**Vocabulary:** **Simple Harmonic Motion**



**Vocabulary**

* Controlled experiment – an experiment in which only one variableis changed at a time.
	+ Generally, in a controlled experiment, all conditions are kept the same except for the variable being tested.
	+ In some cases, it is impossible to perform a perfectly controlled experiment. For example, a scientist cannot perform a controlled experiment on animal behavior in the wild because there are too many uncontrollable variables, such as weather and the presence of other animals.
* Harmonic motion – a symmetrical back-and-forth or up-and-down motion.
	+ Each full movement is called an *oscillation*.
* Oscillation – a single back-and-forth or up-and-down movement for an object in harmonic motion.
* Pendulum – a weight that can swing freely.
* Period – the amount of time required to complete a single oscillation.
	+ The period of a pendulum is the time required for one full back-and-forth swing.
	+ The period of a *spring* is the time required for one full up-and-down movement.
* Spring – a coiled device that returns to its original shape after it is stretched or compressed.
	+ Springs usually are made of metal or plastic.
* Spring constant – a measure of how much force is needed to stretch or compress a spring.
	+ The symbol for the spring constant is *k*.
	+ For a given spring, the spring constant is equal to the ratio of the restoring force (*F*) and the negative displacement (–*Δx*) of the spring: *k* = *F ÷* (–*Δx*).