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| **Grouping Students– 6.NS.4** |
| **Domain** | **The Number System** |
| **Cluster** | **Compute fluently with whole numbers and find common factors and multiples.** |
| **Standard(s)** | **6.NS.4** Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express 36 + 8 as 4 (9 + 2). |
| **Materials** | Activity sheet |
| **Task** | **Grouping Students**There are 72 students sitting in the cafeteria. They all sit in tables with 8 students at a table. There are 48 students on the left side of the cafeteria and 24 students on the right side of the cafeteria. Part 1:Write 2 mathematical equations that represent the 72 students as equal groups of students. One of your equations should include parentheses. Part 2:Another group of 16 students shows up and stands in line to get food. They then sit at tables with 8 students at a table. Write two mathematical equations that show the 48 students, the 24 students and the 16 students as groups of students at tables. One should include parentheses.Part 3:Write an explanation about how you wrote mathematical expressions for Parts 1 and 2 above. |

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| **Rubric** |
| **Level I** | 1. **Level II**
 | **Level III** |
| Developing Proficiency* Student uses inappropriate solution strategy and does not get the correct answer.
 | Not Yet Proficient * There are one or two errors.
 | Proficient in Performance * Accurately solves problem
* Part 1: 48 + 24 = 72. This can be expressed as 6x8 + 3x8 = 72. This can also be expressed as 8(6+3) = 72.
* Part 2: 48 + 24 + 16= 88.

This can be expressed as 6x8 + 3x8 + 2x8 = 88. This can also be expressed as 8(6+3+2) = 88.* Part 3: The explanation is clear and accurate.
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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. |

**Grouping Students**

There are 72 students sitting in the cafeteria. They all sit in tables with 8 students at a table. There are 48 students on the left side of the cafeteria and 24 students on the right side of the cafeteria.

Part 1:

Write 2 mathematical equations that represent the 72 students as equal groups of students. One of your equations should include parentheses.

Part 2:

Another group of 16 students shows up and stands in line to get food. They then sit at tables with 8 students at a table.

Write two mathematical equations that show the 48 students, the 24 students and the 16 students as groups of students at tables. One should include parentheses.

Part 3:

Write an explanation about why parentheses are appropriate in the parts of the task above.