

## Grocery Trek Optional Scaffolds and Extensions

### OPTIONAL SCAFFOLDS FOR PART 2

**Method A:** Travel a fixed distance and time it.

Time how long it takes you to walk or travel via a wheelchair a fixed distance to find your walking rate. Measure an agreed-upon distance using a measuring tape and time how long it takes you to walk that distance. Your walking or travel rate should be expressed in feet per second (*or how many feet you travel in one second*). As your team is working, take note of how you round any of your estimates. How might different rounding choices affect your rate?

a) What is your walking or travel rate (in feet/second) (or how many feet you travel in one second)? (Don't forget to take the mean, or average, after doing this 2 to 3 times.)

b) What are your teammates' mean travel rates (in feet/second) (or how many feet do your teammates travel in one second)? What might account for differences in rates? How might others travel (e.g., with a walker, crutches, wheelchair)?

What is the distance being traveled? \_\_\_\_\_ (make sure to include units)

Time (seconds) to travel the distance	Name	Name	Name	Name
Attempt 1				
Attempt 2				
Attempt 3				
Average or mean time (seconds)				
Average or mean travel rate (include units, e.g., feet/second)				

**Method B:** Walk (or travel via a wheelchair, etc.) for a fixed amount of time (e.g., 10 seconds) and measure how far you traveled.

Begin by marking a starting point on the ground. A teammate will use a stopwatch or other timing device and tell you when to begin and end. When your teammate tells you to begin, walk or travel at your normal pace and in a straight line. Stop as soon as your teammate tells you to end. Measure the distance you traveled.

a) What is your walking or travel rate (in feet/second) (or how many feet you walk or travel in one second)? (Don't forget to take the mean, or average, after doing this 2 to 3 times.)

b) What are your teammates' mean rates (in feet/second) (or how many feet do your teammates travel in one second)? What might account for differences in rates? How might others travel (e.g., with a walker, crutches, wheelchair)?

What is the time (seconds) being traveled? \_\_\_\_\_

Distance traveled (indicate units)	Name	Name	Name	Name
<b>Attempt 1</b>				
<b>Attempt 2</b>				
<b>Attempt 3</b>				
<b>Average or mean distance</b>				
<b>Average or mean travel rate (include units, e.g., feet/second)</b>				

### Optional Scaffolds for Part 3: Steps Tracker

a) If you are someone who walks, find your step length. Your step length is considered the distance traveled in one step, or the distance from the heel (or toe) print of one foot to the heel (or toe) print of the other foot during one walking stride. (For reference, see “How to Set Your Pedometer or Fitness Band for Better Accuracy” by Wendy Bumgardner (<https://bit.ly/3rvLPr1>))

(Note: Stride length is considered the distance traveled in two steps. This question relates to pedometers and steps trackers, and other means of transportation should also be discussed: traveling with a wheelchair, walker, canes, crutches, etc.)

b) What might be an accurate way to do this? How might finding your step length connect to travel rates found using Method A or B from above?

c) If you are someone who walks, how many steps would you take walking 2.2 miles? How did you figure this out? For someone who does not walk, what might we investigate or consider?

### Optional Part 5: Graphing Distance Versus Time for the Trip

Graph distance versus time for your and Akeelah's trip. What does the graph look like while you are not traveling (e.g., waiting in line at the grocery store)?

***Extension:***

- a) If you and Akeelah take the bus, how long do you have to wait? What would the distance versus time graph look like?
- b) What would a velocity versus time graph look like? [This is an idea for high school mathematics and can even get into calculus content.]