

Investigating Momentum

Equations

Recall the equations for momentum and kinetic energy

Momentum:

Kinetic Energy:

Simulate Collisions

Using the online simulation (www.tinyurl.com/momentum-test), investigate the resulting momentum from collisions between 2 balls. Investigate the momentum and kinetic energy before and after the collisions.

Momentum

Fill in the momentum from before and after the collisions

| | Initial | | Final | | Elastic? |
|---|---------|--------|-------|--------|----------|
| | Ball 1 | Ball 2 | Ball1 | Ball 2 | |
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |

What do you notice about Momentum before and after the collisions? (Hint: Try comparing the totals for before and after the collision)

Kinetic Energy

| | Initial | | Final | | Elastic? |
|---|---------|--------|-------|--------|----------|
| | Ball 1 | Ball 2 | Ball1 | Ball 2 | |
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |

What do you notice about Kinetic Energy before and after the collisions? (Hint: Try comparing the totals for before and after the collision)

Word Bank – fill in the definitions

Conservation of Momentum:

Equation:

Elastic Collision:

Inelastic Collision: