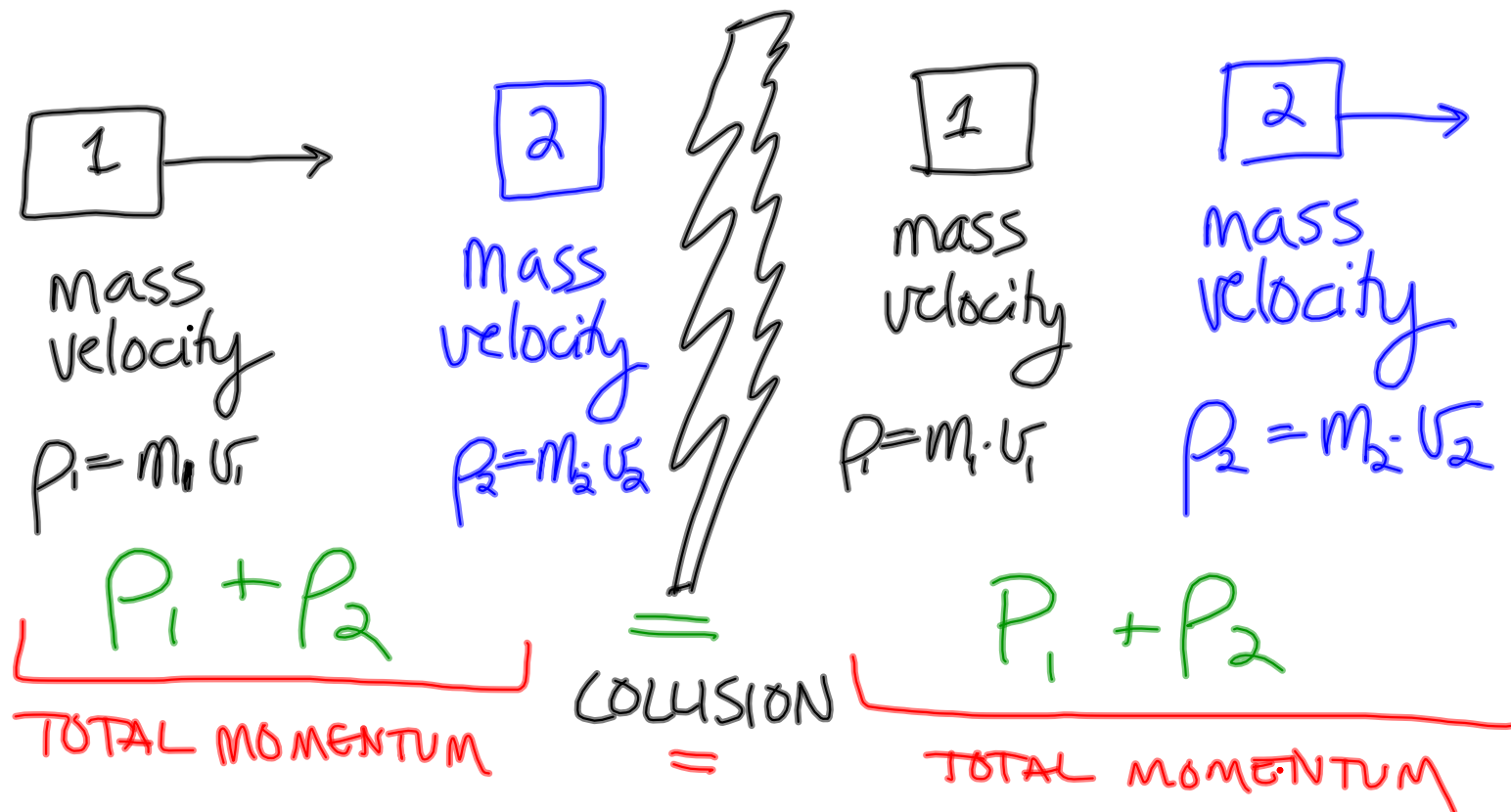
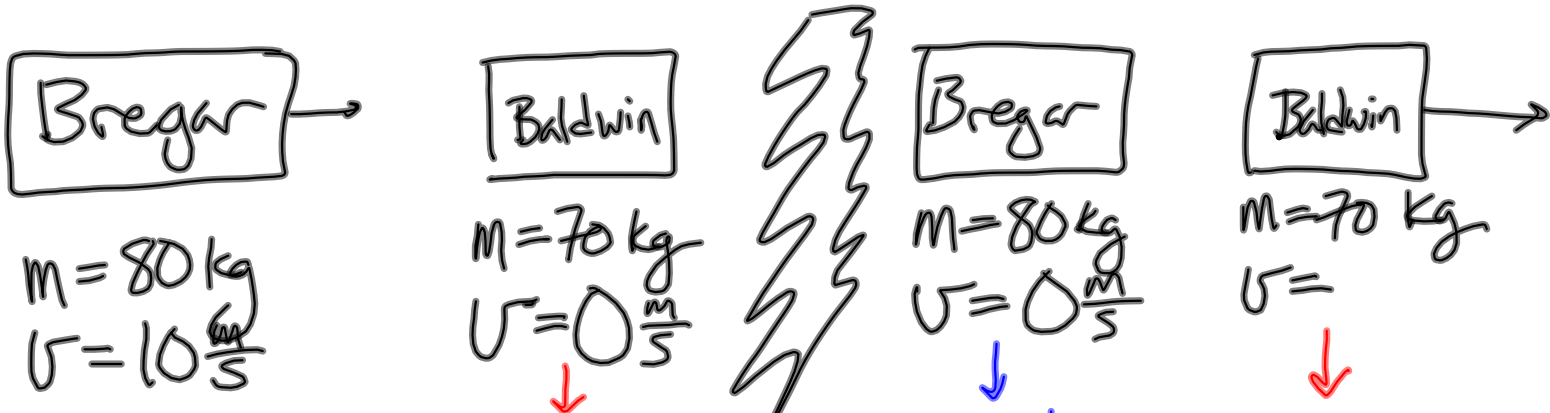


CONSERVATION OF MOMENTUM:

- In the universe, the total amount of momentum is constant
- If we build our momentumometers well, the momentum is conserved (it's always the same)

· The changes in motion that we see are due to transfers of momentum





Bregar \rightarrow Baldwin \rightarrow Bregar \rightarrow Baldwin \rightarrow

Bregar: $m = 80 \text{ kg}$, $v = 10 \frac{\text{m}}{\text{s}}$
 Baldwin: $m = 70 \text{ kg}$, $v = 0 \frac{\text{m}}{\text{s}}$
 Bregar: $m = 80 \text{ kg}$, $v = 0 \frac{\text{m}}{\text{s}}$
 Baldwin: $m = 70 \text{ kg}$, $v = ?$

Bregar: $p_1 = m_1 \cdot v_1$
 $p_1 = 80 \cdot 10$
 $p_1 = 800 \frac{\text{kg} \cdot \text{m}}{\text{s}}$

Baldwin: $p_2 = 0 \frac{\text{kg} \cdot \text{m}}{\text{s}}$

Bregar: $p_1 = 0 \frac{\text{kg} \cdot \text{m}}{\text{s}}$

Baldwin: $p_2 = m_2 \cdot v_2$
 $\frac{800 \frac{\text{kg} \cdot \text{m}}{\text{s}}}{70} = \frac{70 \text{ kg} \cdot v_2}{70}$

FIVE STEPS

$p_1 + p_2 =$
 $800 + 0 = 800 \frac{\text{kg} \cdot \text{m}}{\text{s}} = 800 \frac{\text{kg} \cdot \text{m}}{\text{s}}$

CONSERVATION OF MOMENTUM

$v_2 = 11.42 \frac{\text{m}}{\text{s}}$