**Vocabulary: 2D Collisions**



**Vocabulary**

* Center of mass – the point at which all the mass of a body or system can be considered to be concentrated when analyzing the motion of that body or system.
	+ Two-dimensional objects are able to balance on their center of mass.
* Conservation of energy – the principle that the total energy in a closed system remains constant.
* Conservation of momentum – the principle that the total *momentum* in a closed system remains constant.
* Elasticity – a measure of how readily an object returns to its original shape after it has collided with another object.
* Kinetic energy – energy of motion.
	+ Kinetic energy is represented by the symbol *KE* or simply *K*.
	+ The formula for kinetic energy is *KE* = *mv*2 / 2.
* Momentum – a measure of how difficult it is to stop a moving object.
	+ Momentum is represented by the symbol *p*.
	+ Momentum is the product of an object’s mass and *velocity*: *p* = *mv*.
	+ If mass is measured in kilograms (kg) and velocity is measured in meters per second (m/s), the units of momentum are kilogram-meters per second (kg⋅m/s).
* Speed – the rate at which an object is changing its position.
	+ Speed is equal to the magnitude of velocity.
	+ Average speed is equal to distance divided by time: *v* = *d* ÷ *t*.
* Vector – a representation that specifies the direction and magnitude of a quantity.
	+ In physics, vectors are used to represent displacement, velocity, acceleration, force, and other quantities that have a specific direction.
	+ Vectors are represented visually by arrows.
* Velocity – the speed and direction of a moving object.
	+ Motion to the right or upward is considered positive and motion to the left or downward is negative.