

Physics with Synno – Motion-2 – Lesson 12

M.3.4 Mass and Weight

Mass is a measure of how much **material** is contained in an object and is measured in Kg.

Weight is a measure of the **pull** of gravity on an object, it is a force and is measured in N.

Mass and weight are **not** the same thing, however they are related.

An object in a gravitational field of strength g feels a force, called weight w , that depends on a property of an object called mass (m) and $w = m g$.

M.3.5 Types of Forces

1. Friction

A force **opposing** the motion of a body.

eg. table-floor, car-air

2. Tension

These are pulling forces that try to **stretch or elongate** an object. They act along the string or wire.

3. Weight

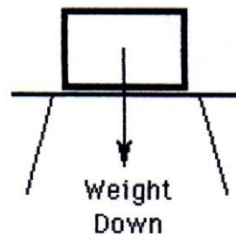
The force by which a mass is attracted to the Earth. It is proportional to the bodies gravitational mass (m_g), the constant of proportionality being the gravitational field strength (g).
($g \propto 9.8 \text{ N Kg}^{-1}$)

$$W = m g$$

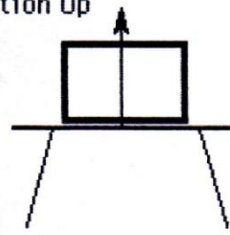
4. Reaction

When a body sits on a surface there is a force acting **upwards** to prevent it falling downwards. This force is called the reaction force.

Example



Reaction Up



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