

Speed and distance time graphs

Speed:

Interpreting a distance-time graph:

to calculate speed we need to know the distance travelled and the time taken

Distance time graphs show us the relationship between the distance travelled and the time taken to cover it.

avg speed= total distance (m) ÷ total time (s)

A straight flat line means the object is at rest because distance is not increasing and time is simply moving on.

speed= distance ÷ time ($s=d/t$)

A steeper slope would imply acceleration if it is increasing and deceleration if it is decreasing

We can interpret a straight line as steady speed

At any point in the graph you can find the speed by finding the slope as you would for any other graph

Mass, Weight and Fields

What is mass? what is weight?

Mass is a measure of much matter there is in an object. Weight is a measure of the effect of gravity on an object.

How to calculate mass: How to calculate weight:

$$W=mg$$

Gravitational field strength

what is gravitational field strength?

A gravitational field is a region where a mass experiences a force, gravitational field strength is a measure of the strength of that field

gravitational field strength is measured in (N/Kg) newtons per Kg

How to find gravitational field strength:

Gravitational field strength is calculated using the formula $g = GM/r^2$, where G is the gravitational constant, M is the mass, and r is the distance.

Straight line graphs

what is the equation of a straight line graph?

$$y=mx$$

the equation linking weight mass and gravitational field strength is:

$W=mg$, (weight= mass x gravitational field strength)

