

Name: _____

Date: ___ / ___ / ___ Block: _____

Graphing Student Motion I

Problem

How would a person move to demonstrate constant speed?

Materials

- meter stick
- stopwatch
- flat walking surface

Procedure

1. Five students with stopwatches stand at uniform intervals from 1 to 3 meters. The student who is walking begins before the starting line so that he or she has a constant speed when the stopwatches begin.
2. When the walker passes the starting line, she shouts, "Go!" All timers start their stopwatches.
3. When the walker passes a timer, that timer stops his watch.
4. Record your data in the table, **with appropriate labels**. Calculated answers are to be rounded to the nearest tenth.
5. Repeat two more times at the same constant speed.

Data

Timer	Distance	Time	Average Speed
1			
2			
3			
4			
5			

6. Make a distance vs. time graph. Draw a line of best fit for the data. Find the slope of the line.
7. Make an average speed vs. time graph. Compare the "average" of your average speed vs. time graph with the slope of the distance vs. time graph.

Summing Up

1. If a person walks at a constant speed, how does the average velocity for each timer compare?
2. If stopwatches were unavailable, how could one determine if the speed was constant? How would a person's motion look? Explain.