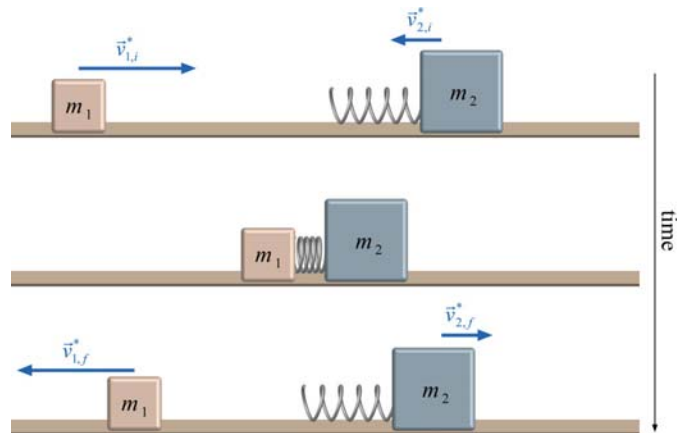


MAIN POINTS

Elastic Collisions

If the only forces acting during a collision are conservative forces, then the kinetic energy of the system, defined to be the sum of the kinetic energies of the colliding objects, is conserved. Such collisions are called elastic collisions.

$$\sum K_i = \sum K_f$$



Center-of-Mass Frame

Elastic collisions are most simply described in the center-of-mass reference frame of the colliding objects.

The collision may cause objects to be deflected through some angle in the frame, but their speeds will always remain the same.

Center-of-Mass Reference Frame

$$\vec{P}_{Total} = M_{Total} \vec{V}_{CM} = 0$$

