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| **NC.3.OA.6**  **Sharing Pencils** | |
| **Domain** | Operations and Algebraic Thinking |
| **Cluster** | Understand properties of multiplication and the relationship between multiplication and division. |
| **Standard(s)** | **NC.3.OA.6** Solve an unknown-factor problem, by using division strategies and/or changing it to a multiplication problem. |
| **Materials** | paper, pencils, white boards and dry-erase markers (optional) |
| **Task** | 1. Riley has 64 pencils to give to her friends. If she has 8 friends that she wants to give the pencils to, how could you use multiplication to find out how many pencils each person will get? 2. Use an array or other model to prove that the multiplication fact will help you find the answer. 3. Write related facts (fact family) to show the number sentences you used. |

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| **Rubric** | | |
| **Level I**  Not Yet | 1. **Level II** 2. Progressing | **Level III**  Meets Expectation |
| * Incorrect answer and work are given. | * Finds the correct answer, but there may be inaccuracies or incomplete justification of solution.   **OR**   * Uses partially correct work, but does not have a correct solution. | * Finds the multiplication fact   8 x 8 = 64.   * Explains that 8 8s make 64 in words or pictures. * Includes the fact family:   8 x 8 = 64, 64 *÷* 8 = 8 |

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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. |

**Sharing Pencils**

Riley has 64 pencils to give to her friends. If she has 8 friends that she wants to give the pencils to, how could you use multiplication to find out how many pencils each person will get?

Use an array or other model to prove that the multiplication fact will help you find the answer.

Write related facts (fact family) to show the number sentences you used.