

# Addition

Year	Skill	Representations and Models	Examples
1	<b>Add two 1-digit numbers to 10</b>	Part-whole model Bar model Numicon Ten frames Bead strings Number tracks	

Year	Skill	Representations and Models	Examples
1	Add 1 and 2-digit numbers to 20	Part-whole model Bar model Numicon Ten frames Bead strings Number tracks Number lines (labelled) Straws	<p> <math>8 + 7 = 15</math> </p>

Year	Skill	Representations and Models	Examples
2	Add three 1-digit numbers	Part-whole model Bar model Ten frames Numicon	

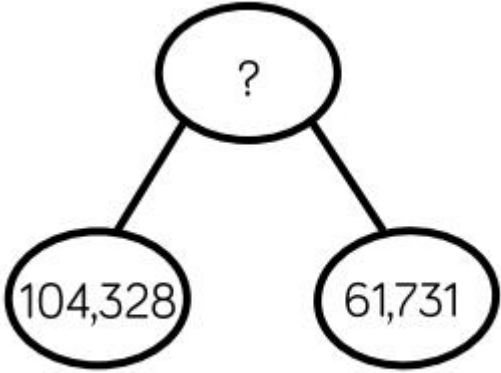
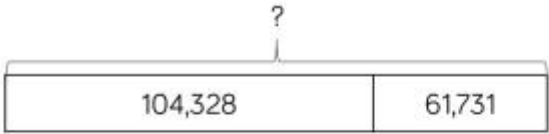
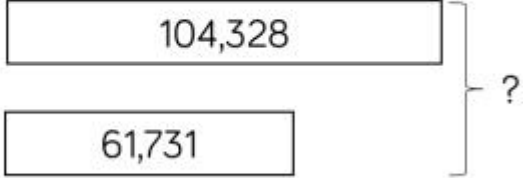
Year	Skill	Representations and Models	Examples
2	Add 1 and 2-digit numbers to 100	Part-whole model Bar model Number lines (labelled) Number lines (blank) Straws Hundred Square	

Year	Skill	Representations and Models	Examples
2	Add two 2-digit numbers	Part-whole model Bar model Number lines Straws Base 10 Place value counters Column addition	<p> <math>38 + 23 = 61</math> </p>

Year	Skill	Representations and Models	Examples
3	Add with up to 3-digits	Part-whole model Bar model Base 10 Place value counters Column addition	

Year	Skill	Representations and Models	Examples
4	Add with up to 4-digits	Part-whole model Bar model Base 10 Place value counters Column addition	<p style="text-align: center;"><b><math>1,378 + 2,148 = 3,526</math></b></p>



Year	Skill	Representations and Models	Examples																																										
5/6	Add with more than 4 digits	Part-whole model Bar model Base 10 Place value counters Column addition	   <div style="border: 1px solid black; padding: 10px; display: inline-block; margin: 10px 0;"> <math>104,328 + 61,731 = 166,059</math> </div> <table border="1" style="margin: 10px 0;"> <thead> <tr> <th style="background-color: #f4a460;">HTh</th> <th style="background-color: #c8a2e4;">TTh</th> <th style="background-color: #a2c8e4;">Th</th> <th style="background-color: #a2e4a2;">H</th> <th style="background-color: #f4e4a2;">T</th> <th style="background-color: #e4a2a2;">O</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">●●●●●</td> <td></td> <td style="text-align: center;">●●●● ●</td> <td style="text-align: center;">●●●</td> <td style="text-align: center;">●●</td> <td style="text-align: center;">●●● ●●● ●●</td> </tr> <tr> <td></td> <td style="text-align: center;">●●●● ●●●●</td> <td style="text-align: center;">●</td> <td style="text-align: center;">●●● ●●● ●</td> <td style="text-align: center;">●●●</td> <td style="text-align: center;">●</td> </tr> </tbody> </table> <table border="1" style="margin: 10px 0;"> <tbody> <tr> <td>1</td><td>0</td><td>4</td><td>3</td><td>2</td><td>8</td> </tr> <tr> <td>+</td><td>6</td><td>1</td><td>7</td><td>3</td><td>1</td> </tr> <tr> <td>1</td><td>6</td><td>6</td><td>0</td><td>5</td><td>9</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">1</td> </tr> </tbody> </table>	HTh	TTh	Th	H	T	O	●●●●●		●●●● ●	●●●	●●	●●● ●●● ●●		●●●● ●●●●	●	●●● ●●● ●	●●●	●	1	0	4	3	2	8	+	6	1	7	3	1	1	6	6	0	5	9						1
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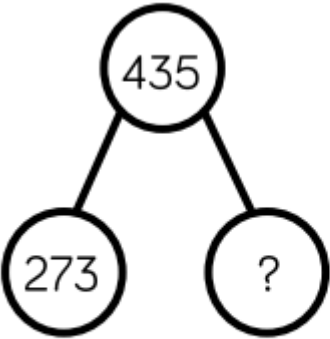
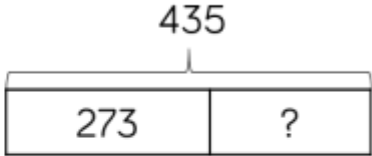
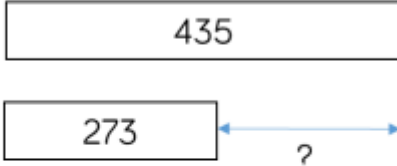
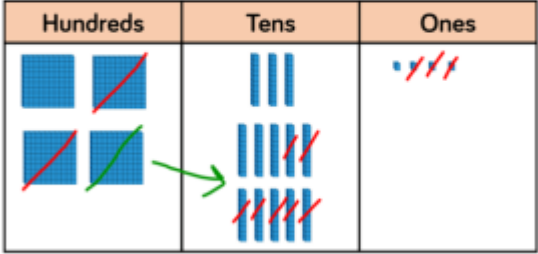
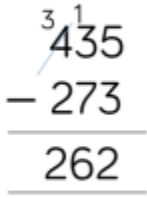
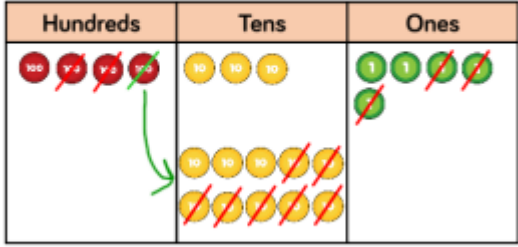
Year	Skill	Representations and Models	Examples
5/6	Add with up to 3 decimal Places	Part-whole model Bar model Base 10 Place value counters Column addition	

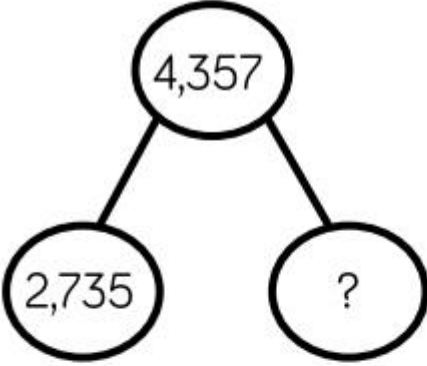
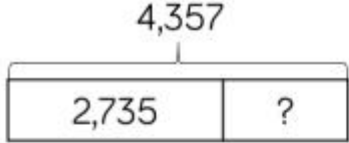

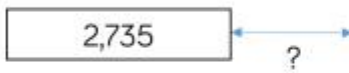
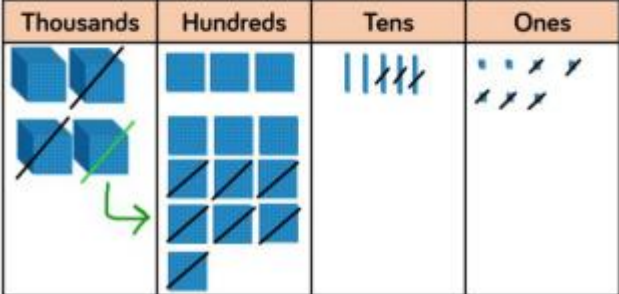
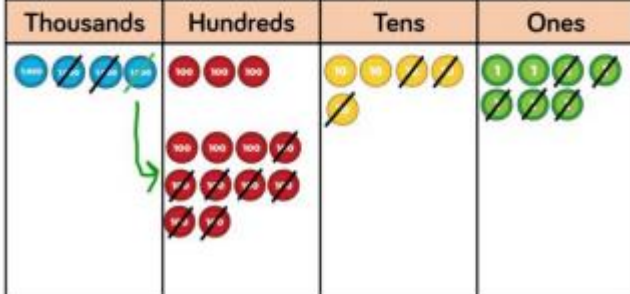
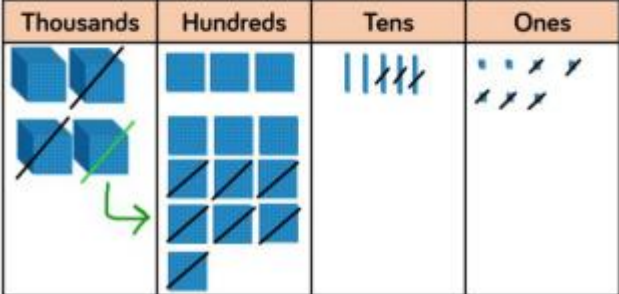
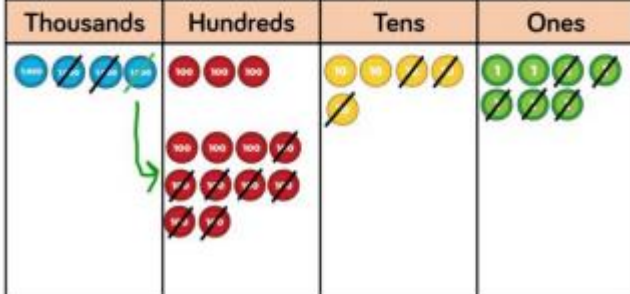
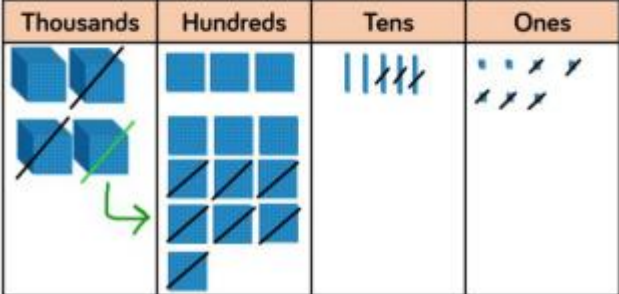
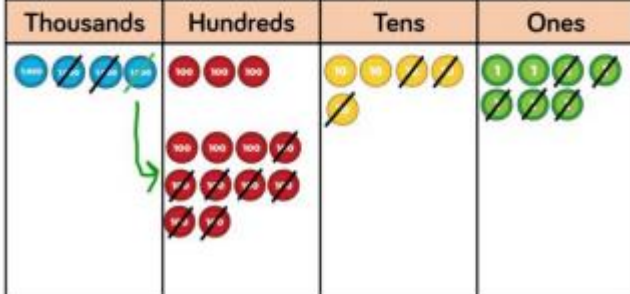
# Subtraction

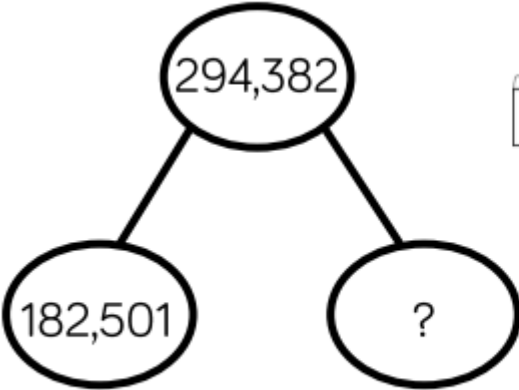
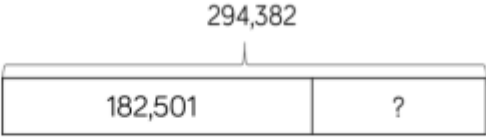
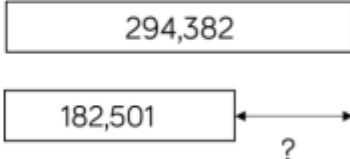
Year	Skill	Representations and Models	Examples
1	Subtract two 1-digit numbers to 10	Part-whole model Bar model Numicon Ten frames Bead strings Number tracks	<div style="border: 1px solid blue; border-radius: 15px; padding: 5px; display: inline-block; margin: 10px;"> <math>7 - 3 = 4</math> </div> <p>                     First:                           Then:                           Now:  </p> <p> </p> <p> </p>

Year	Skill	Representations and Models	Examples
1/2	<b>Subtract 1 and 2-digit numbers to 20</b>	Part-whole model Bar model Numicon Ten frames Bead strings Number tracks Number lines (labelled) Straws Hundred square	<p style="text-align: center;"><b>14 - 6 = 8</b></p>

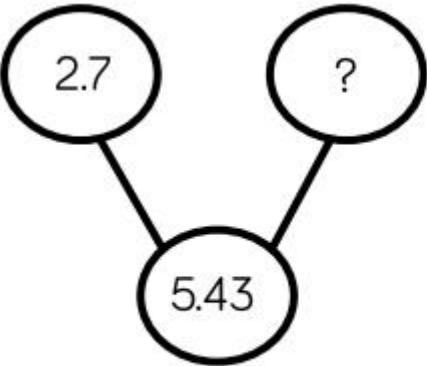
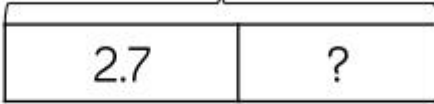
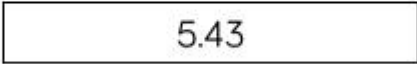
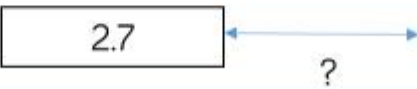
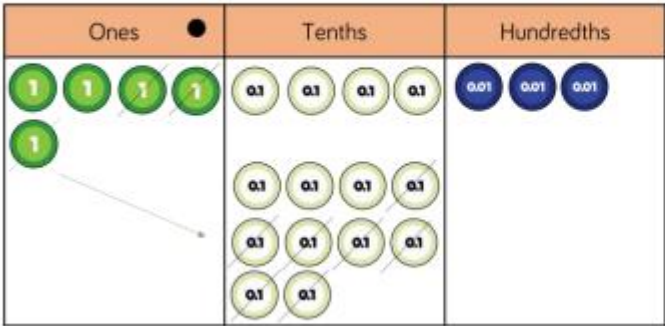
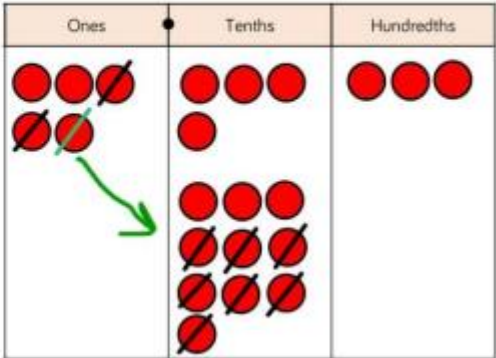
Year	Skill	Representations and Models	Examples
2	<b>Subtract two 2-digit numbers</b>	Part-whole model Bar model Number lines (blank) Straws Base 10 Place value counters Column subtraction	<div style="text-align: center; margin-top: 10px;"> <math>65 - 28 = 37</math> </div>

Year	Skill	Representations and Models	Examples
3	Subtract with up to 3-digits	Part whole model Bar model Base 10 Place value counters Column subtraction	   <div style="border: 1px solid black; border-radius: 15px; padding: 10px; display: inline-block; margin: 10px 0;"> <math>435 - 273 = 262</math> </div>   

Year	Skill	Representations and Models	Examples																
4	Subtract with up to 4-digits	Part whole model Bar model Base 10 Place value counters Column subtraction	    <div style="border: 1px solid black; border-radius: 15px; padding: 10px; display: inline-block; margin: 10px 0;"> <math>4,357 - 2,735 = 1,622</math> </div> <table border="1" style="width: 100%; text-align: center; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Thousands</th> <th style="width: 25%;">Hundreds</th> <th style="width: 25%;">Tens</th> <th style="width: 25%;">Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <table border="1" style="width: 100%; text-align: center; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Thousands</th> <th style="width: 25%;">Hundreds</th> <th style="width: 25%;">Tens</th> <th style="width: 25%;">Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Thousands	Hundreds	Tens	Ones					Thousands	Hundreds	Tens	Ones				
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5/6	<b>Subtract with more than 4-digits</b>	Part whole model Bar model Place value counters Column subtraction	   <div style="border: 1px solid black; border-radius: 15px; padding: 10px; display: inline-block; margin: 10px 0;"> <math>294,382 - 182,501 = 111,881</math> </div> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="background-color: #f4a460;">HTh</th> <th style="background-color: #c8a2c8;">TTh</th> <th style="background-color: #a2c8e2;">Th</th> <th style="background-color: #a2e2a2;">H</th> <th style="background-color: #f4e2a2;">T</th> <th style="background-color: #e2a2a2;">O</th> </tr> </thead> <tbody> <tr> <td><del>100,000</del> <del>100,000</del></td> <td><del>10,000</del> <del>10,000</del> <del>10,000</del> <del>10,000</del> <del>10,000</del> <del>10,000</del> <del>10,000</del> <del>10,000</del> <del>10,000</del></td> <td>1,000 <del>1,000</del> <del>1,000</del> <del>1,000</del></td> <td>100 100 100 100 100 100 <del>100</del> <del>100</del> <del>100</del> <del>100</del></td> <td>10 10 10 10 10 10 10 10</td> <td>1 <del>1</del></td> </tr> </tbody> </table> <table border="1" style="width: 100%; text-align: center;"> <tbody> <tr> <td></td> <td>2</td> <td>9</td> <td><del>3</del></td> <td>1<del>3</del></td> <td>8</td> <td>2</td> </tr> <tr> <td>-</td> <td>1</td> <td>8</td> <td>2</td> <td>5</td> <td>0</td> <td>1</td> </tr> <tr> <td></td> <td>1</td> <td>1</td> <td>1</td> <td>8</td> <td>8</td> <td>1</td> </tr> </tbody> </table>	HTh	TTh	Th	H	T	O	<del>100,000</del> <del>100,000</del>	<del>10,000</del> <del>10,000</del> <del>10,000</del> <del>10,000</del> <del>10,000</del> <del>10,000</del> <del>10,000</del> <del>10,000</del> <del>10,000</del>	1,000 <del>1,000</del> <del>1,000</del> <del>1,000</del>	100 100 100 100 100 100 <del>100</del> <del>100</del> <del>100</del> <del>100</del>	10 10 10 10 10 10 10 10	1 <del>1</del>		2	9	<del>3</del>	1 <del>3</del>	8	2	-	1	8	2	5	0	1		1	1	1	8	8	1
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5/6	Subtract with up to 3 decimal places	Part whole model Bar model Place value counters Column subtraction	    <div style="border: 1px solid black; padding: 5px; display: inline-block; margin: 10px 0;"> <math>5.43 - 2.7 = 2.73</math> </div>  

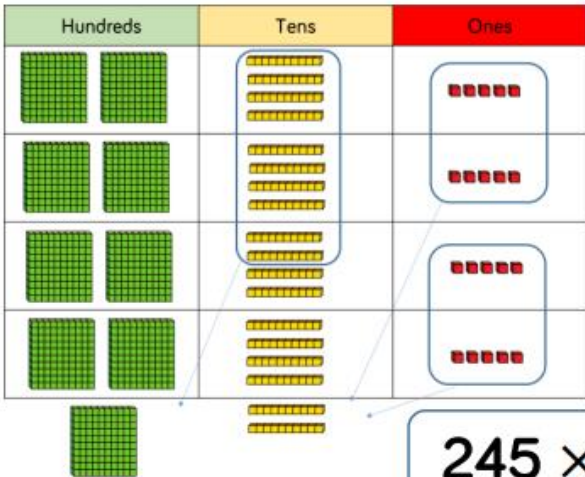
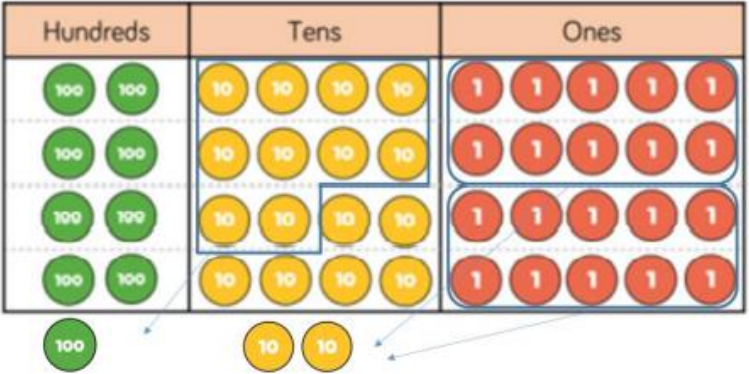


# Multiplication

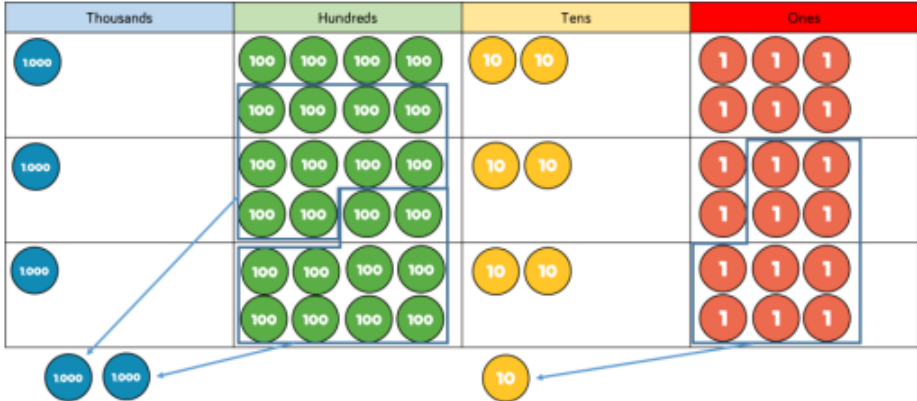
Year	Skill	Representations and Models	Examples
1/2	Solve one-step problems with multiplication	Bar model Numicon Counters Ten frames Bead strings Number lines	<p>One bag holds 5 apples. How many apples do 4 bags hold?</p> $5 + 5 + 5 + 5 = 20$ $4 \times 5 = 20$ $5 \times 4 = 20$

Year	Skill	Representations and Models	Examples																																														
3/4	Multiply 2-digit by 1-digit numbers	<p>Place value counters</p> <p>Base 10</p> <p>Expanded written method</p> <p>Short written method (column multiplication)</p>	<div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: inline-block; margin: 10px;"> <math>34 \times 5 = 170</math> </div> <table border="1" style="margin: 10px;"> <thead> <tr> <th></th> <th>H</th> <th>T</th> <th>O</th> <th></th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>3</td> <td>4</td> <td></td> </tr> <tr> <td>x</td> <td></td> <td></td> <td>5</td> <td></td> </tr> <tr> <td></td> <td>1</td> <td>7</td> <td>0</td> <td></td> </tr> <tr> <td></td> <td>1</td> <td>2</td> <td></td> <td></td> </tr> </tbody> </table> <table border="1" style="margin: 10px;"> <thead> <tr> <th>Hundreds</th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td>●●●</td> <td>●●●●</td> </tr> <tr> <td></td> <td>●●●</td> <td>●●●●</td> </tr> <tr> <td></td> <td>●●●</td> <td>●●●●</td> </tr> <tr> <td></td> <td>●●●</td> <td>●●●●</td> </tr> <tr> <td></td> <td>●●●</td> <td>●●●●</td> </tr> <tr> <td>●</td> <td>●●</td> <td></td> </tr> </tbody> </table>		H	T	O				3	4		x			5			1	7	0			1	2			Hundreds	Tens	Ones		●●●	●●●●		●●●	●●●●		●●●	●●●●		●●●	●●●●		●●●	●●●●	●	●●	
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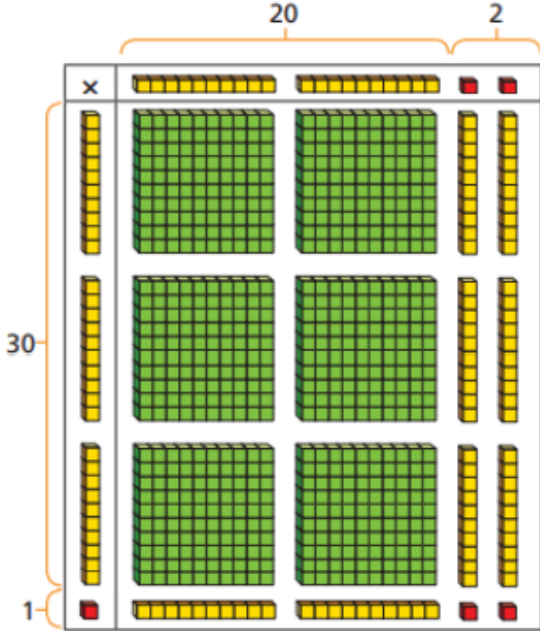


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4	Multiply 3-digit by 1-digit numbers	Place value counters  Base 10  Short written method (column multiplication)	 <table border="1"> <tr><td></td><td>H</td><td>T</td><td>O</td></tr> <tr><td></td><td>2</td><td>4</td><td>5</td></tr> <tr><td>x</td><td></td><td></td><td>4</td></tr> <tr><td colspan="4"><hr/></td></tr> <tr><td></td><td>9</td><td>8</td><td>0</td></tr> <tr><td></td><td>1</td><td>2</td><td></td></tr> </table> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block;"> <math>245 \times 4 = 980</math> </div> 		H	T	O		2	4	5	x			4	<hr/>					9	8	0		1	2	
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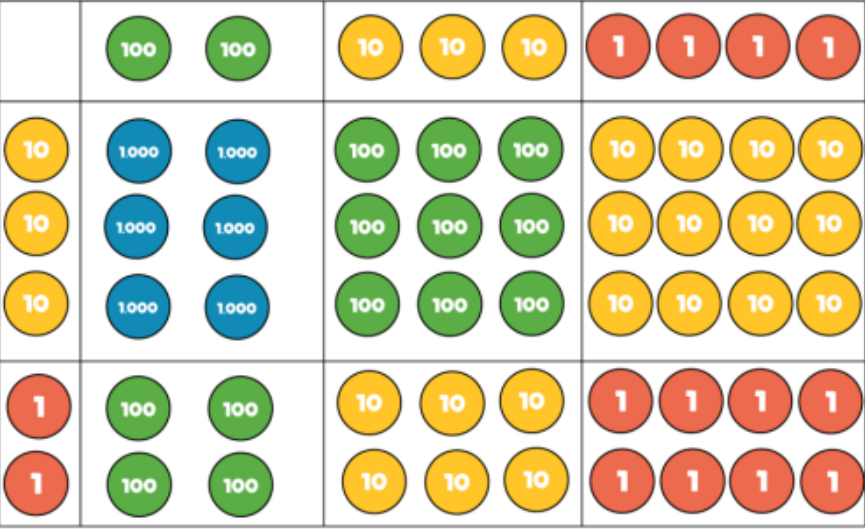


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5	<p><b>Multiply 4-digit by 1-digit numbers</b></p>	<p>Place value counters</p> <p>Short written method (column multiplication)</p>	 <div style="border: 1px solid black; border-radius: 15px; padding: 10px; display: inline-block; margin: 10px 0;"> <math>1,826 \times 3 = 5,478</math> </div> <table border="1" style="margin: 10px auto; text-align: center; border-collapse: collapse;"> <tr> <td></td> <td>Th</td> <td>H</td> <td>T</td> <td>O</td> </tr> <tr> <td></td> <td>1</td> <td>8</td> <td>2</td> <td>6</td> </tr> <tr> <td>×</td> <td></td> <td></td> <td></td> <td>3</td> </tr> <tr> <td></td> <td>5</td> <td>4</td> <td>7</td> <td>8</td> </tr> <tr> <td></td> <td></td> <td>2</td> <td></td> <td>1</td> </tr> </table>		Th	H	T	O		1	8	2	6	×				3		5	4	7	8			2		1
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5	Multiply 2-digit by 2-digit numbers	<p>Place value counters</p> <p>Base 10</p> <p>Formal written method (column multiplication)</p> <p>Grid method</p>	 <table border="1"> <tr> <td></td> <td>10</td> <td>10</td> <td>1</td> <td>1</td> </tr> <tr> <td>10</td> <td>100</td> <td>100</td> <td>10</td> <td>10</td> </tr> <tr> <td>10</td> <td>100</td> <td>100</td> <td>10</td> <td>10</td> </tr> <tr> <td>10</td> <td>100</td> <td>100</td> <td>10</td> <td>10</td> </tr> <tr> <td>1</td> <td>10</td> <td>10</td> <td>1</td> <td>1</td> </tr> </table> <table border="1"> <tr> <td>x</td> <td>20</td> <td>2</td> </tr> <tr> <td>30</td> <td>600</td> <td>60</td> </tr> <tr> <td>1</td> <td>20</td> <td>2</td> </tr> </table> <table border="1"> <tr> <td></td> <td>H</td> <td>T</td> <td>O</td> </tr> <tr> <td></td> <td></td> <td>2</td> <td>2</td> </tr> <tr> <td>x</td> <td></td> <td>3</td> <td>1</td> </tr> <tr> <td></td> <td></td> <td>2</td> <td>2</td> </tr> <tr> <td></td> <td>6</td> <td>6</td> <td>0</td> </tr> <tr> <td></td> <td>6</td> <td>8</td> <td>2</td> </tr> </table> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; display: inline-block;"> <math>22 \times 31 = 682</math> </div>		10	10	1	1	10	100	100	10	10	10	100	100	10	10	10	100	100	10	10	1	10	10	1	1	x	20	2	30	600	60	1	20	2		H	T	O			2	2	x		3	1			2	2		6	6	0		6	8	2
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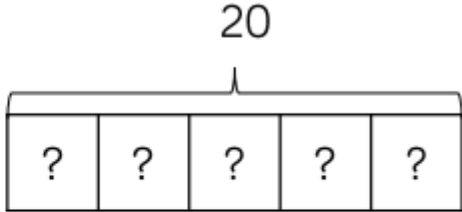
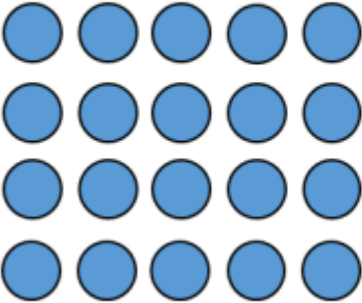

Year	Skill	Representations and Models	Examples																																								
5	Multiply 2-digit by 3-digit numbers	Place value counters  Formal written method (column multiplication)  Grid method	 <table border="1" style="margin-left: 20px;"> <tr><td>Th</td><td>H</td><td>T</td><td>O</td></tr> <tr><td></td><td>2</td><td>3</td><td>4</td></tr> <tr><td>×</td><td></td><td>3</td><td>2</td></tr> <tr><td colspan="4"><hr/></td></tr> <tr><td></td><td>4</td><td>6</td><td>8</td></tr> <tr><td>17</td><td>10</td><td>2</td><td>0</td></tr> <tr><td>7</td><td>4</td><td>8</td><td>8</td></tr> </table> <div style="text-align: center; margin-top: 20px;"> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>×</td><td>200</td><td>30</td><td>4</td></tr> <tr><td>30</td><td>6,000</td><td>900</td><td>120</td></tr> <tr><td>2</td><td>400</td><td>60</td><td>8</td></tr> </table> </div> <div style="text-align: center; margin-top: 20px;"> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; display: inline-block;"> <math>234 \times 32 = 7,488</math> </div> </div>	Th	H	T	O		2	3	4	×		3	2	<hr/>					4	6	8	17	10	2	0	7	4	8	8	×	200	30	4	30	6,000	900	120	2	400	60	8
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Year	Skill	Representations and Models	Examples																																																		
5/6	Multiply 2-digit by 4-digit numbers	Formal written method (column multiplication)	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>TTh</th> <th>Th</th> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td></td> <td>2</td> <td>7</td> <td>3</td> <td>9</td> </tr> <tr> <td>×</td> <td></td> <td></td> <td>2</td> <td>8</td> </tr> <tr> <td colspan="5"><hr/></td> </tr> <tr> <td>2</td> <td>1</td> <td>9</td> <td>1</td> <td>2</td> </tr> <tr> <td><sub>2</sub></td> <td><sub>5</sub></td> <td><sub>3</sub></td> <td><sub>7</sub></td> <td></td> </tr> <tr> <td>5</td> <td>4</td> <td>7</td> <td>8</td> <td>0</td> </tr> <tr> <td><sub>1</sub></td> <td></td> <td><sub>1</sub></td> <td></td> <td></td> </tr> <tr> <td colspan="5"><hr/></td> </tr> <tr> <td>7</td> <td>6</td> <td>6</td> <td>9</td> <td>2</td> </tr> </tbody> </table> <p style="text-align: center; margin-left: 150px;">1</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; width: fit-content; margin: 20px auto;"> <math>2,739 \times 28 = 76,692</math> </div>	TTh	Th	H	T	O		2	7	3	9	×			2	8	<hr/>					2	1	9	1	2	<sub>2</sub>	<sub>5</sub>	<sub>3</sub>	<sub>7</sub>		5	4	7	8	0	<sub>1</sub>		<sub>1</sub>			<hr/>					7	6	6	9	2
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# Division

Year	Skill	Representations and Models	Examples
1/2	Solve one-step problems with division (sharing)	Bar model Real life objects Arrays Counters	  <div style="border: 1px solid black; border-radius: 15px; padding: 10px; text-align: center; margin: 10px 0;"> <p>There are 20 apples altogether. They are shared equally between 5 bags. How many apples are in each bag?</p> </div>   <p style="text-align: center;"><math>20 \div 5 = 4</math></p>



Year	Skill	Representations and Models	Examples
1/2	Solve one-step problems with division (grouping)	Real life objects Numicon Bead strings Ten frames Number lines Arrays Counters	<p>There are 20 apples altogether. They are put in bags of 5. How many bags are there?</p> $20 \div 5 = 4$

Year	Skill	Representations and Models	Examples
3	Divide 2-digits by 1-digit (no exchange sharing)	Straws Base 10 Bar model Place value counters Part-whole model	<p>The examples illustrate the division <math>48 \div 2 = 24</math> using four different models:</p> <ul style="list-style-type: none"> <li><b>Place Value Chart:</b> A table with 'Tens' and 'Ones' columns. The 'Tens' column contains two '10' counters, and the 'Ones' column contains eight '1' counters. This represents the number 48.</li> <li><b>Straws:</b> Two identical groups, each containing two bundles of ten straws and eight individual straws, representing 48 divided into two equal parts of 24.</li> <li><b>Bar Model:</b> A central box containing the equation <math>48 \div 2 = 24</math>.</li> <li><b>Place Value Counters:</b> Two identical groups, each containing two vertical rods of ten yellow cubes and eight individual red cubes, representing 48 divided into two equal parts of 24.</li> </ul>

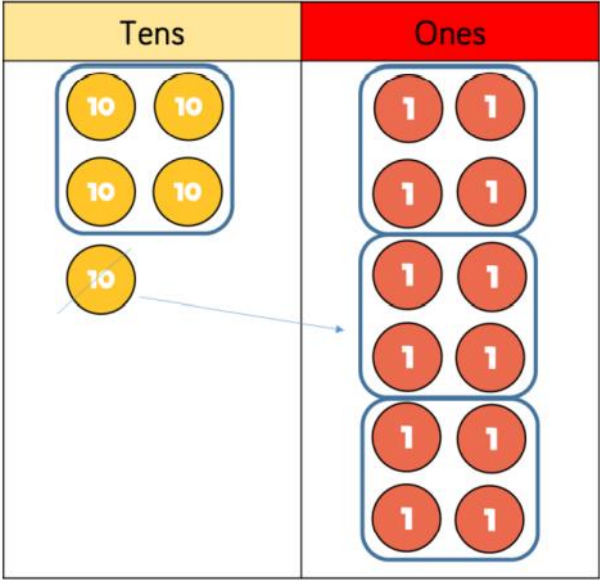
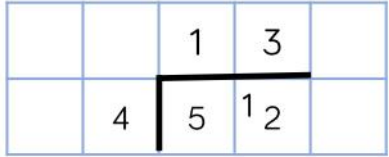
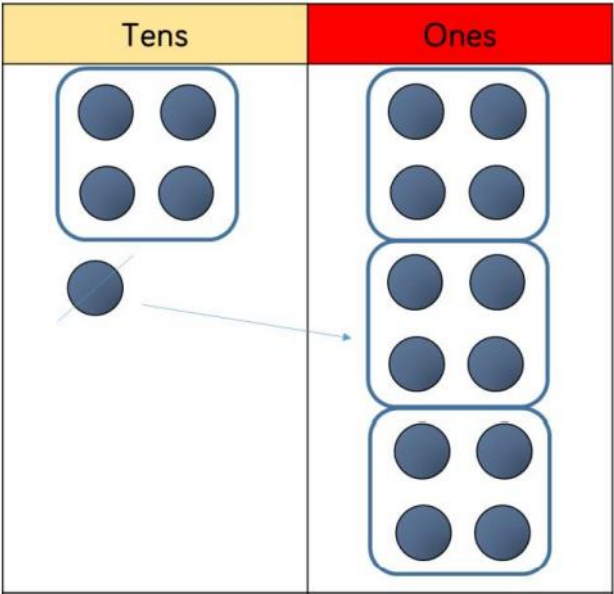


Year	Skill	Representations and Models	Examples
3	Divide 2-digits by 1-digit (sharing with exchange)	Straws Base 10 Bar model Place value counters Part-whole model	<p>The examples illustrate the division of 52 by 4 using several methods:</p> <ul style="list-style-type: none"> <li><b>Straws:</b> Five bundles of ten yellow straws and two individual yellow straws are shown. A blue arrow indicates one bundle being broken into ten individual straws, which are then combined with the two original straws to form twelve individual straws.</li> <li><b>Base 10 blocks:</b> A grid with four rows and two columns. The left column is labeled 'Tens' and contains four yellow blocks. The right column is labeled 'Ones' and contains eight red blocks.</li> <li><b>Bar model:</b> A bar representing 52 is divided into four equal sections. Each section contains a question mark.</li> <li><b>Place value counters:</b> A grid with four rows and two columns. The left column is labeled 'Tens' and contains four yellow counters. The right column is labeled 'Ones' and contains eight red counters.</li> <li><b>Part-whole model:</b> A tree diagram showing 52 at the top, branching into 40 and 12. Below 40, a downward arrow with '÷ 4' leads to 10. Below 12, a downward arrow with '÷ 4' leads to 3. Below these, the equation <math>10 + 3 = 13</math> is written.</li> <li><b>Equation:</b> A blue box contains the equation <math>52 \div 4 = 13</math>.</li> <li><b>Place value counters (detailed):</b> A grid with four rows and two columns. The left column is labeled 'Tens' and contains four yellow counters. The right column is labeled 'Ones' and contains eight red counters. A blue arrow points from one ten counter to the ones column, where it is broken into ten one counters, which are then combined with the original eight one counters to form eighteen one counters.</li> </ul>



Year	Skill	Representations and Models	Examples
3/4	Divide 2-digits by 1-digit (sharing with remainders)	Straws Base 10 Bar model Place value counters Part-whole model	<p>The examples illustrate the division <math>53 \div 4 = 13 \text{ r}1</math> using several methods:</p> <ul style="list-style-type: none"> <li><b>Straws:</b> 53 straws are grouped into 4 groups of 13, with 1 straw remaining.</li> <li><b>Base 10:</b> A table with 'Tens' and 'Ones' columns. 5 tens rods and 3 ones units are shown. They are grouped into 4 groups of 3 tens rods and 1 one unit each, with 1 one unit remaining.</li> <li><b>Bar model:</b> A bar representing 53 is divided into 4 equal parts, each containing 13, and a remainder of 1.</li> <li><b>Place value counters:</b> 5 tens blocks and 3 ones blocks are used to form 4 groups of 3 tens and 1 one, with 1 one block left over.</li> <li><b>Part-whole model:</b> A tree diagram showing 53 splitting into 40 and 13. 40 is divided by 4 to get 10. 13 splits into 12 and 1. 12 is divided by 4 to get 3. The final result is 10 + 3 = 13, with a remainder of 1.</li> <li><b>Equation:</b> <math>53 \div 4 = 13 \text{ r}1</math> is displayed in a box.</li> <li><b>Place value counters (detailed):</b> A table with 'Tens' and 'Ones' columns. 5 tens blocks and 3 ones blocks are shown. They are grouped into 4 groups of 3 tens and 1 one, with 1 one block left over.</li> </ul>

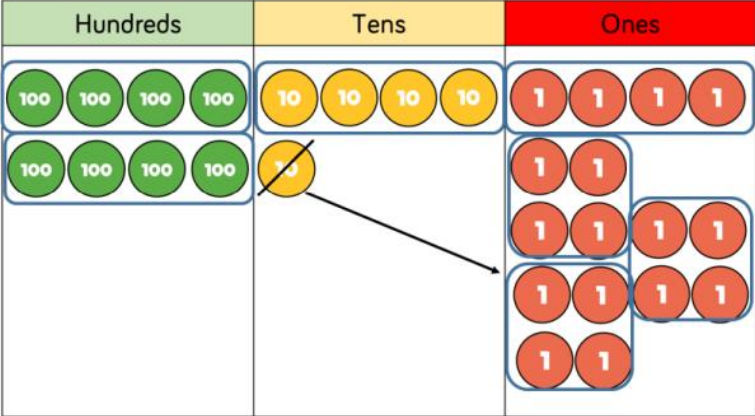
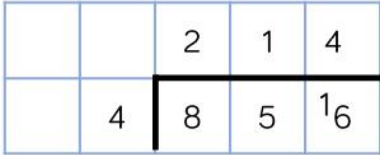
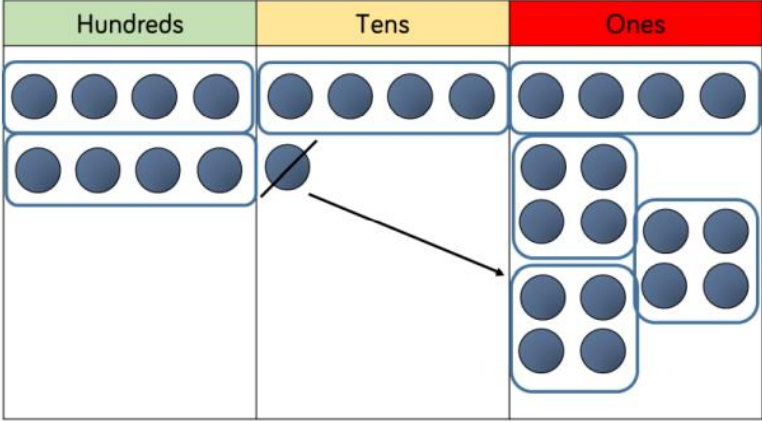


Year	Skill	Representations and Models	Examples
4/5	Divide 2-digits by 1-digit (grouping)	Place value counters Counters Place value grid Written short division (bus stop)	 <div style="border: 1px solid black; border-radius: 15px; padding: 10px; width: fit-content; margin: 20px auto;"> <math>52 \div 4 = 13</math> </div>  



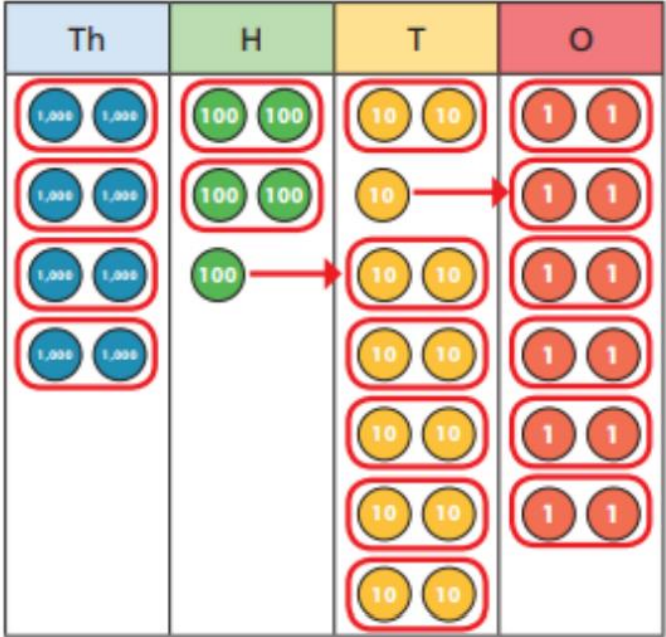
Year	Skill	Representations and Models	Examples																														
4	Divide 3-digits by 1-digit (sharing with exchange)	Base 10 Bar model Place value counters Part-whole model	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; margin-bottom: 20px;"> <math>844 \div 4 = 122</math> </div> <div style="display: flex; justify-content: space-around; width: 100%;"> <div style="text-align: center;"> <p>844</p> </div> <div style="text-align: center;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #d9ead3;"> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr><td>100 100</td><td>10</td><td>1</td></tr> <tr><td>100 100</td><td>10</td><td>1</td></tr> <tr><td>100 100</td><td>10</td><td>1</td></tr> <tr><td>100 100</td><td>10</td><td>1</td></tr> </tbody> </table> </div> <div style="text-align: center;"> </div> </div> <div style="margin-top: 20px;"> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; margin-bottom: 20px;"> <math>844 \div 4 = 122</math> </div> <div style="display: flex; justify-content: space-around; width: 100%;"> <div style="text-align: center;"> </div> <div style="text-align: center;"> </div> <div style="text-align: center;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #d9ead3;"> <th>Hundreds</th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr><td>100 100</td><td>10</td><td>1 1 1 1</td></tr> <tr><td>100 100</td><td>10</td><td>1 1 1 1</td></tr> <tr><td>100 100</td><td>10</td><td>1 1 1 1</td></tr> <tr><td>100 100</td><td>10</td><td>1 1 1 1</td></tr> </tbody> </table> </div> </div> </div> </div>	H	T	O	100 100	10	1	100 100	10	1	100 100	10	1	100 100	10	1	Hundreds	Tens	Ones	100 100	10	1 1 1 1	100 100	10	1 1 1 1	100 100	10	1 1 1 1	100 100	10	1 1 1 1
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Year	Skill	Representations and Models	Examples
4/5	Divide 3-digits by 1-digit (grouping)	Place value counters Counters Place value grid Written short division (bus stop)	   <div style="border: 1px solid black; border-radius: 15px; padding: 10px; width: fit-content; margin: 10px auto;"> <math>856 \div 4 = 214</math> </div>





Year	Skill	Representations and Models	Examples										
5	Divide 4-digits by 1-digit (grouping)	Place value counters Counters Place value grid Written short division (bus stop)	 <div style="border: 1px solid black; border-radius: 15px; padding: 10px; display: inline-block; margin-top: 20px;"> <math>8,532 \div 2 = 4,266</math> </div> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>4</td> <td>2</td> <td>6</td> <td>6</td> </tr> <tr> <td>2</td> <td style="border-left: 1px solid black;">8</td> <td>5</td> <td>3</td> <td>2</td> </tr> </table>		4	2	6	6	2	8	5	3	2
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Year	Skill	Representations and Models	Examples																														
6	Divide multi-digits by 2-digits (short division)	<p>Written short division (bus stop)</p> <p>List of multiples</p>	<div style="display: flex; flex-direction: column; align-items: center;"> <table border="1" style="margin-bottom: 20px;"> <tr><td></td><td></td><td>0</td><td>3</td><td>6</td></tr> <tr><td></td><td>12</td><td style="border-left: 2px solid black;">4</td><td>4<sub>3</sub></td><td>7<sub>2</sub></td></tr> </table> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin-bottom: 20px;"><math>432 \div 12 = 36</math></div> <table border="1" style="margin-bottom: 20px;"> <tr><td></td><td>0</td><td>4</td><td>8</td><td>9</td></tr> <tr><td>15</td><td style="border-left: 2px solid black;">7</td><td>7<sub>3</sub></td><td>13<sub>3</sub></td><td>13<sub>5</sub></td></tr> </table> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin-bottom: 20px;"><math>7,335 \div 15 = 489</math></div> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>15</td><td>30</td><td>45</td><td>60</td><td>75</td><td>90</td><td>105</td><td>120</td><td>135</td><td>150</td> </tr> </table> </div>			0	3	6		12	4	4 <sub>3</sub>	7 <sub>2</sub>		0	4	8	9	15	7	7 <sub>3</sub>	13 <sub>3</sub>	13 <sub>5</sub>	15	30	45	60	75	90	105	120	135	150
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6	Divide multi-digits by 2-digits (long division)	Written long division  List of multiples	<table border="0" style="width: 100%;"> <tr> <td style="width: 30%; text-align: right;"> <table border="1" style="border-collapse: collapse; width: 100%;"> <tr><td></td><td></td><td>0</td><td>3</td><td>6</td></tr> <tr><td>1</td><td>2</td><td>4</td><td>3</td><td>2</td></tr> <tr><td></td><td>-</td><td>3</td><td>6</td><td>0</td></tr> <tr><td></td><td></td><td></td><td>7</td><td>2</td></tr> <tr><td></td><td>-</td><td></td><td>7</td><td>2</td></tr> <tr><td></td><td></td><td></td><td></td><td>0</td></tr> </table> </td> <td style="width: 30%; vertical-align: middle;">                     (x30)                               (x6)                 </td> <td style="width: 30%; vertical-align: top;"> <math>12 \times 1 = 12</math>  <math>12 \times 2 = 24</math>  <math>12 \times 3 = 36</math>  <math>12 \times 4 = 48</math>  <math>12 \times 5 = 60</math>  <math>12 \times 6 = 72</math>  <math>12 \times 7 = 84</math>  <math>12 \times 8 = 96</math>  <math>12 \times 7 = 108</math>  <math>12 \times 10 = 120</math> </td> </tr> </table> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; width: fit-content; margin: 10px auto; text-align: center;"> <math>432 \div 12 = 36</math> </div>          <table border="0" style="width: 100%;"> <tr> <td style="width: 30%; text-align: center;"> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; width: fit-content; margin: 0 auto;"> <math>7,335 \div 15 = 489</math> </div> </td> <td style="width: 30%; text-align: right;"> <table border="1" style="border-collapse: collapse; width: 100%;"> <tr><td></td><td></td><td>0</td><td>4</td><td>8</td><td>9</td></tr> <tr><td>15</td><td></td><td>7</td><td>3</td><td>3</td><td>5</td></tr> <tr><td></td><td>-</td><td>6</td><td>0</td><td>0</td><td>0</td></tr> <tr><td></td><td></td><td></td><td>1</td><td>3</td><td>5</td></tr> <tr><td></td><td>-</td><td></td><td>1</td><td>2</td><td>0</td><td>0</td></tr> <tr><td></td><td></td><td></td><td></td><td>1</td><td>3</td><td>5</td></tr> <tr><td></td><td>-</td><td></td><td></td><td>1</td><td>3</td><td>5</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td>0</td></tr> </table> </td> <td style="width: 30%; vertical-align: top;">                     (x400)                               (x80)                               (x9)                 </td> </tr> </table>	<table border="1" style="border-collapse: collapse; width: 100%;"> <tr><td></td><td></td><td>0</td><td>3</td><td>6</td></tr> <tr><td>1</td><td>2</td><td>4</td><td>3</td><td>2</td></tr> <tr><td></td><td>-</td><td>3</td><td>6</td><td>0</td></tr> <tr><td></td><td></td><td></td><td>7</td><td>2</td></tr> <tr><td></td><td>-</td><td></td><td>7</td><td>2</td></tr> <tr><td></td><td></td><td></td><td></td><td>0</td></tr> </table>			0	3	6	1	2	4	3	2		-	3	6	0				7	2		-		7	2					0	(x30)          (x6)	$12 \times 1 = 12$ $12 \times 2 = 24$ $12 \times 3 = 36$ $12 \times 4 = 48$ $12 \times 5 = 60$ $12 \times 6 = 72$ $12 \times 7 = 84$ $12 \times 8 = 96$ $12 \times 7 = 108$ $12 \times 10 = 120$	<div style="border: 1px solid black; border-radius: 15px; padding: 10px; width: fit-content; margin: 0 auto;"> <math>7,335 \div 15 = 489</math> </div>	<table border="1" style="border-collapse: collapse; width: 100%;"> <tr><td></td><td></td><td>0</td><td>4</td><td>8</td><td>9</td></tr> <tr><td>15</td><td></td><td>7</td><td>3</td><td>3</td><td>5</td></tr> <tr><td></td><td>-</td><td>6</td><td>0</td><td>0</td><td>0</td></tr> <tr><td></td><td></td><td></td><td>1</td><td>3</td><td>5</td></tr> <tr><td></td><td>-</td><td></td><td>1</td><td>2</td><td>0</td><td>0</td></tr> <tr><td></td><td></td><td></td><td></td><td>1</td><td>3</td><td>5</td></tr> <tr><td></td><td>-</td><td></td><td></td><td>1</td><td>3</td><td>5</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td>0</td></tr> </table>			0	4	8	9	15		7	3	3	5		-	6	0	0	0				1	3	5		-		1	2	0	0					1	3	5		-			1	3	5							0	(x400)          (x80)          (x9)
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