
Momentum as the Product of the Mass and the Velocity of an Object

We all know that Momentum is the product of the mass and the velocity of an object (Momentum = mass x velocity). Therefore, in shorthand notation, Momentum = mv . A moving object can have a large momentum when either its mass or velocity is large or both are large. As shown in my video, a blue truck which has zero momentum for it was at rest, was hit by a yellow truck having a large amount of mass causing it to have a large amount of momentum too. In this part of my video, where the blue truck at rest was hit by the yellow truck, Impulse is already present.

Impulse, for what we know, it is the change in momentum. Before the collision happened between the two trucks, we have seen that the blue truck was at rest causing it to have zero momentum but after the collision happened, it already started to gain and change its momentum for it started to change its velocity causing the yellow truck to decrease its momentum. So, in changing momentum, both force and time interval is important. Impulse, therefore, is the product of force and time. Therefore, in shorthand notation, Impulse (J) = Ft . Let us now focus on the different kinds of collisions we need to know.

A collision, which is generally considered to have two types, the elastic and the inelastic collision, is where two things collide with each other. It's just that in an Elastic Collision, there is an involvement of momentum and a kinetic energy while in an Inelastic Collision, only a momentum is involved and not with a kinetic energy. Whether it is elastic or not, always remember that the momentum of an object is always constant. Since in my video, the trucks collide with each other and caused them to stick together, they are considered to be perfectly Inelastic Collision. In this type of collision, different kinds of kinetic energy like heat and potential energy are being lost. To compare this with my video, the blue truck having zero momentum has now doubled in momentum and a half in velocity after having a collision with the yellow truck.

So if an Inelastic collision is the type of collision that we can call an object that collides, Elastic Collision, on the other hand, is the type of collision that allows or makes both objects bounce against each other. My video is not an Elastic Collision for as we have seen that both trucks collide and stick together with each other until the end and never made Elastic Collision happen in the problem.

Need help with the assignment?

Our professionals are ready to assist with any writing!

[GET HELP](#)