

Gamble, Kelsey
TE 855 – Gundlach
October 16, 2016

Lesson Plan

Name: Kelsey Gamble	Date of lesson: TBD – In Mid-November
Lesson Title: Explore Learning Gizmos – Distance-Time Graphs	
Fundamental Mathematics Concepts (with concept descriptions): <ul style="list-style-type: none">• Slope – Rate of change or rise over run.• Speed – In the case of a distance-time graph the speed is another way to describe “slope.”• Y-intercept – The point where the graph crosses the y-axis (or vertical axis), also referred to as the “initial value” on distance-time graphs.	
Mathematical Goal(s) for the Lesson: <ul style="list-style-type: none">• Students will gain an understanding of the parts of a distance-time graph. Including what happens if the line has a positive slope (moving forward), negative slope (moving backward), zero slope (standing still) also how the steepness of the slope affects the speed of the object (in this case the racer).	
Common Core (give details including chapter and verse): <ul style="list-style-type: none">• CCSSM.8.EE.B.5 – Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of the two moving objects has greater speed.• CCSSM.8.F.B.4 – Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models and in terms of its graph or a table of values.• CCSSM.8.F.B.5 – Describe qualitatively the functional relationship between two quantities by analyzing a graph. Sketch a graph that exhibits qualitative features of a function that has been described verbally.	
Tools for Enhancing Discourse (materials needed for the lesson): <ul style="list-style-type: none">• A laptop• <i>Student Exploration</i> packet (included)	
Considering a Sequence of Lessons: Previous lesson: Calculating slope based on rates. This lesson: Distance – Time Graphs Subsequent lesson: Creating Distance-Time Graphs based on short videos.	

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Lesson Plan Sequence (What tasks will you pose? What clarifying, probing questions might you ask? What information and notation might you provide?)	Time	Anticipated Student Thinking (What do you anticipate student thinking to look like and sound like?)	Responses to Student Thinking/Formative Assessment (What will you look for and listen for as indicators and evidence of understanding and how will you respond to student thinking?)
“Prior Knowledge Questions” <i>See: Student Exploration</i>	5 min	Students will say that Max ran faster because he ran farther.	Explain to students that they have to calculate the rate for each person which shows that Molly ran faster even though she didn’t run as far.
Students will get their computers and log into Gizmos.	5 min		
Students will complete the “Gizmo Warm-up”	5 min	Students will gain an understanding of how to manipulate the Gizmo so they are able to answer the questions and perform the tasks.	Teacher will circulate the classroom making sure students are on task and understand how to manipulate the various portions of the Gizmo.
“Activity A – Runner Position”	10 min	Students will work through the activity, discussing with their small groups. Students should start to discover that the x-axis tells the time on the stop watch and the y-axis tells the distance from the start line. Students should also understand the y-intercept tells where the runner starts his race.	Teacher will continue to circulate asking questions and checking for understanding at the various small groups.
“Activity B – Runner Direction and Speed”	15 min	Students will work through the activity and manipulate the Gizmo. Students should make connections that positive sloped graphs have the runner moving forward (away from the starting point) and negative sloped graphs have the runner moving backward (toward the starting point). Students should also discover that when the graph is flat (zero slope) the runner is standing still.	Teacher will continue to circulate around the classroom. Making sure students are grasping concepts by asking questions with the various groups.

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Wrap-up	5 min	Teacher will ask questions about what students learned guiding them to the main points: <ul data-bbox="730 289 1369 435" style="list-style-type: none">• Positive Slope – the runner moves forward.• Negative Slope – the runner moves backward.• Zero Slope – the runner is standing still• Y-Intercept – the starting point of the runner.	