Definitions and Concepts for WJEC (Wales) Physics GCSE

# Topic 2.2: Newton's Laws

---

*Definitions in **bold** are for higher tier only*

*Definitions marked by '*' are for separate sciences only*

**Balanced Forces:** A resultant force of zero.

**Contact Force:** A force that acts on an object through physical contact.

**Inertia:** An object's tendency to continue moving at a constant velocity unless acted on by a resultant force.

**Inertial Mass:** A measure of how hard it is to change an object's velocity. It equals the ratio of force over acceleration.

**Newton Meter:** A device used to measure the magnitude of a force. It is commonly used to measure an object's weight.

**Newton:** The unit of force.

**Newton's First Law:** If a stationary object's resultant force is zero, the object will remain stationary. If a moving object's resultant force is zero, the object will continue to move at a constant velocity (same speed and direction).

**Newton's Second Law:** An object's acceleration is directly proportional to the resultant force acting on it, and inversely proportional to the object's mass.

**Newton's Third Law:** The forces that two objects exert on each other when they interact are equal and opposite.

**Resultant Force:** The single force that can replace all the individual forces acting on an object, and have the same effect.

**Terminal Speed:** The maximum speed an object can reach when falling through a fluid. It occurs when the resistive forces equal the object's weight.

**Weight:** The force acting on an object due to gravity. It is equal to the product of the object's mass and the gravitational field strength at its location.