

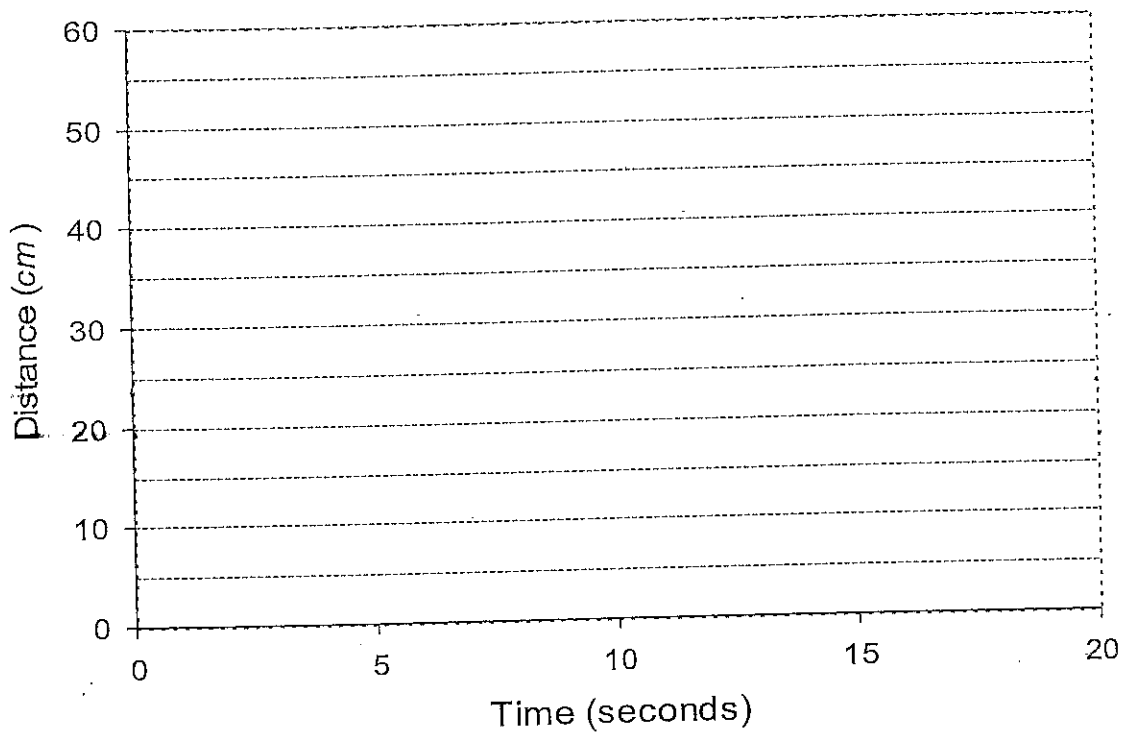
**Speed of the Bubble Experiment
Results and Questions**

Name _____
Period _____ Date _____

Tube Color:	
Time (s)	Distance (cm)

Tube Color:	
Time (s)	Distance (cm)

Tube Color:	
Time (s)	Distance (cm)



Questions:

- How far did the bubble in the green tube travel in 6.5 seconds? _____
(To answer this, find the point on the best-fit line that is exactly above the 6.5 second mark on the bottom of the graph. Then trace horizontally to the left side to find the distance.)
- How far did the bubble in the red tube travel in 6.5 seconds? _____
- How far did the bubble in the blue tube travel in 6.5 seconds? _____
- In which tube was the bubble the fastest? _____
- Which tube had the steepest best-fit line? _____
- Is there a connection between your answers to questions 4 and 5? _____

**Speed of the Bubble Experiment
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Period _____ Date _____

In the field of math, we often use the word "slope" when we want to use numbers to say how steep something is. Slope is defined as *Rise* divided by *Run*. Rise is a vertical measurement, and run is a horizontal measurement.

7. Find the slope of the graphed line from the red tube. Follow these steps:
- (a) Mark two points on the line, and label them "A" and "B." The points should be on the line, and far apart. Try to choose points that will make it easy to read the distance and time measurements. Fill in the blanks for the points you have chosen:
 Point "A" corresponds to a distance of _____, and a time of _____.
 Point "B" corresponds to a distance of _____, and a time of _____.
 - (b) Rise is the vertical distance between A and B. Run is the horizontal distance.
 Use your answers from part (a) above to calculate the Rise and Run:
 Rise = _____ minus _____ = _____.
 Run = _____ minus _____ = _____.
 (Did you remember to include units of measurement in your work above?)
 - (c) Now calculate the slope:
 Slope = Rise divided by Run = _____.
 (Remember to include units of measurement)

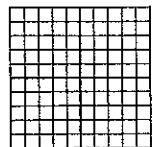
8. Follow the steps for #7 above to find the slope of the graphed line for the green tube.

9. Follow the steps for #7 above to find the slope of the graphed line for the blue tube.

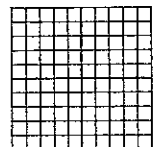
10. In the calculations above, you divided rise by run. The rise was a distance, and the run was a time. "Distance divided by time" is the formula for calculating _____.

The slope of a distance vs. time graph is the _____ of the moving object.

11. Imagine an object that traveled at a steady speed, and then stopped and remained motionless for a while. Sketch the shape of graph that would result.



12. Imagine an object that goes faster and faster as it travels. Sketch of the shape of graph that would result.



13. What feature of the graphs from this experiment shows that the bubbles traveled at constant speeds?