

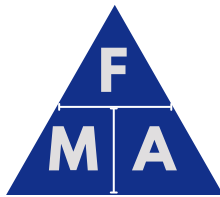
Newton's Three Laws of Motion

- 1. Law of Inertia
- 2. Law of Acceleration
- 3. Law of Action/Reaction

Second Law - The Law of Acceleration

A force upon an object causes it to accelerate according to the formula:

$$\text{Force (N)} = \text{Mass (Kg)} \times \text{Acceleration (m/s/s)}$$



First Law - The Law of Inertia

Inertia is the force required to change the state of motion. Unless acted upon by an external force, an object at rest remains at rest, or if in motion, it continues to move in a straight line with constant speed.



Third Law - The Law of Action/Reaction

For every action (force), there is an equal and opposite reaction



2.1. BIOMECHANICAL PRINCIPLES



Scalars

→ A scalar quantity describes a measurement in size or magnitude without taking into account direction.

Example - units for the equation
distance = speed x time

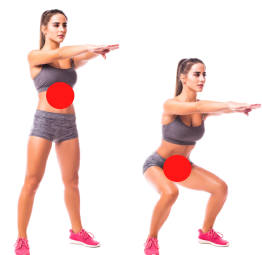
Distance	Time	Speed
Metres	Seconds	Metres per second
Kilometres	Hours	Kilometres per hour
Miles	Minutes	Miles per minute



Centre of Mass (COM)

Where an objects mass is considered to be concentrated, also known as the "point of balance"

Depends on: 1. height
2. muscle mass 3. body shape
4. body position



Height of COM

Factors affecting stability

Position of line of gravity

Mass of performer

Area of base of support

