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| **NC.5.OA.2**  **Moving Parentheses** | |
| **Domain** | **Operations and Algebraic Thinking** |
| **Cluster** | **Write and interpret numerical expressions.** |
| **Standard(s)** | **5.OA.2** Write, explain, and evaluate numerical expressions involving the four operations to solve up to two-step problems. Include expressions involving:   * Parentheses, using the order of operations * Commutative, associative and distributive properties |
| **Materials** | Paper and pencil, Activity sheet (attached) |
| **Task** | **Moving Parentheses**  Consider the expression: 24 ÷ 4 + 2 – 1 x 3  Part 1:  Put parentheses in the following places and evaluate each expression.   1. Around 24 ÷ 4 2. Around 4 + 2 3. Around 2 – 1 4. Around 1 x 3   Part 2:  Consider the values of each expression above. How do the parentheses change the value of each expression?  Part 3:  Are some expressions the same regardless of the location of the parentheses? Why is this the case? |

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| **Rubric** | | |
| **Level I**  **Not Yet** | 1. **Level II**   **Progressing** | **Level III**  **Meets Expectations** |
| * Student is not yet able to solve the task. | * Student provides an accurate answer for each part   **OR**   * Student successfully explains their reasoning. | * Student completes all parts correctly:   + Part 1: a) 5, b) 1, c) 9, d) 5   + Part 2: The response is clear and accurate and explains that parentheses determine what operation is done first.   + Part 3: The student explains that A and D both have a value of 5. The response discusses that since multiplication and division are done first, the placement of the parentheses in A and D doesn’t influence the answer. |

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| **Standards for Mathematical Practice** |
| 1. Makes sense and perseveres in solving problems. |
| **2. Reasons abstractly and quantitatively.** |
| **3. Constructs viable arguments and critiques the reasoning of others.** |
| **4. Models with mathematics.** |
| 5. Uses appropriate tools strategically. |
| 6. Attends to precision. |
| **7. Looks for and makes use of structure.** |
| 8. Looks for and expresses regularity in repeated reasoning. |

**Moving Parentheses**

Consider the expression 24 ÷ 4 + 2 – 1 x 3

Part 1:

Put parentheses in the following places and evaluate each expression.

1. Around 24 ÷ 4
2. Around 4 + 2
3. Around 2 – 1
4. Around 1 x 3

Part 2:

Consider the values of each expression above. How do the parentheses change the value of each expression?

Part 3:

Are some expressions the same regardless of the location of the parentheses? Why is this the case?

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| **NC.5.OA.2**  **Moving Parentheses II** | |
| **Domain** | **Operations and Algebraic Thinking** |
| **Cluster** | **Write and interpret numerical expressions.** |
| **Standard(s)** | **5.OA.2** Write, explain, and evaluate numerical expressions involving the four operations to solve up to two-step problems. Include expressions involving:   * Parentheses, using the order of operations * Commutative, associative and distributive properties |
| **Materials** | Paper and pencil, Activity sheet (attached) |
| **Task** | **Moving Parentheses II**  Consider the expression: 54 ÷ 6 - 3 x 2 + 1  Part 1:  Put parentheses in the following places and evaluate each expression.   1. Around 54 ÷ 6 2. Around 6 - 3 3. Around 3 x 2 4. Around 2 + 1   Part 2:  Consider the values of each expression above. How do the parentheses change the value of each expression?  Part 3:  Are some expressions the same regardless of the location of the parentheses? Why is this the case? |

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| **Rubric** | | |
| **Level I**  **Not Yet** | 1. **Level II**   **Progressing** | **Level III**  **Meets Expectations** |
| * Student is not yet able to solve the task. | * Student provides an accurate answer for each part   **OR**   * Student is able to successfully explain their reasoning | * Student completes all of the parts correctly:   + Part 1: a) 4, b) 37, c) 4, d) 0   + Part 2: The response is clear and accurate and explains that parentheses determine what operation is done first.   + Part 3: The student explains that A and C both have a value of 4. The response discusses that since multiplication and division are done first, the placement of the parentheses in A and D doesn’t influence the answer. |

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| **Standards for Mathematical Practice** |
| 1. Makes sense and perseveres in solving problems. |
| **2. Reasons abstractly and quantitatively.** |
| **3. Constructs viable arguments and critiques the reasoning of others.** |
| **4. Models with mathematics.** |
| 5. Uses appropriate tools strategically. |
| 6. Attends to precision. |
| **7. Looks for and makes use of structure.** |
| 8. Looks for and expresses regularity in repeated reasoning. |

**Moving Parentheses II**

Consider the expression: 54 ÷ 6 - 3 x 2 + 1

Part 1:

Put parentheses in the following places and evaluate each expression.

1. Around 54 ÷ 6
2. Around 6 – 3
3. Around 3 x 2
4. Around 2 + 1

Part 2:

Consider the values of each expression above. How do the parentheses change the value of each expression?

Part 3:

Are some expressions the same regardless of the location of the parentheses? Why is this the case?