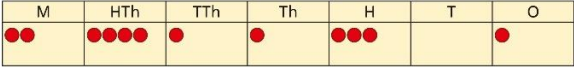
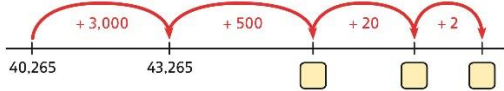
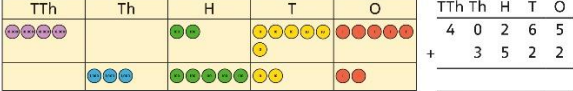
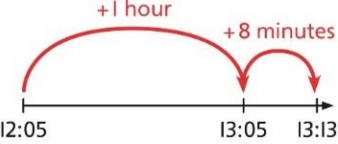


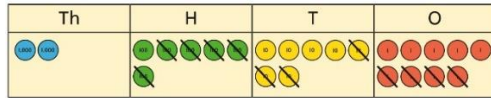
| | Concrete objects | Pictorial representations | Abstract method | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---------------------------|-----------------|-------|-----|---|---|---|----|------|---|---|-----|--|---|---|-----|----|---|---|---|------|--|----|-------|-------|--|-----|-------|----|----|---|-----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| <p>Addition</p> <p>Comparing and selecting efficient methods</p> | <p>Represent 7-digit numbers on a place value grid, and use this to support thinking and mental methods.</p>  <table border="1"> <tr> <th>M</th> <th>HTh</th> <th>TTh</th> <th>Th</th> <th>H</th> <th>T</th> <th>O</th> </tr> <tr> <td>●●</td> <td>●●●●</td> <td>●</td> <td>●</td> <td>●●●</td> <td></td> <td>●</td> </tr> </table> | M | HTh | TTh | Th | H | T | O | ●● | ●●●● | ● | ● | ●●● | | ● | <p>Discuss similarities and differences between methods, and choose efficient methods based on the specific calculation. Compare written and mental methods alongside drawing place value representations.</p>   <table border="1"> <tr> <th>TTh</th> <th>Th</th> <th>H</th> <th>T</th> <th>O</th> </tr> <tr> <td>●●●●</td> <td></td> <td>●●</td> <td>●●●●●</td> <td>●●●●●</td> </tr> <tr> <td></td> <td>●●●</td> <td>●●●●●</td> <td>●●</td> <td>●●</td> </tr> </table> <p>Draw a bar model and number line representations to model addition in problem-solving and measure contexts.</p>  | TTh | Th | H | T | O | ●●●● | | ●● | ●●●●● | ●●●●● | | ●●● | ●●●●● | ●● | ●● | <p>Use column addition where mental methods are not efficient. Recognise common errors with column addition.</p> <p>$32,145 + 4,302 = ?$</p> <table> <tr><th>TTh</th><th>Th</th><th>H</th><th>T</th><th>O</th></tr> <tr><td>3</td><td>2</td><td>1</td><td>4</td><td>5</td></tr> <tr><td>+</td><td>4</td><td>3</td><td>0</td><td>2</td></tr> <tr><td>3</td><td>6</td><td>4</td><td>4</td><td>7</td></tr> </table> <table> <tr><th>TTh</th><th>Th</th><th>H</th><th>T</th><th>O</th></tr> <tr><td>3</td><td>2</td><td>1</td><td>4</td><td>5</td></tr> <tr><td>+</td><td>4</td><td>3</td><td>0</td><td>2</td></tr> <tr><td>7</td><td>5</td><td>1</td><td>6</td><td>5</td></tr> </table> <p><i>Which method has been completed accurately?</i></p> <p><i>What mistake has been made?</i></p> <p>Column methods are also used for decimal additions where mental methods are not efficient.</p> <table> <tr><th>H</th><th>T</th><th>O</th><th>·</th><th>Tth</th><th>Hth</th></tr> <tr><td>1</td><td>4</td><td>0</td><td>·</td><td>0</td><td>9</td></tr> <tr><td>+</td><td>4</td><td>9</td><td>·</td><td>8</td><td>9</td></tr> <tr><td>1</td><td>8</td><td>9</td><td>·</td><td>9</td><td>8</td></tr> </table> | TTh | Th | H | T | O | 3 | 2 | 1 | 4 | 5 | + | 4 | 3 | 0 | 2 | 3 | 6 | 4 | 4 | 7 | TTh | Th | H | T | O | 3 | 2 | 1 | 4 | 5 | + | 4 | 3 | 0 | 2 | 7 | 5 | 1 | 6 | 5 | H | T | O | · | Tth | Hth | 1 | 4 | 0 | · | 0 | 9 | + | 4 | 9 | · | 8 | 9 | 1 | 8 | 9 | · | 9 | 8 |
| M | HTh | TTh | Th | H | T | O | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ●● | ●●●● | ● | ● | ●●● | | ● | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TTh | Th | H | T | O | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ●●●● | | ●● | ●●●●● | ●●●●● | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ●●● | ●●●●● | ●● | ●● | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TTh | Th | H | T | O | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 2 | 1 | 4 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| + | 4 | 3 | 0 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 6 | 4 | 4 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TTh | Th | H | T | O | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 2 | 1 | 4 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| + | 4 | 3 | 0 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 5 | 1 | 6 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H | T | O | · | Tth | Hth | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 4 | 0 | · | 0 | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| + | 4 | 9 | · | 8 | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 8 | 9 | · | 9 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Year 6 - Strategies Your Child is Using in School

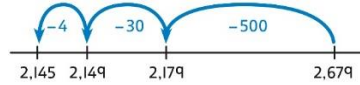
Subtraction

Comparing and selecting efficient methods .

Use counters on a place value grid to represent subtractions of larger numbers.

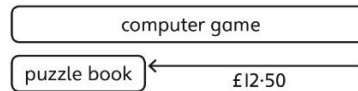


Compare subtraction methods alongside drawings of place value representations.

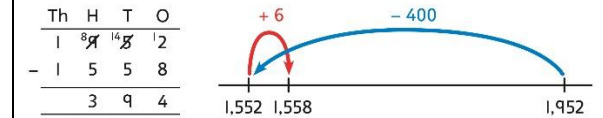


$$\begin{array}{r} \text{Th} \text{ H} \text{ T} \text{ O} \\ 2 \ 6 \ 7 \ 9 \\ - \ 5 \ 3 \ 4 \\ \hline 2 \ 1 \ 4 \ 5 \end{array}$$

Use a bar model to represent calculations, including 'find the difference' with two bars as comparison.



Compare and select methods. Use column subtraction when mental methods are not efficient. Use two different methods for one calculation as a checking strategy.



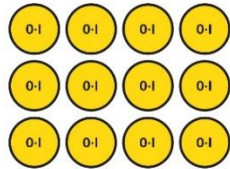
Use column subtraction for decimal problems, including in the context of measure.

$$\begin{array}{r} \text{H} \text{ T} \text{ O} \cdot \text{Tth} \text{ Hth} \\ 3 \ 0 \ 9 \cdot 6 \ 0 \\ - 2 \ 0 \ 6 \cdot 4 \ 0 \\ \hline 1 \ 0 \ 3 \cdot 2 \ 0 \end{array}$$

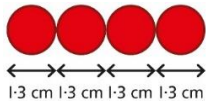
Multiplication

Multiplying decimals

Explore decimal multiplications using place value equipment and in the context of measures.



3 groups of 4 tenths is 12 tenths.
4 groups of 3 tenths is 12 tenths.



$4 \times 1 \text{ cm} = 4 \text{ cm}$
 $4 \times 0.3 \text{ cm} = 1.2 \text{ cm}$
 $4 \times 1.3 = 4 + 1.2 = 5.2 \text{ cm}$

Draw representations of calculations on a place value grid.

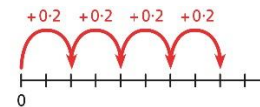
$3 \times 3 = 9$

$3 \times 0.3 = 0.9$

| T | O | • | Tth |
|---|---|---|-----|
| | | | |

Understand the link between multiplying decimals and repeated addition.

| T | O | • | Tth |
|---|---|---|-----|
| | | | |



Use known facts to multiply decimals.

$4 \times 3 = 12$
 $4 \times 0.3 = 1.2$
 $4 \times 0.03 = 0.12$

$20 \times 5 = 100$
 $20 \times 0.5 = 10$
 $20 \times 0.05 = 1$

Find families of facts from a known multiplication.

I know that $18 \times 4 = 72$.

This can help me work out:

$1.8 \times 4 = ?$
 $18 \times 0.4 = ?$
 $180 \times 0.4 = ?$
 $18 \times 0.04 = ?$

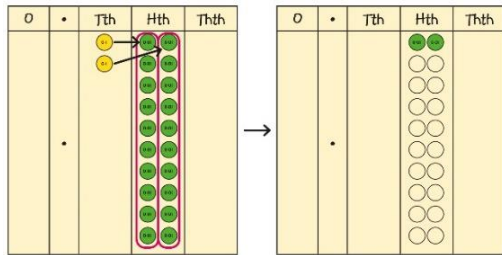
Use a place value grid to understand the effects of multiplying decimals.

| | H | T | O | • | Tth | Hth |
|-----------------|---|---|---|---|-----|-----|
| 2×3 | | | 6 | • | | |
| 0.2×3 | | | 0 | • | 6 | |
| 0.02×3 | | | | • | | |

Division

Dividing by 10, 100 and 1,000

Use place value equipment to explore division as exchange.

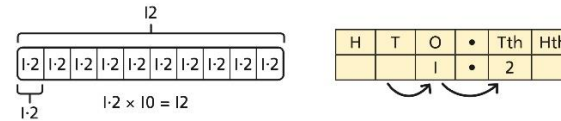


Exchange each 0.1 for ten 0.01s.

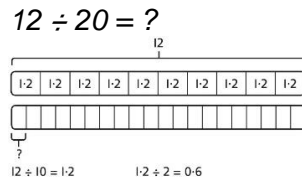
Divide 20 counters by 10.

0.2 is 2 tenths.
 2 tenths is equivalent to 20 hundredths.
 20 hundredths divided by 10 is 2 hundredths.

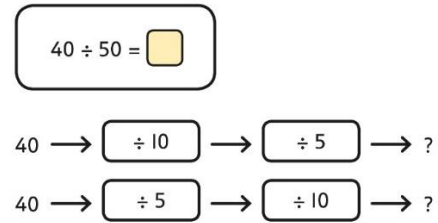
Draw a representation of division to show the relationship with multiplication. Understand the effect of dividing by 10, 100 and 1,000 on the digits on a place value grid.



Understand how to divide using division by 10, 100 and 1,000.



Use knowledge of factors to divide by multiples of 10, 100 and 1,000.



$40 \div 5 = 8$
 $8 \div 10 = 0.8$
 So, $40 \div 50 = 0.8$