**General Physical Science – Bubble Tube Lab**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_\_\_

|  |
| --- |
| I can… |
| *Calculate speed by measuring the slope & create distance-time graphs.* |

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| SAFETY |
| Bubble tubes are **fragile** and anyone who breaks or damages a bubble tube will receive a ZERO on the lab for YOU and YOUR PARTNER, end of story. At all times while holding the bubble tube, ***have both hands on the tube with your hands far apart!*** DO NOT lean them against the wall or table. DO NOT use them in anyway other than what is specified for the lab.  Careless behavior with the tubes will result in a ZERO. |

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| ***Bubble Tube lab*** | | | | |
| *Materials*  -stopwatch -red tube -blue tube -green tube -meter stick | | | | |
| *Procedure*   1. Select a tube to start with. One person should hold the tube with ***both hands far apart at all times***. 2. Hold the tube so that the bubble is at the bottom end of the tube. 3. The other person should have the stopwatch reset to 0:00:00. When the person holding the tube says “GO!”, they should hold the tube **upright**, with the bubble at the **bottom** and the other person starts the stopwatch. 4. When the **bottom** of the bubble passes the first mark, say “STOP” and stop the timers. Record the time. Record the distance to the first mark. 5. Repeat two trials for each color tube. | | | | |
| Bubble Tube color: | | | | |
|  | Distance (cm) | Trial #1 | Trial #2 | Average time |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| 4 |  |  |  |  |
| Bubble Tube color: | | | | |
|  | Distance (cm) | Trial #1 | Trial #2 | Average time |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| 4 |  |  |  |  |
| Bubble Tube color: | | | | |
|  | Distance (cm) | Trial #1 | Trial #2 | Average time |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| 4 |  |  |  |  |
| Create a graph with your data below. Label the x-axis “**Average** **Time (s)**” and the y-axis “**Distance (cm)**”. The y-axis scaled should be by 2, the x-axis scale should be by 1.  Plot your points in **different** **colors** for each bubble tube. Use a ruler to do a **best-fit line for each color**. Try to fit the data, but it might not go through any point! It should start at (0,0). | | | | |
| http://www.classroomjr.com/wp-content/uploads/2010/05/25-inch-grid-paper.gif | | | | |
| **Conclusions** | | | | |
| 1. In which tube was the bubble traveling the fastest? 2. Which color line had the steepest slope? 3. What is the connection between question 1 and 2? 4. Using your graph, find how far did the bubble in the **red** tube traveled in 6.5 seconds. 5. Using your graph, find how far did the bubble in the **blue** tube traveled in 6.5 seconds. 6. Using your graph, find how far did the bubble in the **green** tube traveled in 6.5 seconds. | | | | |