Name: Date: Period:

Car Lab #1

Procedure:

a) Find a spot on the hallway for your group and mark one-meter intervals on the floor with the dry-erase marker from zero to five meters.
b) Set the car at the zero mark (the starting line)
c) Run the car. Make a mark on the ground where the car is at 2, 4, 6, 8, 10, and 12 seconds.
d) Measure how far each mark is from the starting point with your meter stick. *Make your measurements in meters.*
e) Repeat all of these steps two more times so that you have a total of three trials
f) Repeat all of these steps for the other car
g) When you are finished, make sure to use a rag to erase all of the marks on the floor.

Pre-Lab: After reading the procedure, identify each of the following:

Independent Variables	Dependent Variables	Control Variables

Data

Red Car:

Time (s)	Distance Traveled (m)			
	Trial #1	Trial #2	Trial #3	Average
2				
4				
6				
8				
10				
12				

Blue Car:

Time (s)	Distance Traveled (m)			
	Trial #1	Trial #2	Trial #3	Average
2				
4				
6				
8				
10				
12				

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Graph: Make a graph on Desmos. Submit a link to the graph on Schoology

a) Start by making a table by clicking the "+" icon at the top
b) Make sure to label the axes using the wrench icon at the right.
c) Zoom out so that you can see the whole graph and so that it fills the page. (you can use the Zoom Fit magnifying glass to do this.)
d) Create a best fit lines by graphing the equations: $y_1 \sim m_1 x_1 + b_1$ and $y_2 \sim m_2 x_2 + b_2$.
e) Copy the "share this link" link in the export button. Paste it to the appropriate place on Schoology

Best fit lines: Write down the equations for each of the best fit lines below:

Line #1:

Line #2:

Analysis

1. What is the physical meaning of the slope of each of the lines? Explain.

2. Just by looking at the graph, how can you tell which car is faster?

3. How does this graph show that these cars have a constant velocity?

4. Are your results accurate? Explain.

5. Are your results precise? Explain.

6. What were some aspects that limited the accuracy of our graphs and/or our precision? What could be done to mitigate these in future experiments?