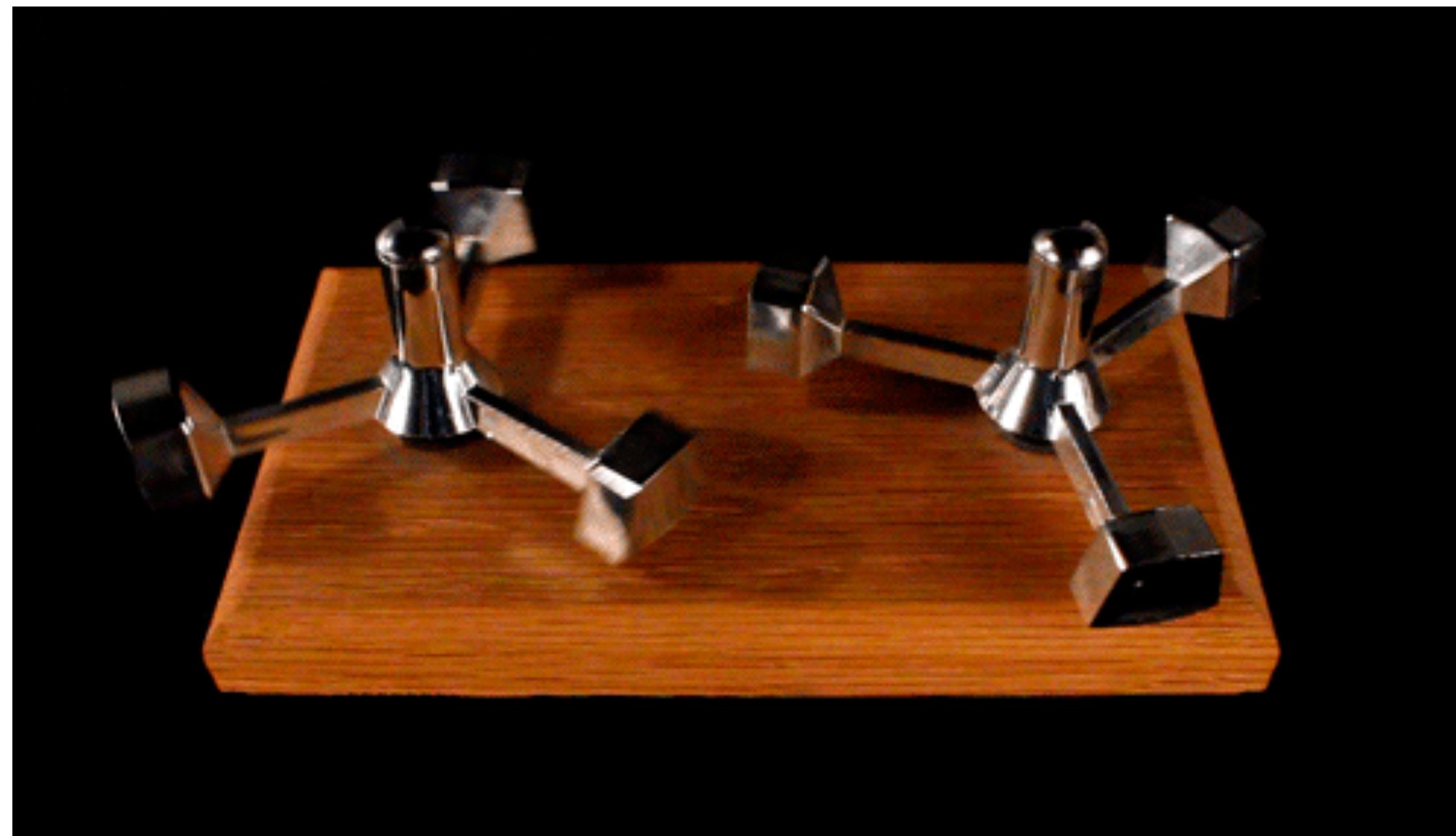


MOMENTUM

The word "MOMENTUM" is displayed in large, bold, black letters. Each letter is suspended from a thin grey string that originates from a small white circle at the top center of each letter. The letters are arranged horizontally, with a slight downward shadow cast below them, giving the impression of a physical object hanging from above.

MOMENTUM ON ONE AXIS

MOMENTUM



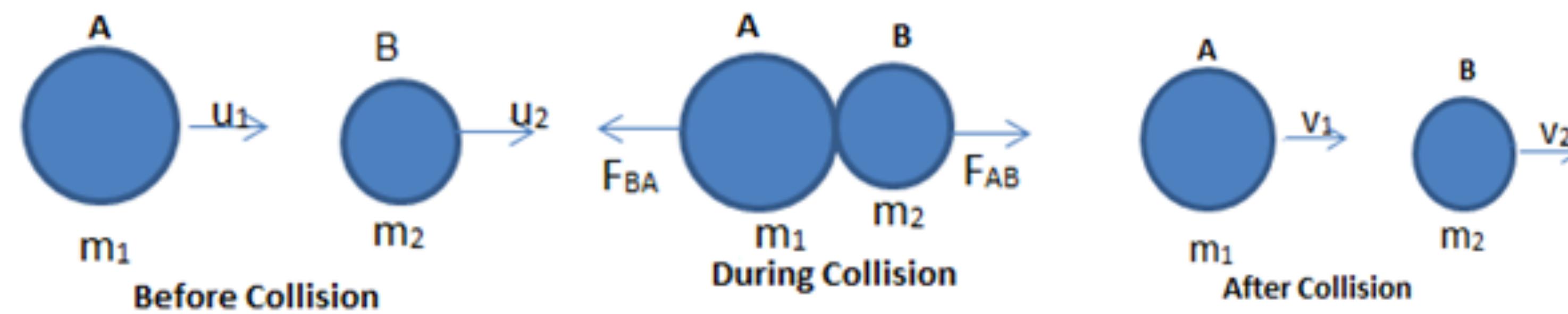
MOMENTUM

Product of **mass** and **velocity**

$$p = mv$$

p = momentum, m = mass, v = velocity

MOMENTUM



MOMENTUM

Conservation of Momentum

$$m_1 \mathbf{v}_{1,i} + m_2 \mathbf{v}_{2,i} = m_1 \mathbf{v}_{1,f} + m_2 \mathbf{v}_{2,f}$$

MOMENTUM

$$m_1 u_1 + m_2 u_2 = m_1 v_1 + m_2 v_2$$

$$\frac{1}{2}m_1 u_1^2 + \frac{1}{2}m_2 u_2^2 = \frac{1}{2}m_1 v_1^2 + \frac{1}{2}m_2 v_2^2 .$$

MOMENTUM

$$v_1 = \left(\frac{m_1 - m_2}{m_1 + m_2} \right) u_1 + \left(\frac{2m_2}{m_1 + m_2} \right) u_2$$
$$v_2 = \left(\frac{m_2 - m_1}{m_1 + m_2} \right) u_2 + \left(\frac{2m_1}{m_1 + m_2} \right) u_1$$