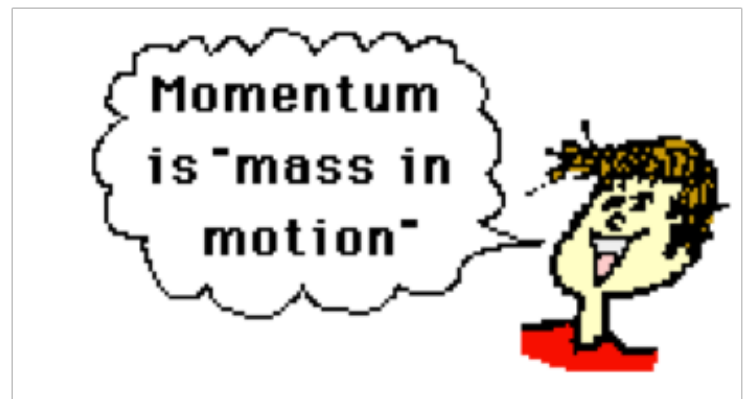


Explosion Answer and Elastic Collisions

What is momentum?

Momentum

- Momentum is often described as “inertia in motion”
- Momentum = mass • velocity
- $p = m \cdot v$
- The unit of momentum is the kg m/s
- Momentum is a vector, so DIRECTION MATTERS(+ or -)



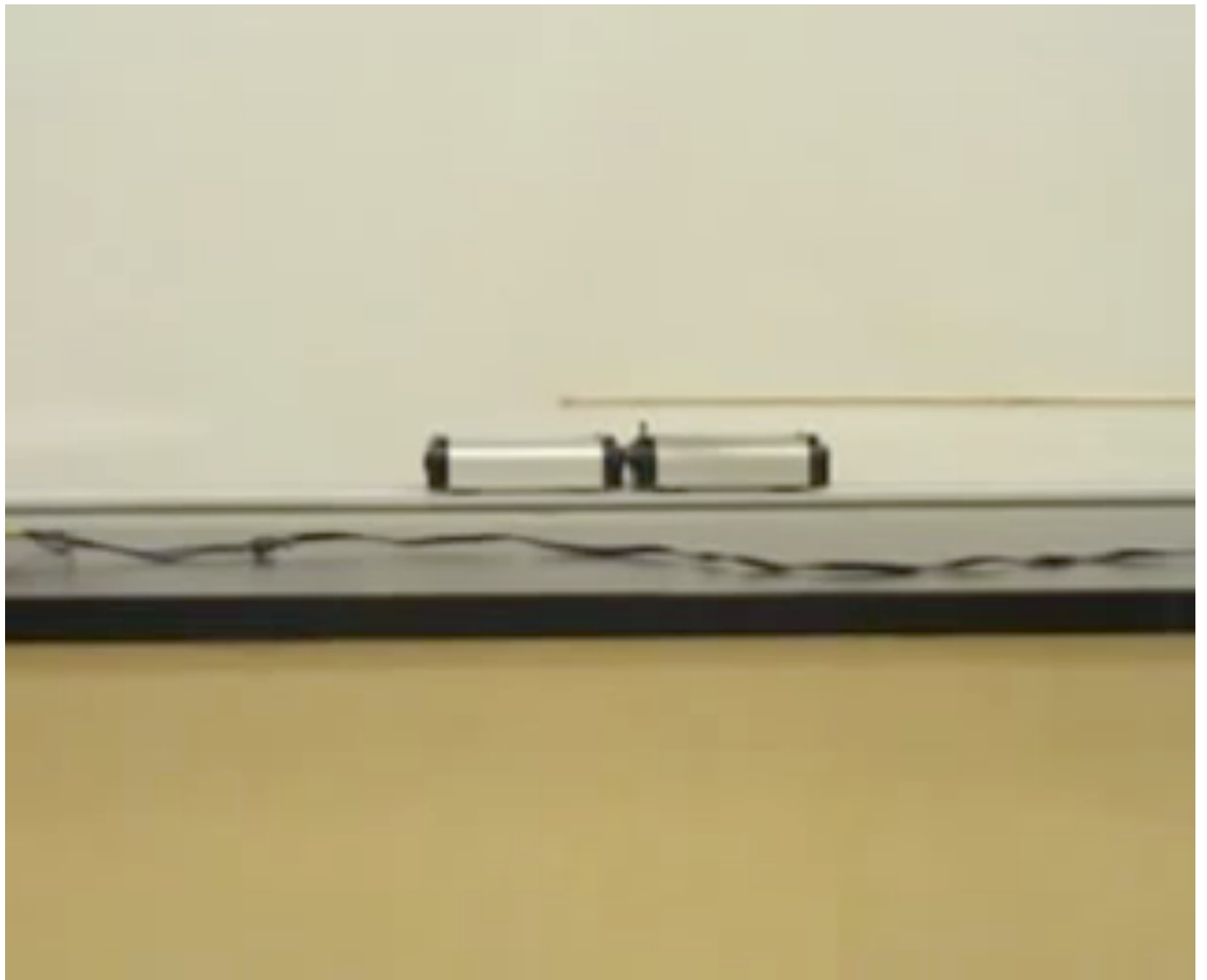
Conservation of Momentum

Total Momentum
BEFORE a Collision = **Total Momentum**
AFTER a Collision

So, does an explosion violate the law of conservation of momentum?









Collisions

- What are the types of collisions?
- What is the difference?

Range of Possible Collisions

Total Splat!
(Stick)

The
Perfect
Bounce

Completely

Completely

Inelastic

←.....less bounce

more bounce→

Elastic



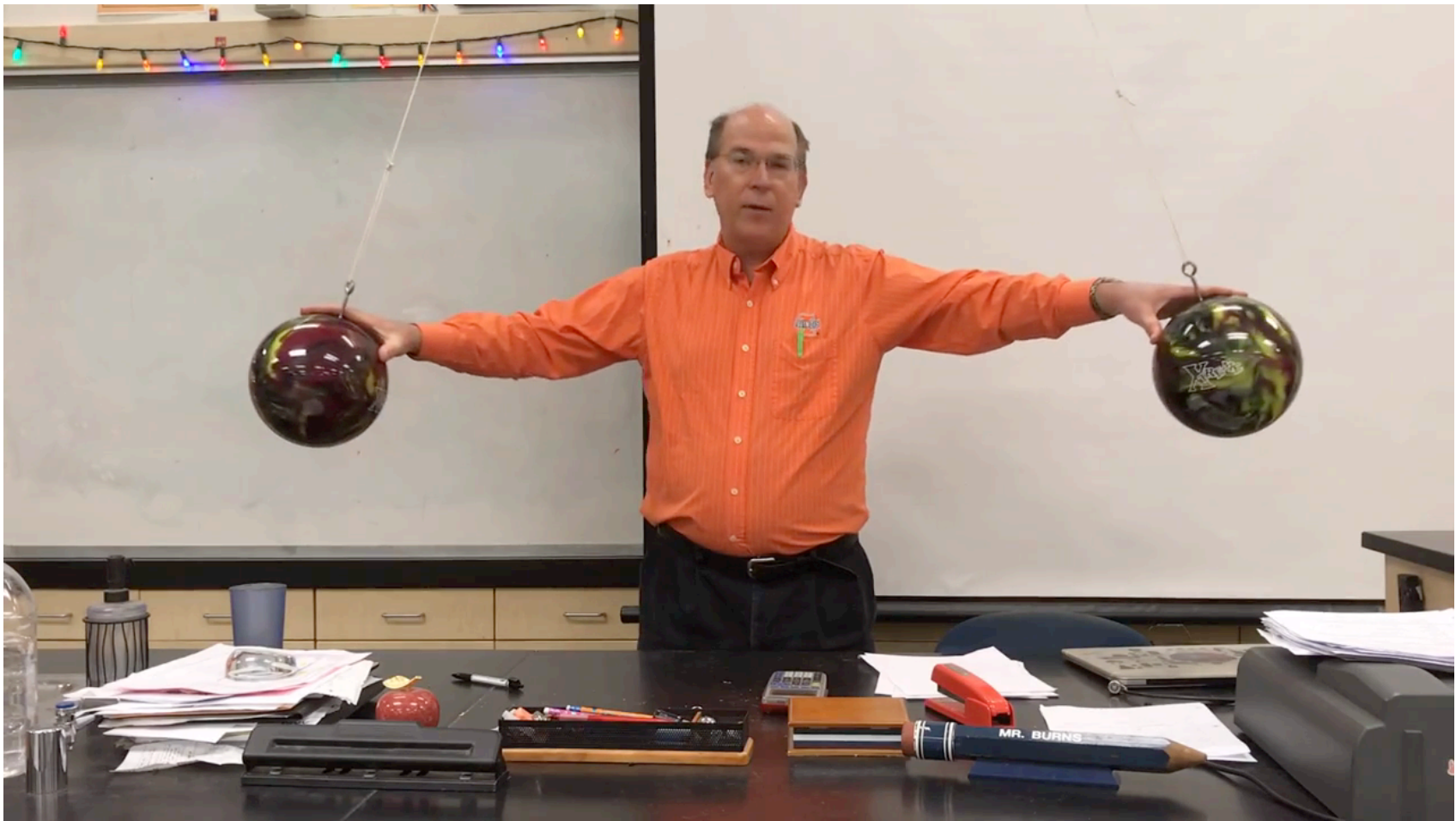
←----- **More Inelastic**

More Elastic -----→

Inelastic collisions involve “sticking”. In inelastic collisions, objects are deformed as a result of the interaction. A good example is a car accident.

Elastic collisions involve “bouncing”. In elastic collisions, objects retain their original shape. A good example is a pool table.

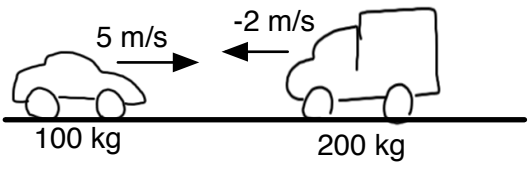




(ex)

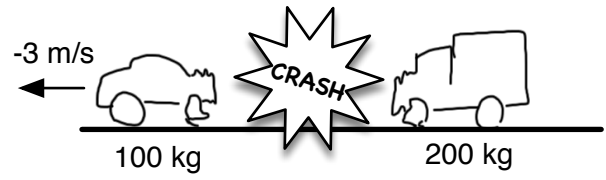
total momentum before	
-----------------------	--

--	--



total momentum after	
----------------------	--

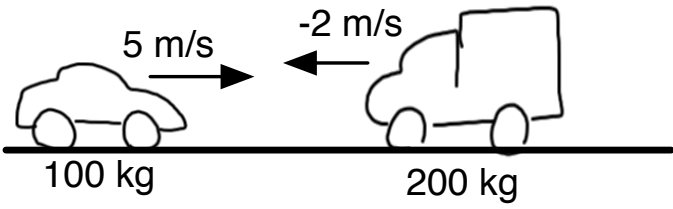
--	--



Find the velocity of the truck: how much and which way.

(ex) total momentum before

total momentum after



Find the velocity of the truck: how much and which way.

- Momentum = mass • velocity
- $p = m \cdot v$

Total Momentum BEFORE a Collision = Total Momentum AFTER a Collision