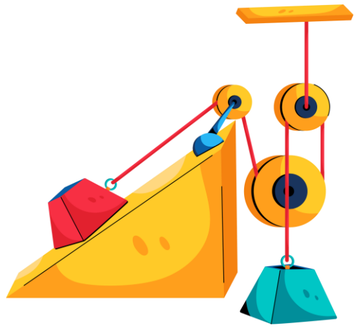
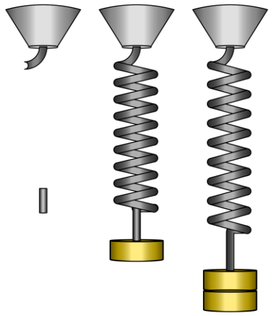
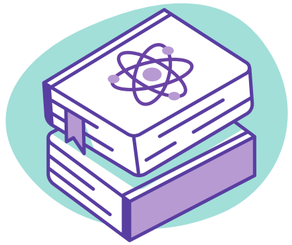






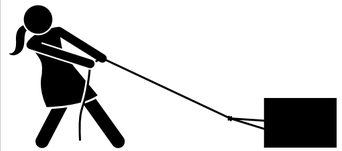


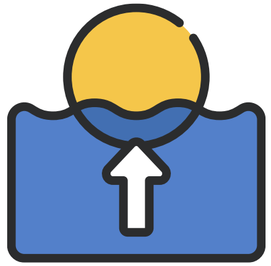


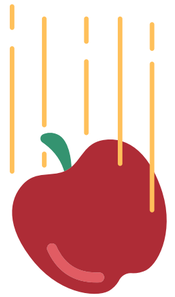


FORCES









A FORCE is a push, pull or twist applied to an object.

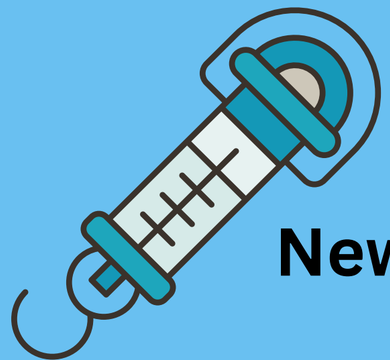


- **The force is measured in newton (N)**

$$1\,\mathrm{N} = 1\,\mathrm{kg} \cdot \frac{\mathrm{m}}{\mathrm{s}^2}$$

It measures how much force is needed to make a 1-kilogram object accelerate at a rate of 1 meter per second squared.

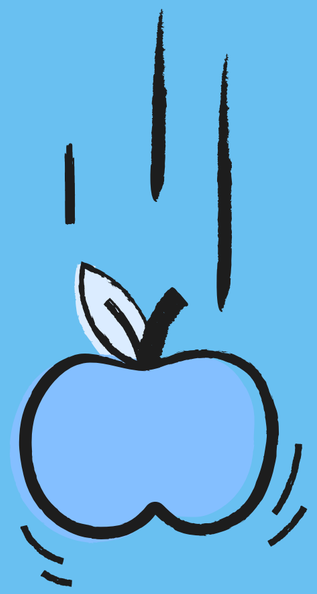
- **Instrument to measure force**



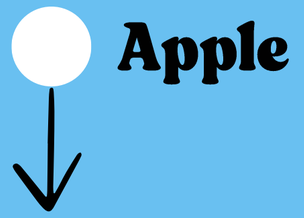
Newton meter/spring scale

Weight Force

Pulls down on an object towards the centre of the Earth.

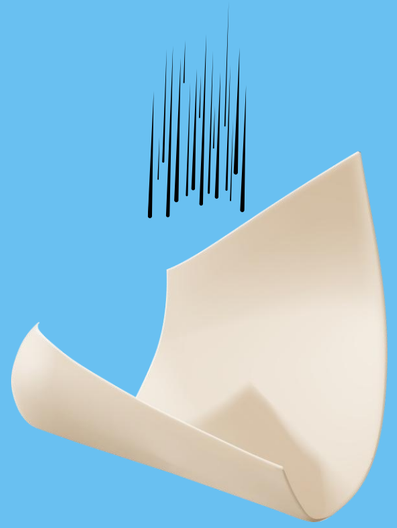


Free-Body diagram

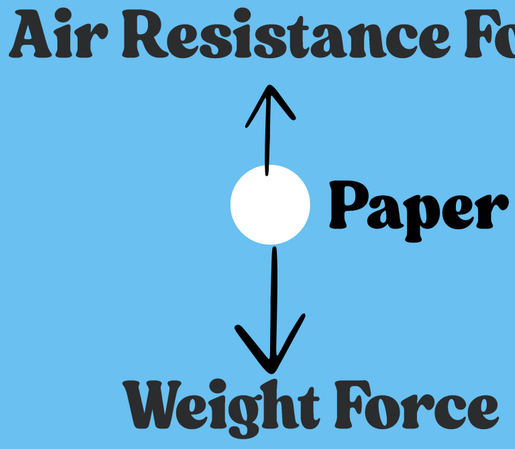


Air resistance force

When an object moves through the air it hits air molecules and they slow it down.



Free-Body diagram

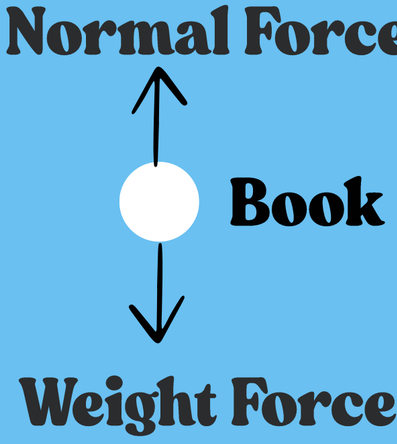


Support force/Normal force

The normal/support force is the support force exerted upon an object that is in contact with another fixed or stable object.

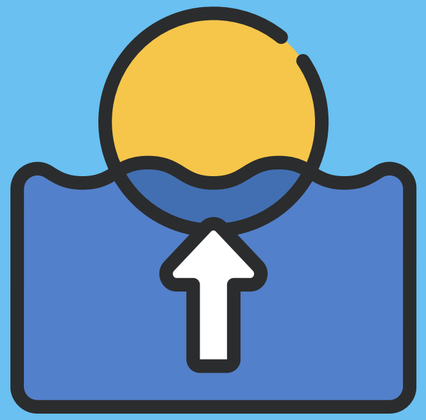


Free-Body diagram

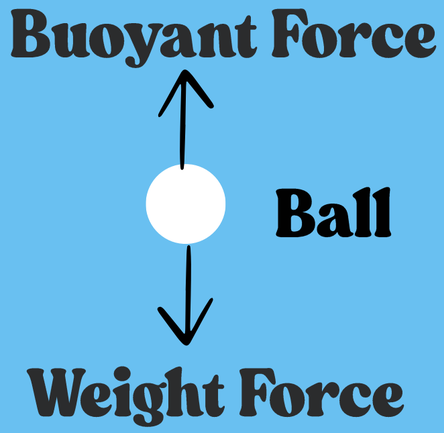


Buoyant Force

The buoyant force, also known as upthrust, is the force that pushes upwards on an object that is submerged in a fluid.



Free-Body diagram

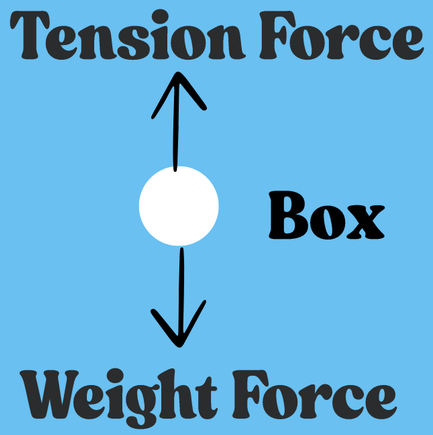


Tension Force

Tension force happens in ropes and cables when they are pulled by a force.

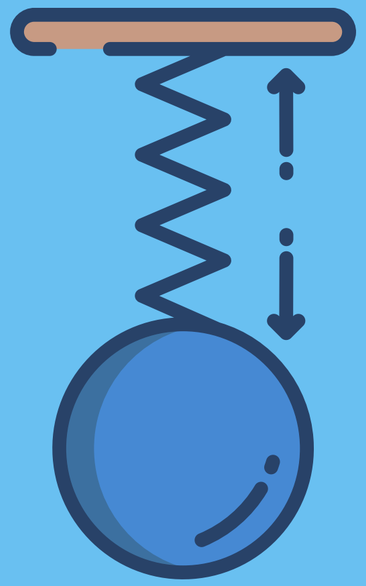


Free-Body diagram

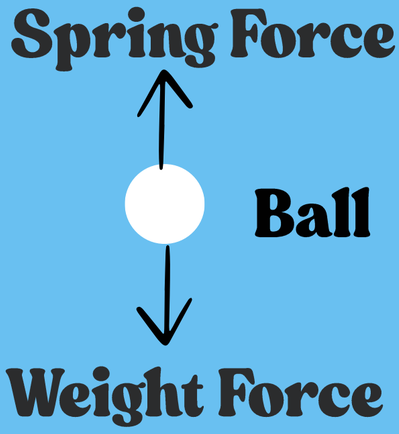


Spring Force

It is the force exerted by a spring when it is stretched or compressed.



Free-Body diagram

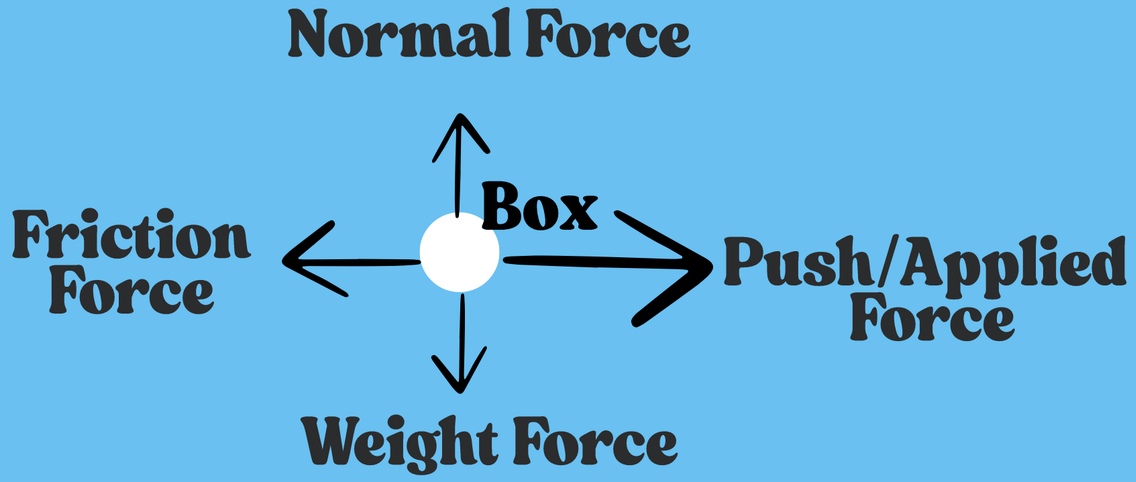


Friction Force

A force which tries to stop motion.



Free-Body diagram



Thrust Force

Thrust is the force that pushes an object forward.



The car is accelerating

Free-Body diagram

