**Vocabulary: Moment of Inertia**



**Vocabulary**

* Angular velocity – the angle through which an object rotates in a given time.
	+ The symbol for angular velocity is *ω* (omega).
	+ Units of angular velocity may be radians per second (rad/s) or degrees per second (°/s).
* Linear velocity – the speed and direction of an object.
	+ The symbol for linear velocity is *v*.
	+ Linear velocity is also simply called “velocity.”
* Moment of inertia – a measurement of an object’s resistance to changes in rotation.
	+ Moment of inertia is represented by the symbol *I*.
	+ The SI unit of moment of inertia is the kilogram meter squared (kg⋅m2).
	+ Moment of inertia plays the same role in most equations about rotational motion as mass does in equations about linear motion.
* Rotational kinetic energy – kinetic energy due to rotation.
	+ Symbols for rotational kinetic energy include *RKE* and *KERot*.
	+ For a rotating object, the formula for rotational kinetic energy is:



In this equation, *I* represents moment of inertia and *ω* represents angular velocity.

* Translational kinetic energy – kinetic energy due to linear motion.
	+ Symbols for translational kinetic energy include *TKE* and *KETrans*.
	+ For a moving object, the formula for translational kinetic energy is:



In this equation, *m* represents mass and *v* represents velocity.