

Dear Fourth Grade Families,

Attached to this letter is a math study guide for the multiplication and division unit. The unit includes: multiplication facts; extended multiplication facts; division facts\*; two digit times one digit multiplication; multiples; least common multiples; factoring; greatest common factor; multiplication properties, true and false equations, and word problems.

Here are some definitions and examples of how the students are taught these various concepts. There are practice problems available on the Math Connects web sites.

<p><b>multiplication facts:</b> students need to be automatic with the facts through 12 ..... Arrays: an arrangement of objects in a rectangular pattern usually rows or columns to model multiplication.</p>	<p><b>*division facts:</b> we do not practice division facts-through the study of fact families, students need to be able to figure out the division fact. Example: 42 / 7 What times 7 equals 42?</p>	<p><b>least common multiples (LCM):</b> using 2 multiple lists, what are the common multiples? What multiple is the least (lowest) between the common multiples? LCM =least common multiple EX: 4    6 8    12 12   18 16   24 20   30 24   36 28   42 32   48 The least common multiple – LCM is: 12.</p>
<p><b>two digit times one digit multiplication:</b> <b>Partial Product:</b> A way to multiply in which the value of each digit in one is multiplied by the value of each digit in the other factor.</p>	<p><b>multiples:</b> What are the numbers that can be made by multiplying? EX: 1 x 3 = 3 2 x 3 = 6 3 x 3 = 9 3 x 4 = 12</p>	<p><b>word problems:</b> All the above types of problems are put into word problems. Students need to recognize what the word problem is asking them and solve</p>

<p>EX: <math>29 \times 7 =</math></p> <p><math>20 \times 7 = 140</math></p> <p><math>9 \times 7 = 63</math></p> <p><math>140 + 63 = 203</math></p> <p>Students are expected to solve problems in 2 ways.</p>		<p>for it. Students also need to be able to write their own word problems.</p>
	<p><b>greatest common factor (GCF):</b> what is the greatest (largest) factor between two factor lists?</p> <p>EX:</p> <p><math>10 = 1, 2, 5, 10</math></p> <p><math>12 = 1, 2, 3, 4, 6, 12</math></p> <p>Two (2) is the GCF between the 2 numbers.</p>	<p><b>multiplication properties:</b> see the letter attached</p>
<p><b>factoring:</b> What are all the factors that comprise a number? (We use the words prime and composite but they are not tested on it.)</p> <p><math>14 = 1, 2, 7, 14</math></p> <p><math>9 = 1, 3, 9</math></p> <p><math>11 = 1, 11</math></p>	<p><b>true and false equations:</b></p> <p>Students need to recognize math equations that are truly stated and those that are not.</p> <p>EX: <math>(2 \times 5) \times 2 = 20 \times 1</math> is a true equation</p> <p><math>15 \times 9 \times 5 = 20 \times 20 \times 20</math> is a false statement.</p>	<p><b>extended multiplication facts:</b></p> <p>EX: <math>2 \times 10 = 20</math></p> <p><math>2 \times 100 = 200</math></p> <p><math>20 \times 40 = 800</math></p>