

Newton's 3 Laws of Motion:

Newton's laws of motion are the basis of classical mechanics and describe how the motion of an object changes when acted on by a force.

First Law of Motion:

An object remains in a state of rest or uniform motion unless acted on by an unbalanced force/net external force

Ex. A book resting on a table will not move unless acted upon by some net force, like your hand pushing it along the table

Second Law of Motion:

The force acting on an object is equal to the mass of that object times its acceleration: $\vec{F} = m\vec{a}$

Ex. When the same force is applied, a small car will have a greater acceleration than a large transport truck because of their different masses

Third Law of Motion:

For every action force, there is a reaction force equal in magnitude and opposite in direction

Ex. If you push on the wall with 10 Newtons of force, the wall pushes back on you with 10 Newtons of force