

# Math Strategies

Grade Level: Fourth Grade

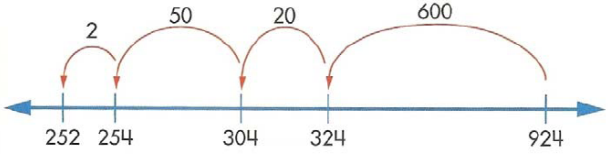
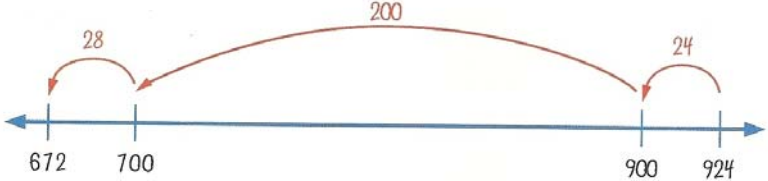
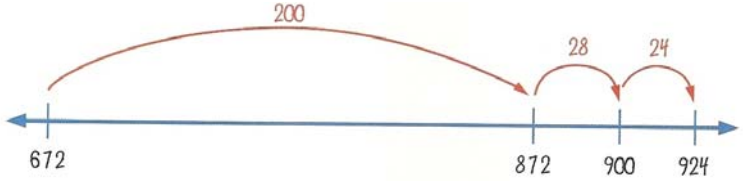
## ADDITION

Addition Strategy	Problem	Example
Adding by Place	1,852 + 688	$1,800 + 600 = 2,400$ $50 + 80 = 130$ $2 + 8 = 10$ $2,400 + 130 + 10 = 2,540$ $\begin{array}{r} 1,852 \\ + 688 \\ \hline 1,000 \\ 1,400 \\ 130 \\ + 10 \\ \hline 2,540 \end{array}$
Keeping One Number Whole	1,852 + 688	$1,852 + 600 = 2,452$ $2,452 + 80 = 2,532$ $2,532 + 8 = 2,540$
Changing the Numbers	1,852 + 688	$\begin{array}{r} 1,852 \\ + 700 \\ \hline 2,552 \\ - 12 \\ \hline 2,540 \end{array}$ <div style="border: 1px solid black; padding: 2px; display: inline-block; margin: 5px;">Add 12 to 688 to make 700.</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin: 5px; margin-left: 100px;">Take away the 12 to make 700</div> $\begin{array}{r} 1,852 + 688 \\ (-12) \quad (+12) \\ \hline 1,840 + 700 = 2,540 \end{array}$
U.S. Algorithm	1,852 + 688	$\begin{array}{r} 1 \ 1 \\ 1,852 \\ + 688 \\ \hline 2,540 \end{array}$

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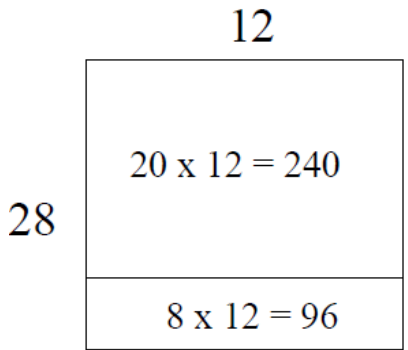
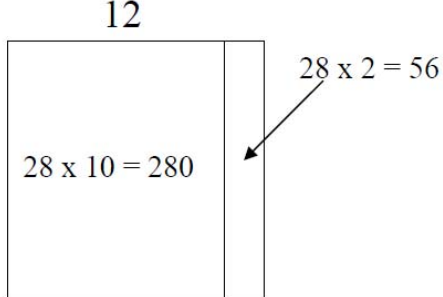
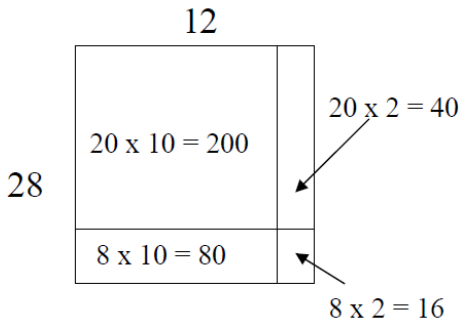
SUBTRACTION

Subtraction Strategy	Problem	Example
Subtracting One Number in Parts	924 - 672	$924 - 600 = 324$ $324 - 20 = 304$ $304 - 50 = 254$ $254 - 2 = 252$ 
Subtracting Back	924 - 672	$924 - \underline{24} = 900$ $900 - \underline{200} = 700$ $700 - \underline{28} = 672$ $24 + 200 + 28 = \mathbf{252}$ 
Adding Up	924 - 672	$672 + \underline{\quad} = 924$ $672 + \underline{200} = 872$ $872 + \underline{28} = 900$ $900 + \underline{24} = 924$ $200 + 28 + 24 = \mathbf{252}$ 

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MULTIPLICATION

Multiplication Strategy	Problem	Example
Breaking the Numbers Apart	28 x 12	$20 \times 12 = 240$ $8 \times 12 = 96$ $28 \times 12 = 336$ 
		$28 \times 10 = 280$ $28 \times 2 = 56$ $28 \times 12 = 336$ 
		$20 \times 10 = 200$ $8 \times 10 = 80$ $20 \times 2 = 40$ $8 \times 2 = 16$ $200 + 80 + 40 + 16 = 336$ 

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DIVISION

Division Strategy	Problem	Example
Skip Counting (Multiple Tower)	$156 \div 13$	<div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center; margin-right: 20px;"> <p>156</p> <p>143</p> <p>130</p> <p>117</p> <p>104</p> <p>91</p> <p>78</p> <p>65</p> <p>52</p> <p>39</p> <p>26</p> <p>13</p> </div> <div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Count how many multiples to find the answer.</p> </div> </div>
Multiplying by Groups	$156 \div 13$	<p><math>13 \times 10 = 130</math></p> <p><math>13 \times 2 = 26</math></p> <p><math>13 \times 12 = 156</math>, so <math>156 \div 13 = 12</math></p>
"Long" Division	$156 \div 13$	<div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center; margin-right: 20px;"> <p>13 <math>\overline{) 156}</math></p> <p style="margin-left: 10px;"><u>-130</u></p> <p style="margin-left: 10px;">26</p> <p style="margin-left: 10px;"><u>-13</u></p> <p style="margin-left: 10px;">13</p> <p style="margin-left: 10px;"><u>-13</u></p> <p style="margin-left: 10px;">0</p> </div> <div style="text-align: center;"> <p>12</p> <p><math>13 \times 10</math></p> <p>+</p> <p><math>13 \times 1</math></p> <p>+</p> <p><math>13 \times 1</math></p> </div> </div>