

Buggy Car Lab

Purpose: To determine the relationship between position and time

[Link to position/distance explanation](#)

Materials: Buggy car, stopwatch, tape, and meterstick

Data: Record values in a data table. DO NOT do any calculations (averages, totals, etc.)

Groups 1, 2, & 3 will have their car start at the origin and move away from the origin.

=> So at time = 0 s, what will be the position of the car?

Groups 4 & 5 will have their car start at a position of 3 m away from the origin and travel towards the origin

=> So at time = 0 s, what will be the position of the car?

Groups 6, 7, & 8 will have their car start at a position of 1 m and their car will travel away from the origin.

=> So at time = 0 s, what will be the position of the car?

So your data table should start with the data point $t = 0$ and $x = _ _$

Data Analysis: Use logger pro to graph your data. Time needs to be on the x axis and position (x) on the y axis.

After you have a graph, check the correlation to see if its linear. If not, make the appropriate modifications.

Once you have a linear graph, make sure the connecting point is OFF, point protectors is ON, put on the line of best fit and make sure the position (0, 0) is visible on your graph. Hit print screen, paste it in Microsoft Word, save it as a file extension that will work on your computer, and email it to your group.

Now you need to list the slope and y-int. (with the proper units)

Write an equation for your data using your slope and y-int.

Lastly, write one complete sentence explaining the meaning of your slope and another sentence explaining the meaning of your y - int.

Conclusion: In a list, not a paragraph, explain the:

- true meaning of the y-int.*
- true meaning of the slope*
- the difference between speed and velocity*
- the difference between position and distance*
- explain what a positive slope means and what a negative slope means.*
- list the two versions of the generic equation we developed that can be used for any object moving at a constant speed.*