

Newton's laws and their applications

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In physics Newton's three laws are the basis of the subject. All three are detailed on this page.

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Newton's Laws of Motion [\[edit\]](#)

Newton's laws have been widely accepted by the science community for the past century, in total there are three laws that affect the laws of motion.

Newton's First Law [\[edit\]](#)

His first law of motion is called the law of inertia, his law is;

"Every body perseveres in its state of being at rest or of moving uniformly straight forward, except insofar as it is compelled to change its state by force impressed."

The basis of this law means that if an object is not moving it will only move when a force is applied onto it, aswell as an object that is in motion will not change its velocity (accelerate) until a net force acts upon it.

Newton's Second Law [\[edit\]](#)

His second law is more notably named as the law of acceleration. His law is;

"The rate of change of momentum of a body is proportional to the resultant force acting on the body and is in the same direction."

This law means that the Force of the object moving will be equal to the opposing force such as air resistance. This is derived from the equation:

$$F = ma$$

(Where: F = Force, M = Mass, A = Acceleration)

Example

A skydiver jumps from a plane and accelerates until he reaches the highest velocity possible, when this happens his acceleration is equal to nothing, this happens when air resistance is equal to the downward force of the skydiver.

Newton's Third Law [\[edit\]](#)

Newtons third and final law is the law of reciprocal actions in which he says;

"All forces occur in pairs, and these two forces are equal in magnitude and opposite in direction."

This in simple terms is that to every action force there is an equal, but opposite, reaction force. For example if one presses on a wall a equal and opposite force is pushed back at them.

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