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| Content Standard  | <p><b>MAFS.5.OA Operations and Algebraic Thinking</b></p> <p><b>MAFS.5.OA.1 Write and interpret numerical expressions.</b></p> <p><b>MAFS.5.OA.1.2</b> Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as <math>2 \times (8 + 7)</math>. Recognize that <math>3 \times (18932 + 921)</math> is three times as large as <math>18932 + 921</math>, without having to calculate the indicated sum or product.</p> |                 |
| Assessment Limits   | <p>Whole numbers only.<br/>         Simple fraction expressions.<br/>         Do not use nested parentheses.<br/>         Use numeric expressions only.<br/>         Multiplication cross symbol is the only acceptable symbol for multiplication. Do not use the c-dot.<br/>         When grouping symbols are part of the expression, the associative property or distributive property should be found in that expression.</p>  |                 |
| Calculator  | No   |                 |
| Acceptable Response Mechanisms  | <p>Equation Response<br/>         Multiple Choice Response<br/>         Natural Language Response</p>  |                 |
| Context   | No context   |                 |
| Example   |  |                 |
| Context   | <p>Use 4 numbers with expressions that do not require grouping (Multiply 3 and 4, then add 5).<br/>         Use 3 numbers with expressions that require grouping (Add 3 and 4, then multiply by 5).</p>  |                 |
| Context easier  | <p>Use only 3 numbers. Use direct words for the operations (add, subtract, multiply, divide, plus, minus, times). Use only whole numbers. Expressions that do not require grouping.</p>  |                 |
| Context more difficult  | <p>Use 5 numbers with expressions that do not require grouping ("Multiply 3 and 4, then add 5").<br/>         Use 4 numbers with expressions that require grouping (Add 3 and 4, then multiply by 5). Use indirect words for the operations (double, triple, sum, product) Include a fraction.</p>   |                 |
| Sample Item Stem  | Response Mechanism   | Notes, Comments |
| <p>An expression is described in words.</p> <p>Divide 10 by 2, then subtract 3.</p> <p>Create the expression using numbers and symbols.</p> | Equation Response  |                 |

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| <p>An expression is described in words.</p> <p>Subtract 6 from 9, then divide by 3.</p> <p>Create the expression using numbers and symbols.</p>   | <p>Equation Response</p>        |  |
| <p>An expression is described in words.</p> <p>Add 5 and 14, triple the sum, and then add four-fifths.</p> <p>Create the expression using numbers and symbols.</p>  | <p>Equation Response</p>        |  |
| <p>An expression is shown.</p> $18 + \frac{1}{2}(9 - 4)$ <p>Which statement describes this expression?</p> <ul style="list-style-type: none"> <li>A. Half the difference of 9 and 4 added to 18</li> <li>B. Subtract half the quantity of 9 and 4 from 18</li> <li>C. The sum of 18 and half the product of 9 and 4</li> <li>D. Half of 9 added to 18 minus 4</li> </ul>  | <p>Multiple Choice Response</p> |  |
| <p>An expression is shown.</p> $3 \times 4 \times 5 - 5 + 3$ <p>Which statement describes this expression?</p> <ul style="list-style-type: none"> <li>A. Three more than 5 subtracted from the sum of 3, 4, and 5</li> <li>B. The product of 3, 4, and 5 subtracted from 5 plus 3</li> <li>C. Multiply 3, 4, and 5, then subtract 5 and add 3.</li> <li>D. Three added to 5, then subtracted from the product of 3, 4, and 5</li> </ul> | <p>Multiple Choice Response</p> |  |