



## ACCELERATION

## Acceleration Units

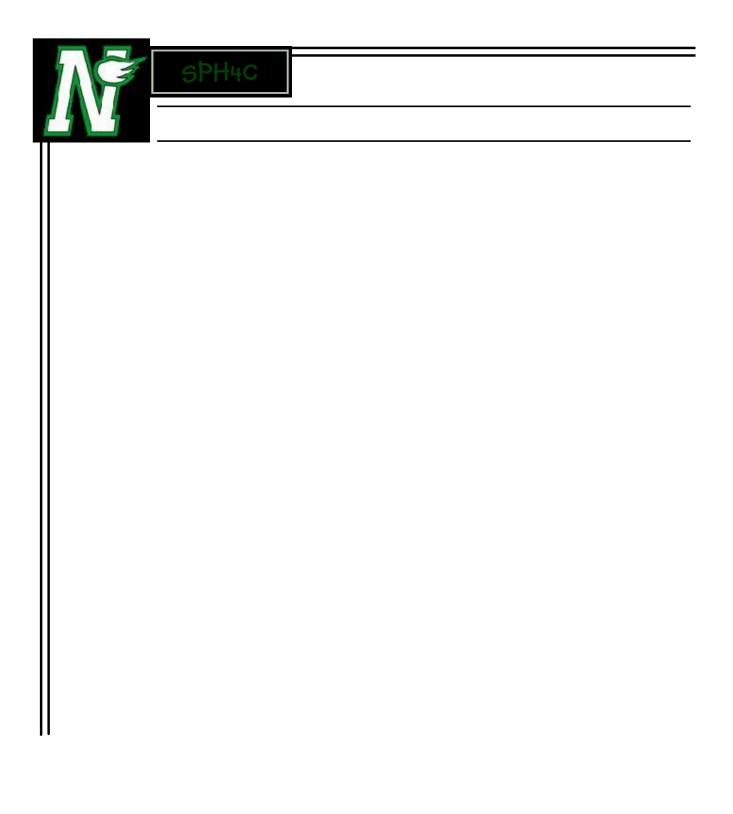
The units for acceleration are slightly complex. Refering to the formula it is a *SPEED* (distance per time) divided by a *TIME*. This means that an acceleration unit will be a *distance per time per time*.

For example, a car that accelerates 10 km/h every second would be said to be accelerating at 10 km/h/s.

There will be times where the time units are the same. For example, a car that accelerates at 5 m/s every **second** would be said to be accelerating at 5 m/s/s or 5 m/s<sup>2</sup>.

Video Example: What is this car's acceleration?





Internet Present	
N	PHYSICS
slows	irplane lands on a runway travelling 250 km/h and s down at a rate of 20 km/h/s. How fast will the plane bing after 8.5 seconds?
trave at 90 m/s/s	der to make an upcoming turn, a car needs to be ling a speed of 12 m/s. If the car is originally travelling km/h and the breaks can decelerate the car at 3 Mew long in advance should the driver initiate king in order to safely take the turn?

PHYSICS ACCELERATION
A roller coaster car rapidly picks up speed as it rolls down a slope. As it starts down the slope, its speed is 4 m/s. But 3 seconds later, at the bottom of the slope, its speed is 22 m/s. What is its average acceleration?
A cyclist accelerates from 0 m/s to 8 m/s in 3 seconds. What is his acceleration ? Is this acceleration higher than that of a car which accelerates from 0 to 30 m/s in 8 seconds?
A car advertisement states that a certain car can accelerate from rest to 70 km/h in 7 seconds. Find the car's average acceleration.
A lizard accelerates from 2 m/s to 10 m/s in 4 seconds. What is the lizard's average acceleration?
If a Ferrari, with an initial velocity of 10 m/s, accelerates at a rate of 50 m/s/s for 3 seconds, what will its final velocity be?

