MRS. GAWLIK/MRS. CACHIA October 20-25, 2014

**Monday, October 20 and Tuesday, October 21, 2014**

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| **Content Standard:**  **Understand the connections between proportional relationships, lines, and linear equations.**   * 8.FA.3 Interpret the equation y=mx+b as defining a linear function whose graph is a straight line; give examples of functions that are not linear. | **ELP Standard:**  English language learners communicate information, ideas and concepts necessary for academic success in the content area of Mathematics. |
| **Content Objective:**  I can demonstrate evaluation of inverse variation by examining the relationship between speed and time for a fixed distance. | **Language Objective:**  I can write to answer questions about inverse variation using graphical information. |
| * TARGET STATEMENT:   **I CAN**   1. I can answer questions about the relationships among time, speed and distance. {Distance equals speed times time (d-st), speed equals distance divided by time (s=d/t) and time equals distance divided by speed (t=d/s)} | |
| **Key Vocabulary:**  Independent and Dependent variable, linear relationship, nonlinear relationship, x-axis, y-axis, variables, function, mathematical model, residual, slope, additive inverse, multiplicative inverse, inverse variation  **HOTS (Questions):**   * How are these two equations related? (They are equivalent. We could get the second from the first by multiplying both sides by x.) * How are graphs of the inverse variation examples of Problem 3.1 similar to the data plots of the bride-length experiment in Problem 1.2? (These graphs have the same overall shape, although they pass through different points.) | **Content Specific:**   * If you are on a car trip and driving 60 mi/h, what two variables might you be interested in? (Time and distance) * What equation relates time and distance? (d-60t, where d is the distance in miles and t is the time in hours) * Is this a linear relationship? (yes) * How do you know? (The equation fits the form y=mx+b; the graph is a straight line, the table shows an increase of 60 miles per every 1-hour increase in time.)   **General Terms:**   * Suppose you are going on a car trip of 60 miles. How long will the trip take if you travel at a speed of 60 miles/hr? (1 hour) * What would the time be if you traveled more slowly, at 30mi/h? (It would take 2 hours.) |
| **Visuals, Materials, & Text**  **TEXT:** Thinking with Mathematical Models  **VISUALS:** Show Launch  **MATERIALS:** Labsheet 3.2A (Graphs-1 per group), Labsheet 3 ACE (Exercises 4-7) | **Accommodations**  **Partners, small groups, master copy of graphs** |
| **Wrap up/Ticket Out**   * Today I learned….. | |

**Wednesday, October 22, 2014 (Technology)**

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| * TARGET STATEMENT * I can use technology as a tool to assist me with math concepts. |

**Thursday, October 23, 2014**

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| **Content Standard:**  **Understand the connections between proportional relationships, lines, and linear equations.**   * 8.FA.3 Interpret the equation y=mx+b as defining a linear function whose graph is a straight line; give examples of functions that are not linear. | **ELP Standard:**  English language learners communicate information, ideas and concepts necessary for academic success in the content area of Mathematics. |
| **Content Objective:**  I can demonstrate comprehension of inverse relationships by completing Problem 3.3. | **Language Objective:**  I can write to answer questions of inverse relationships using content specific vocabulary. |
| * TARGET STATEMENT:   **I CAN**   1. I can explain how the cost per person changes if a fixed total cost is split among an increasing number of individual players. | |
| **Key Vocabulary:**  Independent and Dependent variable, linear relationship, nonlinear relationship, x-axis, y-axis, variables, function, mathematical model, residual, slope, additive inverse, multiplicative inverse, inverse variation  **HOTS (Questions):**   * What kind of relations between the number of students and cost should the teachers expect? * How can that relationship be expressed with an equation and a graph? | **Content Specific:**   * What happens to the per-student cost when the number of students doubles from 20-40? (The per-student cost is halved. The cost per student when 20 go is $37.50. If 40 students go, the cost per student would be $18.75.) * What happens when the number of students doubles from 40-80? (The cost is halved again.) * Why does it make sense that the per-student cot is halved when the number of students doubles? (If you spread the cost among twice as many people, each person pays half as much or half of what they were going to pay originally.) * How can you identify this pattern from the equation? (The equation is c=750/n, because n is the denominator of c=750/n, if n is doubled, c is halved. \* If you divide 750 by 20, you get half of what you get when you divide 750 by 10) * What is the relationship among cost per student, number of students, and total cost? (c=T/n, n=T/c, or T=c/n)   **General Terms:** |
| **Visuals, Materials, & Text**  **TEXT:** Thinking with Mathematical Models  **VISUALS:** None  **MATERIALS:** | **Accommodations**  **Partners, small groups, master copy of tables, graphs** |
| **Wrap up/Ticket Out**   * Today I learned….. | |

**Friday, October 25, 2014**

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| **Content Standard:**  **Understand the connections between proportional relationships, lines, and linear equations.**   * 8.FA.3 Interpret the equation y=mx+b as defining a linear function whose graph is a straight line; give examples of functions that are not linear. | **ELP Standard:**  English language learners communicate information, ideas and concepts necessary for academic success in the content area of Mathematics. |
| **Content Objective:**  I can demonstrate comprehension of inverse relationships by completing Problem 3.4. | **Language Objective:**  I can write to answer questions of inverse relationships using content specific vocabulary. |
| * TARGET STATEMENT:   **I CAN**   1. I can use a table or graph to determine if a mathematical model suggests an inverse variation | |
| **Key Vocabulary:**  Independent and Dependent variable, linear relationship, nonlinear relationship, x-axis, y-axis, variables, function, mathematical model, residual, slope, additive inverse, multiplicative inverse, inverse variation  **HOTS (Questions):**   * What are the variables involved? (w and l) * What is the form of the function that you would expect? (w=k/l) * How would you guess the value of k? (Look at the product of w and l in a few cases.) | **Content Specific:**   * What functions did you come up with? (Inverse function) * How did you find the functions? (Students should show an understanding of how to use a table or a graph)   **General Terms:** |
| **Visuals, Materials, & Text**  **TEXT:** Thinking with Mathematical Models  **VISUALS:**  **MATERIALS:** | **Accommodations**  **Partners, small groups,** |
| **Wrap up/Ticket Out**   * Today I learned….. | |