

### Strategy Examples:

The following table provides an example of each strategy. It is certainly not exhaustive but is intended to provide some detail to further explain the strategies. Of course there will be many more for each.

Different students could very likely use different strategies could answer any one question. Also, one student could use different strategies for the same questions at different times. The classroom focus needs to be on flexibility and personal preference in relation to strategy choice and use.

For some examples in this table particular models to support computation have been used these are outlined above. Also reference is made to a list of attached work samples which appear at the end of this document.

\* Not necessarily efficient or commonly used

Strategy	Example small nos	Example larger nos
<b>Counting On and Back:</b>		
Note: ( ) indicate the starting number not included in the count		
Count on to add	<u>4+2:</u> (4), 5, 6	<u>193+29:</u> (model: empty no line) 193+7 is 200, + 20 is 220, + 2 is <b>222</b> . (See work sample 1)
Count back to subtract	<u>64-8:</u> (model: hundred board) (64), 63, 62, 61, 60, 59, 58, 57, <b>56</b>	* <u>139-4:</u> (139), 138, 137, 136, <b>135</b>
Count on to subtract	<u>23-19:</u> (model: hundred board) (19), 20, 21, 22, 23	<u>407-288:</u> (model: empty no line) 288+2 is 290, + 100 is 390, + 10 is 400, + 7 is 407. So +2+100+10+7 is a difference of <b>119</b> (See work sample 2)
Count on to multiply	<u>5x3:</u> 5, 10, <b>15</b>	<u>15x5:</u> 15, 30, 45, 60, <b>75</b>
Count on and back to add	<u>23+8:</u> (model: hundred board) (23), 33, 32, <b>31</b>	<u>44+37:</u> (model: hundred board) (44), 54, 64, 74, 84, 83, 82, <b>81</b>
Count on and back to subtract	<u>15-9:</u> (model: hundred board) (15), 5, <b>6</b>	<u>432-188:</u> (model: number board) 432 - 200 is 232, + 10 is 242, +2 is <b>244</b>
<b>Adjusting and Compensating: (or change and fix)</b>		
Adjust one number and compensate to add	<u>9+6:</u> 10+6 is 16, - 1 is <b>15</b>	<u>99+48:</u> 100+48 -1 is <b>147</b> (See work sample 3)
Adjust one number and compensate to subtract	<u>26-9:</u> 26-10 is 16, +1 is <b>17</b> (See work sample 4)	<u>235-90:</u> 235-100 is 135, + 10 is <b>145</b>
Adjust one number and compensate to multiply	<u>8x7:</u> 10x7 is 70, - 14 (2x7) is <b>56</b>	<u>12x9:</u> 120 (12x10)-12 is <b>108</b> (See work sample 5)
Adjust one number and compensate to divide	*	
Adjust two numbers and compensate to add	<u>9+6:</u> is the same as 10+5 which is <b>15</b>	<u>168+245:</u> is the same as 170+243, which is the same as 200+213, which is <b>413</b> OR <u>99+48:</u> 100 + 50 is 150, -1 is 149, -2 is <b>147</b> (See work sample 6)
Adjust two numbers and compensate to subtract	* <u>9-6:</u> is the same as 10-7, which is <b>3</b> (See work sample 7)	<u>146-38:</u> is the same as 148-40 which is <b>108</b> (See work sample 8)
Adjust two numbers and compensate to multiply	<u>4x8:</u> is the same as 2x16 which is <b>32</b> .	<u>28x25:</u> is the same as 7x100 which is <b>700</b>
Adjust two numbers and	<u>28÷4:</u>	<u>350÷25:</u>

Strategy	Example small nos	Example larger nos
compensate to divide	is the same as $14 \div 2$ which is 7	is the same as $1400 \div 100$ which is 14
<b>Doubling and /or Halving:</b>		
Use a double or near double to add	<u>5+6:</u> Double 5 is 10 + 1 is 11	<u>20+21:</u> Double 20 is 40 + 1 is 41 (See work sample 9)
Use a double or near double to subtract	<u>12-6:</u> Half of 12 is 6 so the answer is 6	<u>42-21:</u> I noticed that 21 is half of 42 and I knew if you took away half the other half is left: 21 (See work sample 10)
Double to multiply by 2	<u>4x2:</u> Double 4 is 8	<u>24x2:</u> Double 24 which is 48 (See work sample 11)
Double double to multiply by 4	<u>4x4:</u> Double 4 is 8, double 8 is 16	<u>27x4:</u> Double 27 is 54, double 54 is 108
Double double double to multiply by 8	<u>6x8:</u> Double 6 is 12, double 12 is 24, double 24 is 48	<u>14x8:</u> Double 14 is 28, double 28 is 56, double 56 is 112 (See work sample 12)
Half to divide by 2	<u>10÷2:</u> Half of 10 is 5	<u>48÷2:</u> Half of 48 is 24
Half half to divide by 4	<u>24÷4:</u> half of 24 is 12, half of 12 is 6	<u>124÷4:</u> Half of 124 is 62, half of 62 is 31
Half half half to divide by 8	<u>32÷8:</u> half of 32 is 16, half of 16 is 8, half of 8 is 4	<u>164÷8:</u> Half of 164 is 82, Half of 82 is 41, half of 41 is 20.5
Double and halve to multiply	<u>6x5:</u> $6 \times 10$ is 60; half of 60 is 30 (See work sample 13)	<u>5x40:</u> $10 \times 40$ is 400. Half of 400 is 200 (See work sample 14)
Double and halve to divide	*	<u>215÷5</u> $215 \div 10$ is 21.5, double 21.5 is 43
<b>Breaking Up:</b>		
Break up two numbers using place value to add	<u>23+17:</u> $20+10$ is 30, $7+3$ is 10, $30+10$ is 40 (See work sample 15)	<u>127+235:</u> $100+200$ is 300; $20+30$ is 50; $7+5$ is 12; so $300+50+12$ is 362
Break up two numbers using place value to subtract	<u>24-13:</u> (works best when no bridging needed) $20-10$ is 10; $4-3$ is 1; $10+1$ is 11 (See work example 16 for a common problem breaking up two numbers when subtracting)	<u>266-134:</u> (works best when no bridging needed) $200-100$ is 100; $60-30$ is 30; $6-4$ is 2; so $100+30+2$ is 132
Break up two numbers using place value to multiply	*	<u>35x12:</u> (model: matrix multiplication) $30 \times 10$ is 300; $5 \times 10$ is 50; $30 \times 2$ is 60; $5 \times 2$ is 10; $300+50+60+10$ is 420
Break up two numbers using place value to divide	*	*
Break up two numbers using compatible numbers to add	<u>18+17:</u> $15+15$ is 30; $3+2$ is 5; $30+5$ is 35	<u>154+256:</u> $150+250$ is 400; $4+6$ is 10; $400+10$ is 410
Break up two numbers using compatible numbers to subtract	* <u>37-16:</u> $35-15$ is 20; $2-1$ is 1; $20+1$ is 21	* <u>306-152:</u> $300-150$ is 150; $6-2$ is 4; $150+4$ is 154
Break up two numbers using compatible numbers to multiply	*	<u>36 x 15:</u> (using factors) Is the same as $6 \times 6 \times 3 \times 5$ so $6 \times 5$ is $30 \times 3$ is $90 \times 6$ is 540
Break up two numbers using compatible numbers to divide	*	*
Break up one number using place value to add	<u>23+17:</u> $23+10$ is 33, +7 is 40	<u>146+236:</u> $146+200$ is 346, $346+30$ is 376, $376+6$ is 382
Break up one number using place value to subtract	<u>100-36:</u> $100-30$ is 70, $70-6$ is 64	<u>712-698:</u> $712-600$ is 112, $112-90$ is 22, 22-