Computation Study Guide

Vocabulary

- **Addition** – taking two numbers and combining them together
- **Addend** – the numbers that you are adding together
- **Sum** – the answer to an addition problem
- **Subtraction** – part of an amount taken away from a whole amount
- **Difference** – the answer to a subtraction problem
- **Compute** – solving an addition or subtraction problem

Properties of Addition

- **Associative (grouping) Property** – no matter how numbers are grouped, the same addends grouped different ways will always equal the same sum.
  
  Example: \( (3 + 6) + 1 = 10 \) and \( 3 + (6 + 1) = 10 \)

- **Commutative (ordering) Property** – no matter what order numbers are added in, the same addends will always have the same sum.
  
  Example: \( 5 + 4 = 9 \) and \( 4 + 5 = 9 \)

- **Identity (zero) Property** – any number plus zero will always be the same number.
  
  Example: \( 4 + 0 = 4 \) and \( 0 + 6 = 6 \)

Fact Families

\[
3 + 2 = 5 \quad 2 + 3 = 5
5 - 3 = 2 \quad 5 - 2 = 3
\]

Rounding and Estimation

Students are expected to be able to round to the nearest ten, hundred, and thousand to estimate numbers.

**Estimate to the nearest 10:**

- \( 36 + 46 = 40 + 50 = 90 \)
- \( 982 + 756 = 980 + 760 = 1740 \)

**Estimate to the nearest 100:**

- \( 789 + 546 = 800 + 500 = 1300 \)
- \( 9,087 + 4,874 = 9,100 + 4,900 = 1400 \)
Computation Study Guide

In and Out Boxes

Students are expected to be able to finish an in and out table and determine the rule of the table.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>6</td>
<td>7</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>10</td>
<td>14</td>
<td>15</td>
<td>26</td>
<td>17</td>
</tr>
</tbody>
</table>

Rule: + 8

Computation

Students should be able to add and subtract numbers with up to 4 digits with and without regrouping.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>87</td>
<td>132</td>
<td>5,625</td>
<td></td>
</tr>
<tr>
<td>+16</td>
<td>+254</td>
<td>+2,365</td>
<td></td>
</tr>
<tr>
<td>103</td>
<td>386</td>
<td>7,990</td>
<td></td>
</tr>
<tr>
<td>93</td>
<td>1,315</td>
<td>5,15</td>
<td></td>
</tr>
<tr>
<td>-22</td>
<td>-78</td>
<td>-1,594</td>
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</tr>
<tr>
<td>71</td>
<td>167</td>
<td>3,065</td>
<td></td>
</tr>
</tbody>
</table>

*Make sure when subtracting across the zero that you do the work step by step asking yourself, “Does this make sense? Now what am I trying to do?”

** Please remember you can use addition to check subtraction problems!!!!