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| **Content:** **Order of Operations with Rational Numbers** | | | |
| Applies the order of operations to evaluate expressions without exponents  2 + 5 × 4 ÷ (3 ‒ 1)  **“I did the subtraction in the brackets first.**  (3 ‒ 1) = 2  **Then, I multiplied and divided.**  5 × 4 = 20 and 20 ÷ 2 = 10  **Then, I added.**  2 + 10 = 12” | Applies the order of operations to evaluate expressions with rational numbers, including brackets and exponents  32 + (2.1 ‒ 3.8) × (‒)  **“I did the subtraction in the brackets first.**  2.1 ‒ 3.8 = ‒1.7  **Then, I did the exponent.**  32 = 9  **Then, I multiplied.**  ‒1.7 × (‒) = ‒1.7 × ‒0.5  = 0.85  **Then, I added.**  9 + 0.85 = 9.85” | Writes an expression that could be used to solve a contextual problem involving the order of operations  A student has been hired to paint a 5.5-m by 5.5-m ceiling. They charge $15/m2. They paid $53.25 for paint and needed two roller refills at $7.25 each. How much profit did the student make?  “I wrote this expression, considering the order in which the operations should be performed:  (5.5)2 × 15 ‒ 53.25 ‒ 2 × 7.25” | Creates and solves a contextual problem involving the order of operations with rational numbers  “Cathy bought some party supplies: 2 packages of napkins for $2.25 each, a package of balloons for $1.79, and 3 streamers for $3.29 each. Everything was taxed at 13%. Cathy paid with a $20 bill. How much change did Cathy get?  20 ‒ (2.25 × 2 + 1.79 + 3 × 3.29)  × 1.13  I used the order of operations to evaluate the expression.  Cathy got $1.75 in change.  I rounded to the nearest nickel.” |
| **Observations/Documentation** | | | |
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| **Competency:** **Communication** | | | |
| Communicates that there is an order in which operations should be performed  “Operations have to be performed in a certain order to be sure everyone gets the same answer.” | Communicates the order in which operations should be performed  “When evaluating an expression,  we should follow BEDMAS: brackets, then exponents, then division and multiplication, then addition and subtraction.” | Communicates the rationale behind the order of operations  “Brackets are done first because what’s in them needs to be treated as a single number. Then, exponents as they represent repeated multiplication. Then division and multiplication because they involve groups, and finally that leaves addition and subtraction.” | Communicates how to solve a  real-world problem involving the order of operations  “First, I list the operations needed to solve the problem, and the order in which they need to be performed.  I then write the expression, using brackets when necessary, and follow BEDMAS to evaluate the expression.” |
| **Observations/Documentation** | | | |
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