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| **Learning Target(s):**   1. Interpret and use structure.  * I can interpret the structure of expressions. * I can perform and explain the orders of operations. * I can justify my conclusions regarding equivalence of expressions. | | | **Pacing:**   * 2 Days | |
| **In previous grades, students have:**   * In 7th Grade students develop an understanding of rational numbers and work with expressions and linear equations. * In 6th Grade students write interpret and use expressions and equations. * 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 recognizing the order of algebraic operations. * Understand how to recognizing equivalent expressions. * Understanding the distributive laws of multiplication and division over addition (expansion of parentheses). | | **Performance Task** (students will show they can do this by):   * Recognize and justify the order of algebraic operations. * Recognize and justify conclusion regarding equivalent expressions. * Use the distributive laws of multiplication and division over addition (expansion of parentheses). | | |
| **Suggested Activity:**  This lesson unit is intended to help you assess how well students are able to translate between words, symbols, tables, and area representations of algebraic expressions. It will help you to identify and support students who have difficulty:   * Recognizing the order of algebraic operations. * Recognizing equivalent expressions. * Understanding the distributive laws of multiplication and division over addition (expansion of parentheses)   Activity Link: <https://www.map.mathshell.org/lessons.php?unit=9225&collection=8>  **Re-teaching:**  Student Focus Questions and Thinking Guide:   * Check your answers with your (scientific) calculator. How is your calculator working these out? * So what does 4 + n × 5 mean? Does it fit the extension of the shown pattern? Explain your reasoning. * How would you write expressions for these areas? (see pg. T-3 of linked lesson for area models) * Can you represent these area models in (multiple) different ways?   *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:*  **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 idea/position. | | | | |
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| **EL Accommodations:**   * Students must interpret sentences and relate them to equivalent symbolic expressions. * Peer support. * Discourse strategies. * Reading and writing prompts. * Provide written instructions. * Provide a vocabulary list. | | | | |
| **Vocabulary:**   * Real Number * Quadratic * Fundamental Theorem of Algebra * Linear * Expression * Equation * Exponential * Domain * Range * Functional Notation | **Aligned Resources:**   * **Lesson PDF:** <https://www.map.mathshell.org/download.php?fileid=1726> * **Lesson Slide Set:**   <https://www.map.mathshell.org/download.php?fileid=1727> | | | **Blooms:** Analyze  **DOK:** 2  **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 “Interpreting Expressions Assessment” 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. | | | | |