We will be exploring how velocity and acceleration are connected. When the acceleration is constant the velocity will constantly increase. If the acceleration is small, then the velocity will gradually increase as seen in the prelab. We will be using a car and pulley system to visually show how the two relate and affect each other. Acceleration is how fast an object is gaining speed relative to time. We will be using a toy car connected to a pulley system that hangs off the table so that the motion sensor can see the car as it moves away. As the weight at the end of the pulley is pulled down by gravity, it will pull the car at a constant acceleration away from the motion sensor on the table. From these tests we will plot and analyze graphs related to distance v. time, velocity v. time, and acceleration v. time. These graphs will assist with the physical demonstration to make it clear how velocity, time, and acceleration relate to each other.