Name: _____

Date: _____ Block: _____

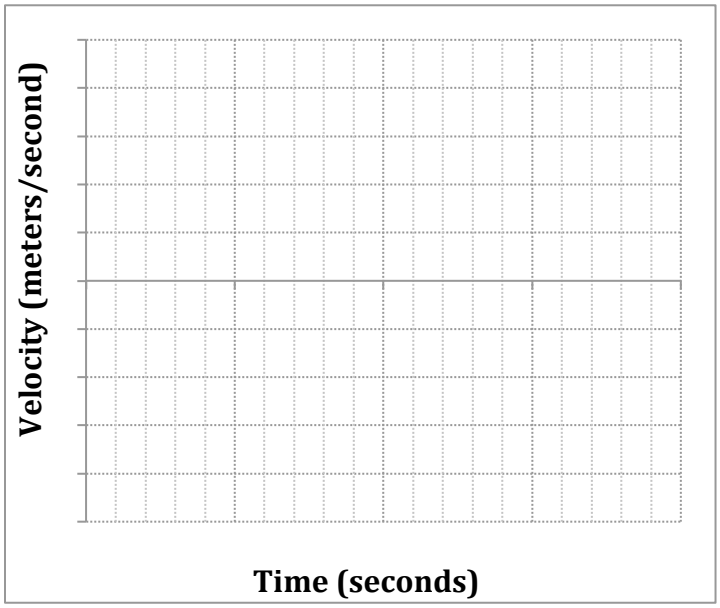
Dropping the Ball

In this lab, you are going to explore the characteristics of velocity-time graphs created by dropping various sized spherical objects under the motion sensor. You will need to choose three different spherical objects to test. One student is going to need to carefully stand on the lab table and hold the motion sensor so it faces the ground. They will drop one ball at a time. A second student will start the motion sensor at the computer. The student standing on the table should drop the ball after they hear the clicking of the motion sensor. The student at the computer should stop taking data as soon as they see the ball hit the ground. After they drop one of the balls, follow the directions on the attached sheet to analyze the graph.

Object 1: _____

Mass: _____

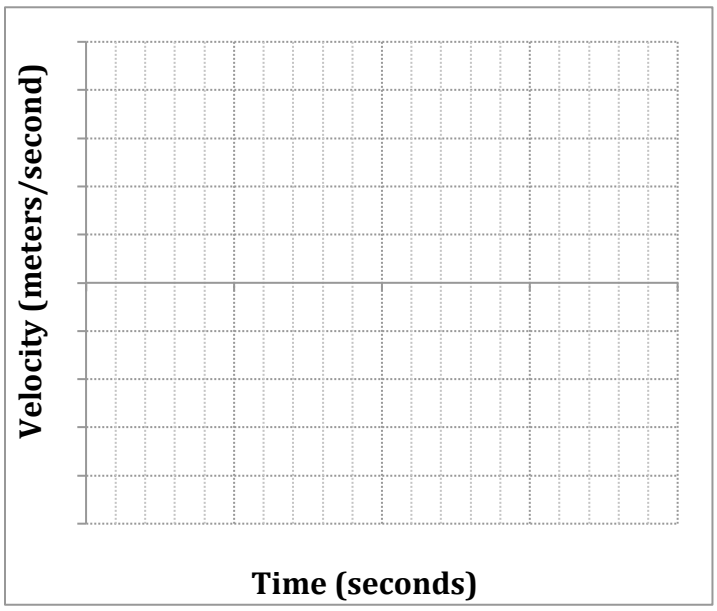
Equation: _____



Object 2: _____

Mass: _____

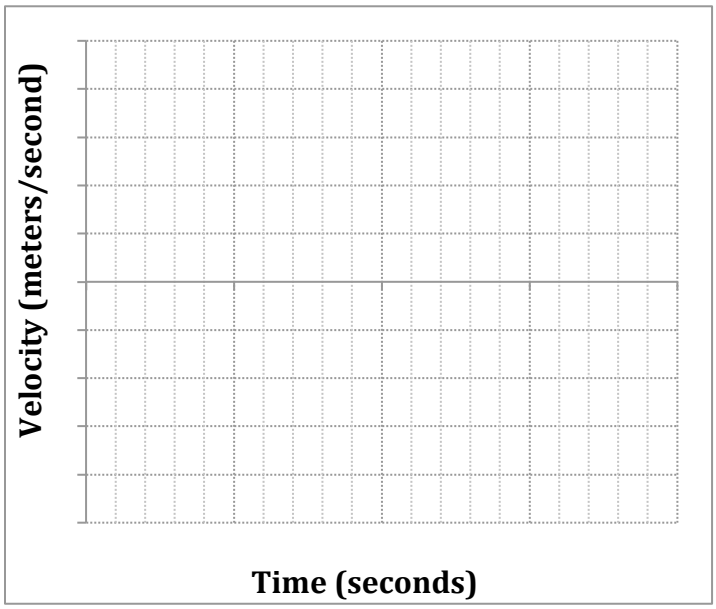
Equation: _____



Object 3: _____

Mass: _____

Equation: _____



Questions:

1. Are there any similarities in the graphs for the three objects? The equations?

2. Does the mass of the object affect what the graphs look like?

3. What does the slope of each of the velocity-time graphs represent?

4. Create an acceleration vs. time graph for the three objects. Put the lines on the same graph and use a different color line for each object.