**Vocabulary:** **Uniform Circular Motion**



**Vocabulary**

* Acceleration – the change in *velocity* per unit time.
	+ Acceleration is calculated by dividing the change in velocity by the elapsed time: *a* = ∆*v* / ∆*t*.
	+ For example, if an object accelerates from 0 m/s to 10 m/s in 2 seconds, the acceleration is 5 m/s/s, or 5 m/s2.
	+ Because changes in direction are also considered changes in velocity, changing direction implies acceleration.
* Centripetal acceleration – the acceleration of a body that is moving in a circle.
	+ Centripetal acceleration is always directed toward the center of the circle.
	+ Centripetal acceleration also applies to objects moving in an elliptical orbit, such as planets orbiting the sun.
* Centripetal force – force acting on a body that causes it to move in a circle.
	+ Centripetal force is always directed toward the center of the circle.
	+ Centripetal force also causes objects to move in an elliptical orbit, such as planets orbiting the sun.
* Newton’s first law – an object will travel at a constant velocity unless acted upon by an unbalanced force.
	+ For example, a meteor travelling through interstellar space will not speed up or slow down unless it is influenced by gravity or another force.
	+ Newton’s first law also is known as the law of *inertia*. Inertia is the resistance of an object to a change in its motion.
* Newton’s second law – the force acting on an object is equal to the product of its mass and acceleration: *F* = *ma*.
	+ The greater the force on an object is, the greater its acceleration.
	+ If you add mass to an object, it will accelerate less rapidly under a given force.
* Uniform circular motion – motion at a constant speed along a circular path.
* 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.