



Name: _____

Period: _____

Assigned on Friday, August 16, 2024

1.1 Lab: Hot Rod Physics – Graphing Motion**Due Wednesday, August 21, 2024****Objectives**

1. Measure properties of a moving object that can be graphed.
2. Create an appropriate graph of your collected data.
3. Determine what the slope of the graph represents physically about the motion of the object.

Procedure

You will be given a battery powered hot rod and other materials that you request. Your job is to identify properties of the hot rod's linear motion that could be measured and then graphed. Here are some things to consider:

- How will you measure the properties you have selected?
- How will you minimize error in the collection of your data?
- How will you organize your data?
- What type of graph is most appropriate for your collected data?
- What variables belong on the x- and y-axes?

Lab Report (one per group)

Your group will turn in a **hand-written** lab report that includes the following:

1. **Objectives** of the lab (see above!)
2. Your **procedure** for collecting data (brief description that is clear enough that an 8th grader would understand how to reproduce your results.)
3. A **data table** with your collected data including labels and units. This should be very neat with a ruler.
4. An appropriate **graph** of your data including labels, units, and the equation of the line of best fit (may be computer generated and printed out.)
5. **Answers** to the following questions:
 - a. What does the slope of the line in your graph represent? How do you know?
 - b. If the hot rod was travelling faster, what would change about your graph?
 - c. What were two experimental sources of error in your experiment that caused your data to be imprecise? Be specific. How could you have minimized each source of error?
6. A **second graph** that will be described by your teacher later.