

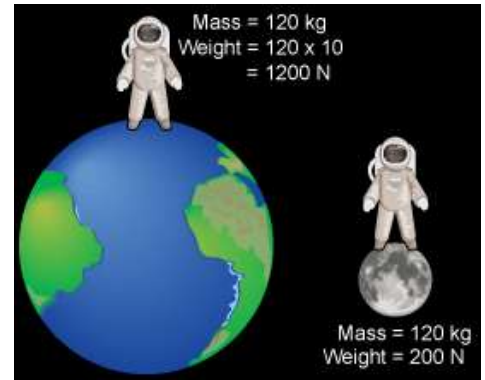
# Clarifications:

## Mass Vs. Weight

	<b>Mass</b>	<b>Weight</b>
Definition	The amount of matter in a substance.	The force exerted on an object by gravity ( $W = m \times g$ )
Units	kilograms	Newton
Notes	An object's mass is not dependent on gravity and does not change.	Weight depends on gravity.
Scalar / Vector	Scalar	Vector

The figure illustrates the astronaut having a mass of 120 kg on both the Earth's and Moon's surface. However, the astronaut's weight on the Moon is 1/6th his weight on Earth. The difference in weight is a result of the gravitational force being weaker on the Moon.

The Moon has less mass than Earth and therefore has less gravitational pull, by 1/6th (accepted accelerations due to gravity for Earth and Moon are  $g_{\text{Earth}} = 9.81 \text{ m/s}^2$  and  $g_{\text{Moon}} = 1.66 \text{ m/s}^2$ ).

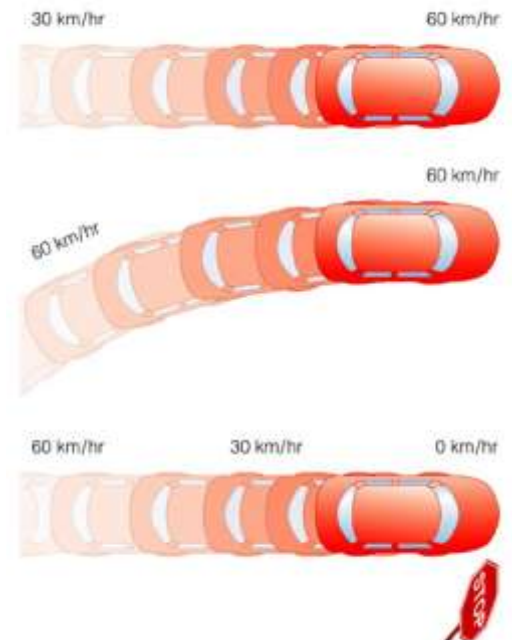


## Speed Vs. Velocity

	<b>Speed</b>	<b>Velocity</b>
Definition	The distance an object travels in a certain amount of time	The speed of an object moving in a particular direction
Units	m/s or km/h	m/s or km/h
Scalar / Vector	Scalar	Vector

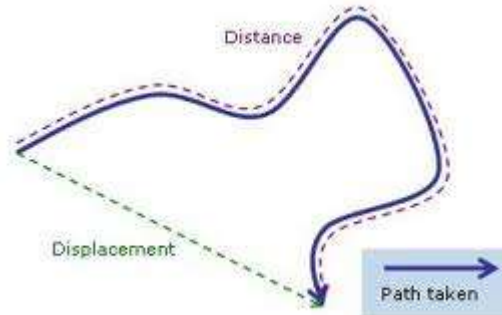


Two cars driving at the same speed have different velocities if one of them goes north and the other goes south.



## Distance Vs. Displacement

	<b>Distance</b>	<b>Displacement</b>
Definition	How far an object moves	The length between the initial position and the final position of an object.
Notes	Cannot be negative	Can be negative
Units	cm or m or km	cm or m or km
Scalar / Vector	Scalar	Vector



## Heat Vs. Temperature

	<b>Heat</b>	<b>Temperature</b>
Definition	Energy transferred from one body to another when there is different temperatures	The speed of an object moving in a particular direction
Units	Joules [J]	Celsius [°C] Kelvin [K] Fahrenheit [°F]
Notes	A form of energy	Degree of coldness and hotness
	Can do work	Cannot do work
	Transfers from hot area to cold area	Increases when heated, decreases when cooled
Scalar / Vector	Scalar	Scalar

