to move at the same speed in the same direction unless acted upon by an unbalanced force. Inertia & Mass Inertia & Mass of a bowling ball rolled down the road would eventually come to a stop. Friction is an unbalanced force that causes the ball to stop or slow down. Without friction, the ball would keep going.

Mass is the amount of matter in an object. A bowling ball has more mass than a tennis ball. The greater the mass of an object the greater its inertia.

Mass is the measurement of inertia.

4. **Conservation of Momentum**

Law of Conservation of Momentum

In a closed system, the vector sum of the momenta before and after an impact must be equal.

Before After

$m_1 v_1 + m_2 v_2 = m_1 v_1' + m_2 v_2'$

Internal and External Forces