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| **Learning Target(s):**   1. Summarize, represent and interpret data.  * I can interpret the slope (rate of change) and the y-intercept (constant term) of a linear model in the context of the data. * I can determine and interpret the correlation coefficient for a linear association. * I can distinguish between correlation and causation. | | | **Pacing:**  2 Days | |
| **In previous grades, students have:**   * In 7th Grade students draw inferences about populations based upon samples. * In 6th Grade students develop an understanding about statistical thinking. * In 4th Grade students develop an understanding of fluency with multi-digit multiplication and dividing to find quotients with multi-digit dividends. * In 2nd Grade students build fluency with addition and subtraction. | | | | |
| **Success Criteria** (to be able to do this, students must learn and understand…):   * Understand how to represent the constraints and variables mathematically. * Understand how to select appropriate mathematical methods to use. * Understand how to make sensible estimates and assumptions. * Understand how to investigate a real world statistical problem. * Understand how to communicate their reasoning clearly. | | **Performance Task** (students will show they can do this by):   * Interpret a situation and represent the constraints and variables mathematically. * Select appropriate mathematical methods to use. * Make sensible estimates and assumptions. * Investigate a real world statistical problem. * Communicate their reasoning clearly. | | |
| **Suggested Activity:**  This lesson unit is intended to help you assess how well students understand the notion of positive correlation. In particular this unit aims to identify and help students who have difficulty in:   * Understanding correlation as the degree of fit between two variables. * Making a mathematical model of a situation. * Testing and improving the model. * Communicating their reasoning clearly. * Evaluating alternative models of the situation.   This lesson unit is structured in the following way:   * Before the lesson, students work individually on an assessment task designed to reveal their current understanding and difficulties. You then review their work and create questions for students to answer in order to improve their methods. * At the start of the lesson, students work alone answering your questions, then work collaboratively in small groups to produce, in the form of a poster, a better solution to the task than they did individually. In a whole-class discussion students compare and evaluate the different methods they have used. * Then, working in the same small groups, students analyze sample responses to the task. In a whole-class discussion students explain and compare the alternative methods. * In a follow-up lesson, students review what they have learnt.   Activity Link: <https://www.map.mathshell.org/lessons.php?unit=9410&collection=8>  **Re-teaching:**  Student Focus Questions and Thinking Guide:   * What is known and what is unknown? * What are you asked to find out? * What kind of representation will help you tackle this problem?   *Try not to make suggestions that move students towards a particular approach to this task. Instead, ask questions that help students to clarify their thinking and encourage checking:*   * Can you set out your work using a table or diagram? * What would be a good way? * What assumptions have you made? * How can you check your solution? * Do you think there is just one solution?   **Extension:**   * What was your strategy for solving this problem? * What do you know now that you did not know before? * Would you continue to use this strategy on similar problem types? * Are there any other approaches you could try?   Peer Reflection/Assessment:   * If you are visiting another group, read through their work. If their work makes sense, explain it in your own words. If the work does not make sense to you, ask for clarification. * If you are staying at your desk, either carefully listen to the explanation and check it matches your own thinking or answer the visiting students’ questions. * You may then want to consider improving your artifact. | | | | |
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| **EL Accommodations:**   * Reading and writing prompts. * Provide written instructions. * Provide a vocabulary list. * Peer support. * Discourse strategies. | | | | |
| **Vocabulary:**   * Frequency Table * Relative Frequency * Observational Studies * Sample Survey * Experiment * Outlier * Variance * Spread * Box Plot * Interquartile Range * Correlation * Causation * Standard Deviation * Residuals * Median * Mean * Mode | **Aligned Resources:**   * **Lesson PDF:**   <https://www.map.mathshell.org/download.php?fileid=1778>   * **Lesson Slide Set:**   <https://www.map.mathshell.org/download.php?fileid=1779> | | | **Blooms:** Evaluate  **DOK:** 3  **21st Century Skills:**  Learning and Innovation Skills:   * Creativity and Innovation * Critical Thinking and Problem Solving * Communication * Collaboration   Information, Media and Technology Skills:   * Information Literacy * Media Literacy * Technology Skills |
| **Test Item Exemplars:**  Students will perform the “Devising a Measure: Correlation” activity on (pg. T-2 and S-1 of linked MAP Mathshell lesson)… Then, after individual and peer reflections, they shall create their own rationale statements for each exemplar with corrected procedures and conclusions. | | | | |