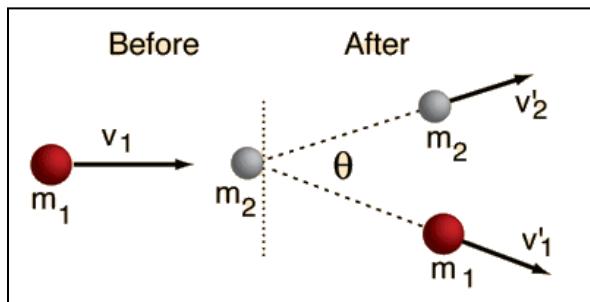


Name: Charles Henry M. Tinoy Jr.

Date: November 13, 2024

Grade & Section: 12 - Burgundy

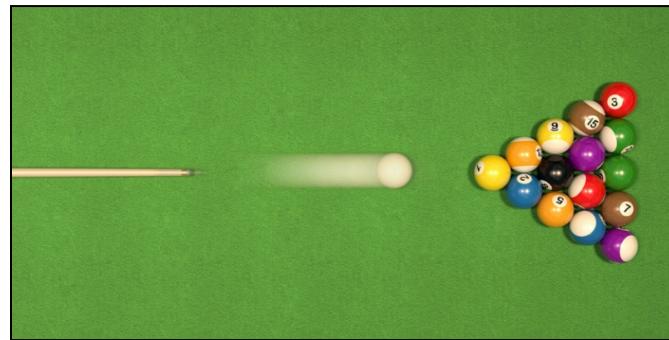


### Elastic Collisions

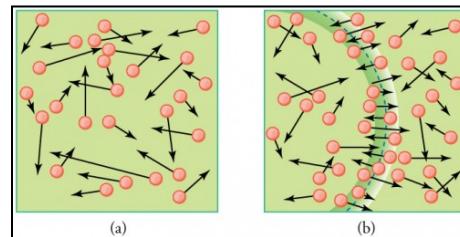
**Definition:** In elastic collisions, both momentum and kinetic energy are conserved. Objects bounce off each other without losing energy.

#### Examples:

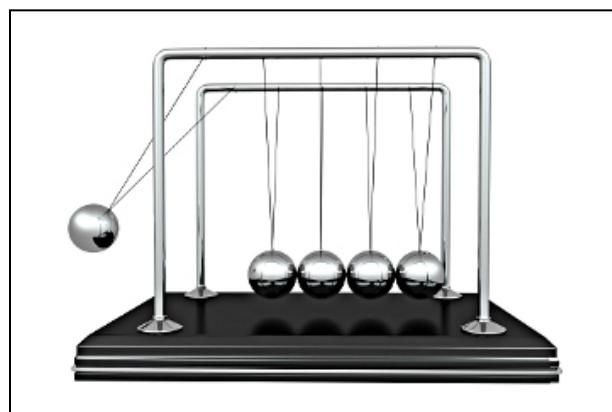
1. **Billiard Balls** - When two billiard balls collide, they bounce off with little to no energy lost.



2. **Air Molecule Collisions** - Gas particles constantly collide elastically, conserving energy.



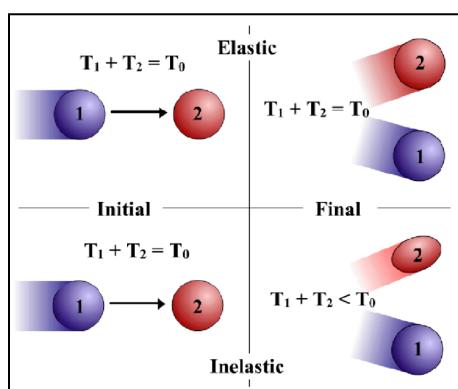
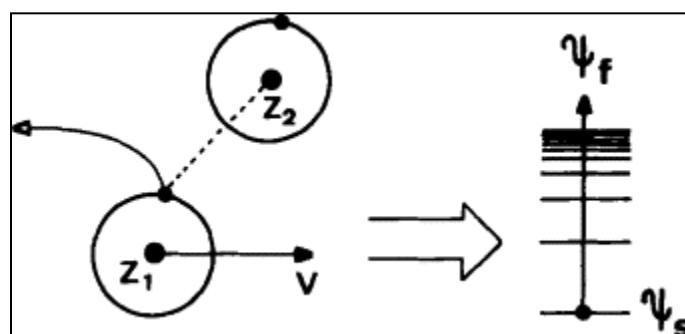
3. **Newton's Cradle** - The swinging balls transfer energy perfectly to the next ball, keeping kinetic energy intact.



4. **Rubber Balls** - When two rubber balls collide, they bounce back without deformation.



5. **Atomic Collisions in Physics** - Particles like neutrons and protons exhibit elastic collisions at an atomic level.

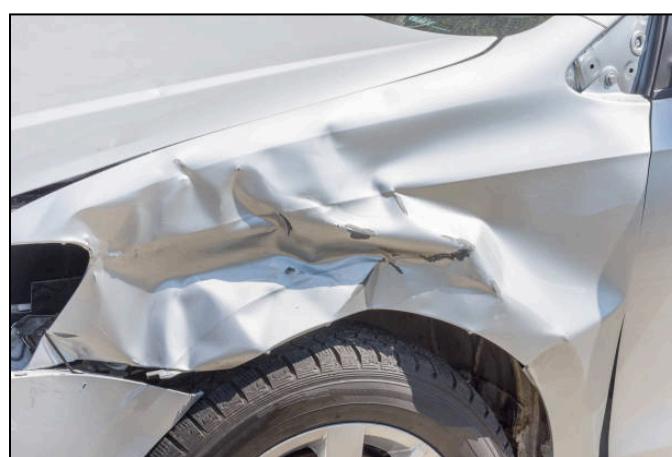


### Inelastic Collisions

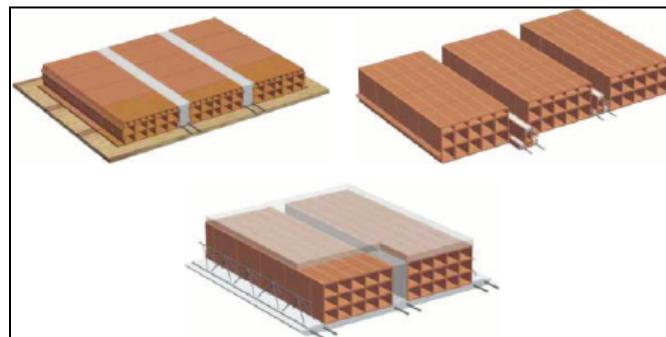
**Definition:** In inelastic collisions, momentum is conserved, but kinetic energy is not. Objects may change shape slightly, but they separate after colliding.

### Examples:

1. **Car Crash with Minor Denting** - When cars collide and bounce off with minor damage.



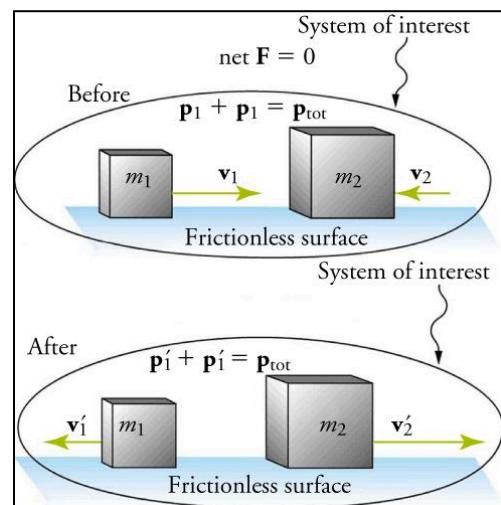
2. **Clay Blocks on Floor** - Dropping clay on a hard surface causes it to deform and lose energy.



3. **Football Tackling** - Players collide, energy dissipates as they separate.



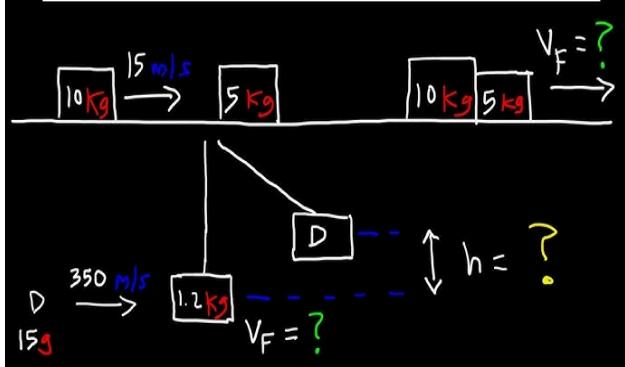
4. **Two-Box Collision in Physics Experiments** - Boxes collide, some kinetic energy is converted to heat.



5. **Padded Bumper Car Collisions** - They separate after contact but lose energy through friction and sound.



# Inelastic Collisions



## Completely Inelastic Collisions

**Definition:** In completely inelastic collisions, the colliding objects stick together post-collision. Momentum is conserved, but maximum kinetic energy is lost.

### Examples:

1. **Mud Ball Hitting a Wall** - The ball sticks to the wall, losing all kinetic energy.



2. **Truck Colliding with Car** - If they stick together post-collision, it's completely inelastic.



3. **Meteorite Hitting Earth** - Sticks to the ground, transferring energy to the ground.



4. **Sticky Clay Collision** - Two clay pieces collide and merge into one mass.



5. **Football Catch** - If a player catches the ball and stops, they move together with a reduced speed.

