

Background content: Prior to doing this activity, students should have working knowledge of the following:

- Graphing and evaluating linear functions
- Creating linear functions based on two points
- Understanding on how to determine slope of a line

Philosophy behind this activity:

This activity provides students with a real scenario to apply their knowledge about linear equations.

Learning Goals:

1. Evaluating the relationship between distance, time, and rate of change
2. Graphing linear functions based on data from a table
3. Creating equations for two linear functions
4. Determining average rate of change given a data set and where the functions are increasing/decreasing/zero slope

Implementation Notes:

1. Since the activity is based on a real scenario, I have held back on immediately assisting students that are struggling with the material, as many of them are well-equipped to find solutions. With that being noted, many students rush through the table and make a mistake on the speed at 1.6 miles. After students have filled in the table, I have addressed this common mistake by making sure I ask students how they found their values. This discussion typically results in them making modifications to their values at 2.0 and 3.2 miles.
2. Question 4 asks students to create equations. This may be a stopping point for the class if review is needed on piecewise functions. The piecewise functions are needed for question 7.
3. Question 8 is more challenging for students and requires them to create a new graph based on distance from starting point instead of total distance. Question 9 is related to question 8.