

Walk This Way

Purpose:

To determine the average velocity of several individuals moving at different speeds and directions.

Procedure:

See Pages 372-3 in “BC Science 10” (Conduct an Investigation 8-2E “Walk This Way”) Note: additional trials will be recorded as indicated by the data tables below.

Data Tables:

Walking Forward											
Position (m)	0	5	10	15	20	25	30	35	40	45	50
Time (s)	0										

Jogging Forward											
Position (m)	0	5	10	15	20	25	30	35	40	45	50
Time (s)	0										

Running Forward											
Position (m)	0	5	10	15	20	25	30	35	40	45	50
Time (s)	0										

Walking Backward											
Position (m)	50	45	40	35	30	25	20	15	10	5	0
Time (s)	0										

Analysis of Results:

- On the same set of axes, plot a position-time graph for all 4 sets of data.
- On the graph:
 - Draw a best-fit line for each set of data.
 - Calculate the slope of each of the best fit lines. (make sure to include units)
- What is the average velocity of the student...
 - Walking forward?
 - Jogging forward?
 - Running forward?
 - Walking backward?
- Was the average speed of the student faster when walking forward or backward?
- Did any of the students have perfectly uniform motion while walking, jogging or running forward or backward? Use your graph to justify your answer.

Conclusion:

What can you infer about the slope of a position-time graph of an object's and its average velocity? Include comments about the steepness of the slope and whether it is positive or negative.

