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| **Learning Target(s):**   1. Summarize, represent and interpret data.  * I can construct a scatter plot of bi-variate quantitative data describing how the variables are related; determine and use a function that models the relationship:   + I can construct a linear function to model bi-variate data represented on a scatter plot that minimizes residuals.   + I can construct an exponential function to model bi-variate data represented on a scatter plot that minimizes residuals. | | | **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 structured in the following way:   * Before the lesson, students work individually on a task that is designed to reveal their current understandings and difficulties. You review their work and create some questions that will help them to improve their solutions. * At the start of the lesson, students role-play a scene that provides the background to the lesson task. * Next, students work in small groups on a collaborative discussion task. They extract information from evidence and critically assess how it was gathered and presented. * After a whole-class discussion students again work individually, on a new task. This has similar content to the original task, allowing them to demonstrate the progress they have made during the lesson.   Activity Link: <https://www.map.mathshell.org/lessons.php?unit=9400&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 * Outlier * Variance * Spread * Box Plot * Interquartile Range * Median * Mean * Mode | **Aligned Resources:**   * **Lesson PDF:**   <https://www.map.mathshell.org/download.php?fileid=1774>   * **Lesson Slide Set:**   <https://www.map.mathshell.org/download.php?fileid=1775> | | | **Blooms:** Analyze  **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 “Muddying the Waters” 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. | | | | |