

Conservation of momentum - lab report example

[Science](#), [Physics](#)



Conservation of Momentum

Conservation of momentum Conclusion Results of the first section of experiment one show an inverse relationship between mass and velocity as average velocity reduces as more masses are added to the plunger cart and this indicates proportionality constant. The same effect of mass on velocity is evident after collision as additional masses reduces velocity. Velocity is however higher when mass is added to the non-plunger cart than when mass is added to the plunger cart, contrary to expectation of similar velocity when equal masses are involved. The velocity of the plunger cart is directly proportional to mass while that of non-plunger cart is inversely proportional mass for explosion. This shows a shift of momentum to the plunger cart with increase in its mass (Serway, Faughn, Vuille and Bennett 166- 170).

Answer to the questions

Necessary conditions for conservation of momentum

Necessary conditions for conservation of momentum are a balance between internal and external forces, conserved energy, and absence of external forces.

Difference, in the first experiment, between putting two masses on a moving cart and on a stationary cart

Putting two masses on the stationary cart had effects that were more significant in reducing the resultant velocity of the system. This means more lost energy towards lower momentum than when masses are added on the moving cart.

Effects, in the second experiment, of placing the extra mass on the plunger cart

Placing extra masses on the plunger cart had the effect of increasing the velocity of the cart while reducing velocity of the non-plunger cart.

Possible sources of error for the experiment

Lost energy to the environment during collision and explosion and possible inaccuracies in reading time taken are the potential sources of error in the experiment.

Works cited

Serway, Raymond, Faughn, Jerry, Vuille, Chris, and Bennett, Charles.

Enhanced college physics. Mason, OH: Cengage Learning, 2006. Print.