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| **LG #** | **MCR04** | **Standards:** | **8.EE.2.5, 8.F.2.4, F-BF.1.1a,b, F-IF.1.1, S-ID.3.7** |
| **4.0** | **In addition to Score 3.0, in-depth inferences and applications that go beyond instruction to the standard.**  **The student will be able to:**   * Interpret, analyze, and describe graphs of functions within interdisciplinary contexts (i.e. population growth, census data, global warming, etc.) * Create a mathematical situation where real-world data can be collected and modeled using a proportional relationship.   **No major errors or omissions regarding the score 4.0 content.** | | |
| **3.5** | In addition to 3.0, in-depth inferences and applications with partial success. | | |
| **3.0** | **Students will be able to understand the concept of a function and use them to model relationships between quantities, combining standard functions using arithmetic operations.**  **The student will be able to:**   * Construct a function to model a linear relationship between two quantities. (8.F.2.4) * Determine the rate of change and initial value of the function from a description of a relationship or from two ordered pairs, including identifying these from a table or from a graph. (8.F.2.4) * 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. (8.F.2.4) * Identify the slope of a linear relationship from equations, tables, and graphs. (8.EE.2.5) * Interpret the unit rate as the slope of a linear function. (8.EE.2.5) * Compare two proportional relationships represented in different ways (i.e. compare a distance-time graph to a distance-time equation to determine which of two moving objects has a greater speed). (8.EE.2.5) * Combine standard function types using arithmetic operations (F-BF.1.1.b) * Write an explicit and/or recursive expression of a function to describe a real-world problem. (F-BF.1.1.a) * Understand that a function from one set (domain) to another set (range) assigns to each element of the domain exactly one element of the range (F-IF.1.1) * Interpret the slope (rate of change) of a linear model in the context of the data  (S-ID.3.7) * Interpret the intercept (constant term) of a linear model in the context of the data * (S-ID.3.7)   **No major errors or omissions regarding the score 3.0 content (simple or complex).** | | |
| **2.5** | No major errors or omissions regarding 2.0 content and partial knowledge of 3.0 content. | | |
| **2.0** | **The student recognizes and describes specific terminology such as:**   |  |  |  | | --- | --- | --- | | * Function | * Linear function | * Input/output | | * Function rule | * Non-linear | * Independent variable | | * Ordered pair (*x, y*) * Initial value | * Rate of change/slope * Increase/decrease | * Dependent variable * Linear Regression | | * Unit rate | * *y-*intercept | * Constant rate of change | | * Slope | * Slope-intercept form | * Proportional relationship |   **The student will be able to:**   * Identify the graph of a straight line as having a constant rate of change. (8.EE.2.5) * Identify proportional relationships given a table or graph. (8.EE.2.5) * Write a linear function rule for a given relationship. (8.F.2.4) * Identify the type of function given a graph. (8.F.2.5) * Given an equation or a proportional relationship, students can construct a graph of the relationship. (8.EE.2.5) * Represent proportional relationships with equations. (8.EE.2.5) * Identify the unit rate in tables, diagrams, and verbal descriptions of proportional relationships. (8.EE.2.5)Determine an explicit expression or a recursive process for a function. (F-BF.1.1.a) * Understand function notation (F-IF.1.1) | | |
| **1.5** | Partial knowledge of the score 2.0 content, but major errors or omissions regarding score 3.0 content. | | |
| **1.0** | With partial understanding of some of the simpler details and processes and some of the more complex ideas and processes. | | |
| **0.5** | With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes. | | |
| **0.0** | Even with help, no understanding or skill is demonstrated | | |