Lab 2: Drag Racing

Name: _____

Date: _____

Group Members: _____

_____

Objectives
- Analyze the relationship between velocity and acceleration
- Calculate an object's average acceleration
- Collect data and interpret it
- Create and analyze a graph showing acceleration

A. Pre lab Questions
1. What is acceleration?

2. How does it relate to velocity?

B. Group Lab 1: Gone in 60 Seconds

You will work in pairs to calculate an object's acceleration. We will watch a clip from the movie. Pay close attention to what is happening in the scene. Write down your observations.

1. Observations

2. In pairs**.** Based on the information available in the scene, work with your partner to write a procedure to determine the acceleration.

<u>Procedure</u>

C. Class Discussion. As a class we will decide on standard procedures to determine the acceleration.

<u>Procedure</u>

D. Data Collection
We will watch the clip. Record the data for column 1 and 2. Be sure to note the units.

Time	Velocity (mph)	Velocity (m/s)	Acceleration

E. Group Lab 2: Fast and Furious

You will use the procedures from Section C.

Observations

F. Data Collection
We will watch the clip. Record the data for column 1 and 2. Be sure to note the units.

Color of Car: _____

| Time	Velocity (mph)	Velocity (m/s)	Acceleration

F. Calculation
1. In column 3 in Section D and F, write down the velocity in meters per second. To convert velocity from miles per hour to meters per second:

Velocity (miles/hour) X 1/3600 (hour/seconds) X 1609 (meters/miles) = Velocity (meters/second)

2. Look in your book to find the formula for acceleration. Record this calculation in column 4.

Analyzing the Results

Graph velocity on the y-axis and time on the x-axis

Velocity (meters/second)

Time (Seconds)
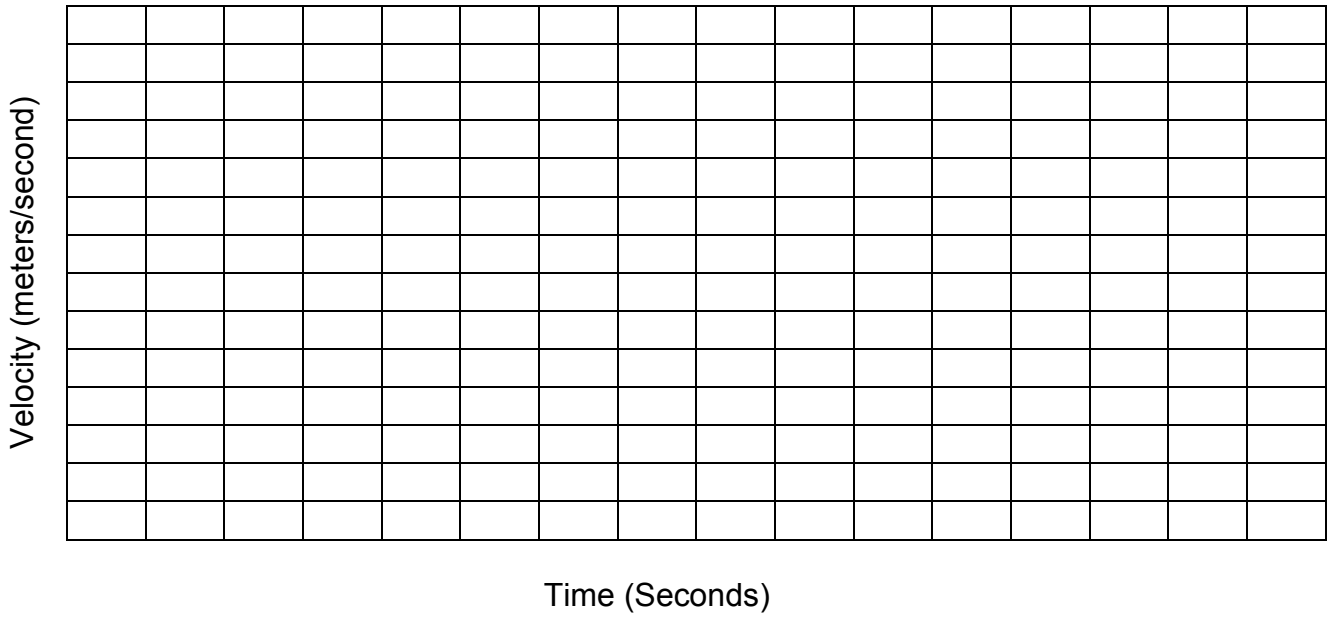
2. Summarize your results in a paragraph.