

Core Content

Cluster Title: Compute fluently with multi-digit numbers and find common factors and multiples.

Standard 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 $4(9 + 2)$.

MASTERY Patterns of Reasoning:**Conceptual:**

Understand that greatest common factor and least common multiple are ways to discuss number relationships in multiplication and division.

Understand the process of prime factorization.

Understand the distributive property using sums and its use in adding numbers 1-100 with a common factor (e.g., $20 + 24 = 4(5 + 6)$).

Procedural:

Compute fluently using the distributive property of multiplication over addition.

Find greatest common factor of two whole numbers less than or equal to 100.

Find the least common multiple of two whole numbers less than or equal to 12.

Representational:

Model prime factorization of whole numbers 1-100 using such tools as a number line, manipulatives, and factor trees.

Supports for Teachers

Critical Background Knowledge**Conceptual:**

Understand that a factor is a whole number that divides without a remainder into another number.

Understand that a multiple is a whole number that is a product of the number and any other factor.

Know the distributive property.

Procedural:

Compute using the distributive property

Find factors and multiples of a given number.

<p>Representational: Model the distributive property of multiplication over addition using manipulatives, diagrams, and story contexts.</p>	
<p>Academic Vocabulary and Notation</p>	
<p>distributive property, factor, greatest common factor (GCF), least common multiple (LCM), multiple, prime factorization</p>	
<p>Instructional Strategies Used</p>	<p>Resources Used</p>
<p>Find LCM and/or GCF using factor towers, Venn diagrams, and factor trees to assist in finding the prime factors of each number.</p> <p>Use a model to show that $4(9 + 2)$ is four groups of 9 and four groups of 2.</p>	
<p>Assessment Tasks Used</p>	
<p>Skill-based Task: Find the greatest common factor of 24 and 60. Find the least common multiple of 6 and 10. Use the distributive property to show $15 + 75$.</p>	<p>Problem Task: Hot dogs come in packs of 8. Buns come in packs of 12. How many packs of hot dogs and bags of buns would you have to buy to have an equal number of hot dogs and buns?</p> <p>You need to make gift bags for a party with the same number of balloons and candy in each bag. One package of candy has 24 pieces. One package of balloons has 20 balloons. You need to use all the candy and all the balloons. What is the greatest number of gift bags that you can make containing an equal number of items?</p>