


Momentum

Moving Objects have Momentum

- ▶ Momentum = mass x velocity
- ▶ $p = mv$
- ▶ Greater mass, Greater velocity → Greater Momentum
- ▶ Like velocity, momentum has direction
- ▶ For an object at rest, the momentum is zero


Momentum

- ▶ Momentum is transferred



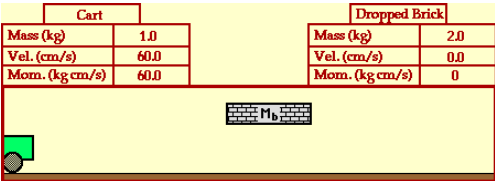
Momentum

- ▶ Momentum is transferred



Momentum is Conserved

Cart		Dropped Brick	
Mass (kg)	1.0	Mass (kg)	2.0
Vel. (cm/s)	60.0	Vel. (cm/s)	0.0
Mom. (kg cm/s)	60.0	Mom. (kg cm/s)	0



Momentum is Conserved

- ▶ In a CLOSED system, the total amount of momentum is conserved
 - aka **The Law of Momentum**
- ▶ Direction must be considered

Momentum

- ▶ How can we tell that momentum is conserved?



Newton's Cradle