

Whole School Written Calculation Policy
Pencil and paper procedures
Key Stages 1 - 2
St Joseph's Catholic Primary School

Addition

Level 1

+ = signs and missing numbers

$$\begin{array}{r} 3 + 4 = \\ 3 + \quad = 7 \\ + 4 = 7 \\ + \nabla = 7 \end{array}$$

Promoting covering up of operations and numbers.

Number lines (blank)

Using blank number lines

(Teacher model number lines with missing numbers)



Edit above number line

Level 2

+ = signs and missing numbers

Continue using a range of equations as in Year 1 but with appropriate, larger numbers.

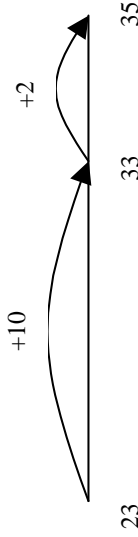
Extend to
 $14 + 5 = 10 +$
 and adding three numbers
 $32 + \quad + \quad = 100 \quad 35 = 1 + \quad + 5$

Partition into tens and ones and recombine

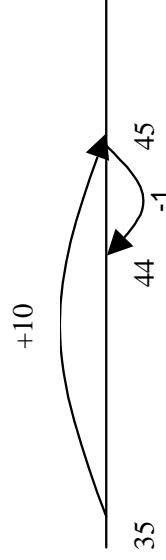
$$\begin{array}{r} 12 + 23 = 10 + 2 + 20 + 3 \\ = 30 + 5 \\ = 35 \end{array}$$

refine to partitioning the second number only:

$$\begin{array}{r} 23 + 12 = 23 + 10 + 2 \\ = 33 + 2 \\ = 35 \end{array}$$



Add 9 or 11 by adding 10 and adjusting by 1
 $35 + 9 = 44$



Level 3 (Low)

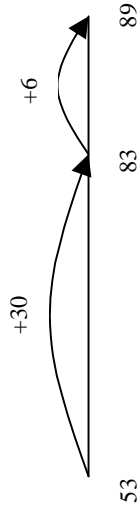
+ = signs and missing numbers

Continue using a range of equations as in Year 1 and 2 but with appropriate, larger numbers.

Partition into tens and ones and recombine

Partition both numbers and recombine. Refine to partitioning the second number only e.g.

$$\begin{array}{r} 36 + 53 = 53 + 30 + 6 \\ = 83 + 6 \\ = 89 \end{array}$$



Add a near multiple of 10 to a two-digit number

Continue as in Year 2 but with appropriate numbers e.g. $35 + 19$ is the same as $35 + 20 - 1$.

pencil and paper procedures

$$83 + 42 = 125$$

Progressing to **units first!**

$$\begin{array}{r} 80 + 3 \quad \text{to} \quad 83 \\ + 40 + 2 \quad \quad \quad + 42 \\ \hline 120 + 5 = 125 \\ \hline 120 \\ 125 \end{array}$$

Addition

Level 3 (secure)

Pencil and paper procedures

$$358 + 73 = 431$$

either

or

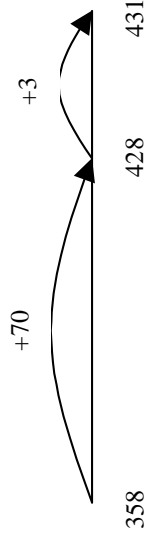
$$\begin{array}{r} 300 + 50 + 8 \\ + 70 + 3 \\ \hline 300 + 120 + 11 = 431 \end{array}$$

$$\begin{array}{r} 358 \\ + 73 \\ \hline 120 \\ + 11 \\ \hline 300 \end{array}$$

Partition into hundreds, tens and ones and recombine

Either partition both numbers and recombine or partition the second number only e.g.

$$\begin{aligned} 358 + 73 &= 358 + 70 + 3 \\ &= 428 + 3 \\ &= 431 \end{aligned}$$



Level 4

Pencil and paper procedures

Leading to formal method, showing numbers carried underneath

$$\begin{array}{r} 358 \\ + 73 \\ \hline 431 \end{array}$$

Extend to numbers with at least four digits
 $3587 + 675 = 4262$

$$\begin{array}{r} 3587 \\ + 675 \\ \hline 4262 \end{array}$$

Extend to decimals (same number of decimals places) and adding several numbers (with different numbers of digits).
Model negative numbers using a number line.

Level 5

Pencil and paper procedures

Extend to numbers with any number of digits and decimals with 1 and 2 decimal places.

$$124.9 + 117.25 = 242.15$$

$$\begin{array}{r} 124.90 \\ + 117.25 \\ \hline 242.15 \end{array}$$

add in a zero to keep the place value

Addition Year 2

Year 3

<p>Addition Objectives (excluding rapid recall)</p> <p>Calculations 24–29 Understanding addition and subtraction 24 Understand the operation of addition and use the related vocabulary. Begin to recognise that addition can be done in any order. Begin to use the +, – and = signs to record mental calculations in a number sentence, and to recognise the use of symbols such as \square or Δ to stand for an unknown number. 26 Begin to recognise that more than two numbers can be added together. 32–41 Mental calculation strategies (+ and –) 32 Use knowledge that addition can be done in any order to do mental calculations more efficiently; begin to partition into ‘5 and a bit’ when adding 6, 7, 8 or 9, then recombine (e.g. $6 + 8 = 5 + 1 + 5 + 3 = 10 + 4 = 14$). 32 Identify near doubles, using doubles already known 34 Add 9 to single-digit numbers by adding 10 then subtracting 1. 34 Use patterns of similar calculations (e.g. $10 - 0 = 10$, $10 - 1 = 9$, $10 - 2 = 8$...). 36, 38 Use known number facts and place value to add or subtract a pair of numbers mentally within the range 0 to at least 10, then 0 to at least 20. 40 Begin to bridge through 10, and later 20, when adding a single-digit number.</p>	<p>Addition Objectives (excluding rapid recall)</p> <p>Calculations 24–29 Understanding addition and subtraction 25 Extend understanding of the operation addition. Use and begin to read the related vocabulary. Use the +, – and = signs to record mental additions in a number sentence, and recognise the use of a symbol such as \square or Δ to stand for an unknown number. Recognise that addition can be done in any order. 27 Understand that more than two numbers can be added. Begin to add three single-digit numbers mentally or three two-digit numbers with the help of apparatus (totals up to 100). 25, 29 Understand that subtraction is the inverse of addition (subtraction reverses addition). 32–41 Mental calculation strategies (+ and –) 33 Use knowledge that addition can be done in any order to do mental calculations more efficiently. add three small numbers by putting the largest number first and/or find a pair totalling 10; partition into ‘5 and a bit’ when adding 6, 7, 8 or 9, then recombine; partition additions into tens and units, then recombine. 33 Identify near doubles, using doubles already known 35 Add/subtract 9 or 11: +/- 10 and adjust by 1. Begin to add/subtract 19 or 21: +/- 20 and adjust by 1. 35 Use patterns of similar calculations. 35 State the subtraction corresponding to a given addition, and vice versa. 37, 39 Use known number facts and place value to add/subtract mentally. 41 Bridge through 10 or 20, then adjust.</p>	<p>Addition Objectives (excluding rapid recall)</p> <p>Calculations 24–29 Understanding addition and subtraction 25 Extend understanding of the operation of addition, read and begin to write the related vocabulary, and continue to recognise that addition can be done in any order. Use the +, – and = signs. 27 Extend understanding that more than two numbers can be added; add three or four single-digit numbers mentally, or three or four two-digit numbers with the help of apparatus or pencil and paper. 25, 29 Extend understanding that subtraction is the inverse of addition. 32–41 Mental calculation strategies (+ and –) 33 Use knowledge that addition can be done in any order to do mental calculations more efficiently. Add three or four small numbers by putting the largest number first and/or by finding pairs totalling 9, 10 or 11; partition into tens and units, then recombine 33 Identify near doubles, using doubles already known 35 Add and subtract mentally a ‘near multiple of 10’ to or from a two-digit number. 35 Use patterns of similar calculations. 35 Say or write a subtraction statement corresponding to a given addition statement, and vice versa. 37, 39 Use known number facts and place value to add/subtract mentally. 41 Bridge through a multiple of 10, then adjust. 42–45 Pencil and paper procedures (+ and –) 43, 45 Use informal pencil and paper methods to support, record or explain HTU + TU, HTU + HTU. Begin to use column addition for HTU + TU where the calculation cannot easily be done mentally.</p>
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Addition		
Year 4	Year 5	Year 6
<p>Addition Objectives (excluding rapid recall)</p> <p>Calculations 34–37 Understanding addition and subtraction 34 Consolidate understanding of relationship between + and –. Understand the principles of the commutative and associative laws as they apply or not to addition and subtraction.</p> <p>40–47 Mental calculation strategies (+ and –) 40 Count on/back in repeated steps of 1, 10 or 100. Partition into tens and units, adding the tens first. Identify near doubles, using known doubles Add/subtract the nearest multiple of 10, then adjust. 42 Continue to use the relationship between +/-. 42 Add 3 or 4 small numbers, finding pairs totalling 10, or 9 or 11. Add three two-digit multiples of 10. 44, 46 Use known number facts and place value to add or subtract mentally, including any pair of two-digit whole numbers</p> <p>48–51 Pencil and paper procedures (+ and –) 48 Use informal pencil and paper methods to support, record or explain additions. Develop and refine written methods for: column addition of two whole numbers less than 1000, and addition of more than two such numbers; money calculations (for example, £7.85 ± £3.49).</p>	<p>Addition Objectives (excluding rapid recall)</p> <p>Calculations 40–47 Mental calculation strategies (+ and –) 41 Partition into H, T and U, adding the most significant digits first. 41 Identify near doubles, such as 1.5 + 1.6. 41 Add or subtract the nearest multiple of 10 or 100, then adjust. 43 Develop further the relationship between addition and subtraction. 43 Add several numbers (e.g. four or five single digits, or multiples of 10 such as 40 + 50 + 80). 45, 47 Use known number facts and place value for mental addition and subtraction (e.g. 470 + 380, 7.4 + 9.8). 48–51 Pencil and paper procedures (+ and –) 49 Use informal pencil and paper methods to support, record or explain additions. Extend written methods to: column addition of two integers less than 10000; addition of more than two integers less than 10000; addition of a pair of decimal fractions, both with one or both with two decimal places (e.g. £29.78 + £53.34).</p>	<p>Addition Objectives (excluding rapid recall)</p> <p>Calculations 40–47 Mental calculation strategies (+ and –) 41 Consolidate all strategies from previous year, including: add or subtract the nearest multiple of 10, 100 or 1000, then adjust; use the relationship between addition and subtraction; add several numbers. 45, 47 Use known number facts and place value to consolidate mental addition/subtraction (e.g. 470 + 380, 7.4 + 9.8). 48–51 Pencil and paper procedures (+ and –) 49 Use informal pencil and paper methods to support, record or explain additions. Extend written methods to column addition of numbers involving decimals</p>

MUST Targets for Addition		
Year 1	Year 2	Year 3
<p>I can count and number name 10 objects in lots of different ways.</p> <p>I can say what one more than a number is.</p> <p>I can say how many there are altogether by counting all the objects.</p> <p>I can use the words more, and, add, sum, total, altogether to describe my counting and adding.</p>	<p>I can recognise that addition can be done in any order.</p> <p>I can use the +, – and = signs to record mental calculations in a number sentence</p> <p>I can recognise the use of symbols such as \square or \triangle to stand for an unknown number.</p> <p>I can recognise that more than two numbers can be added together.</p>	<p>I can use and begin to read the related vocabulary.</p> <p>I can use the +, – and = signs to record mental additions in a number sentence.</p> <p>I can recognise the use of a symbol such as \square or \triangle to stand for an unknown number.</p> <p>I can recognise that addition can be done in any order.</p> <p>I understand that more than two numbers can be added.</p> <p>I can begin to add three single-digit numbers mentally or three two-digit numbers with the help of apparatus (totals up to 100).</p> <p>I understand that subtraction is the inverse of addition (subtraction reverses addition).</p>

SHOULD Targets for Addition		
Year 1	Year 2	Year 3
<p>I can recognise that addition can be done in any order.</p> <p>I can use the +, – and = signs to record mental calculations in a number sentence</p> <p>I can recognise the use of symbols such as \square or \triangle to stand for an unknown number.</p> <p>I can recognise that more than two numbers can be added together.</p>	<p>I can use and begin to read the related vocabulary.</p> <p>I can use the +, – and = signs to record mental additions in a number sentence.</p> <p>I can recognise the use of a symbol such as \square or \triangle to stand for an unknown number.</p> <p>I can recognise that addition can be done in any order.</p> <p>I understand that more than two numbers can be added.</p> <p>I can begin to add three single-digit numbers mentally or three two-digit numbers with the help of apparatus (totals up to 100).</p> <p>I understand that subtraction is the inverse of addition (subtraction reverses addition).</p>	<p>I can read and begin to write the related vocabulary</p> <p>I can recognise that addition can be done in any order.</p> <p>I can use the +, – and = signs.</p> <p>I know that more than two numbers can be added;</p> <p>I can add three or four single-digit numbers mentally,</p> <p>I can add three or four two-digit numbers with the help of apparatus or pencil and paper.</p> <p>I understand that subtraction is the inverse of addition</p>

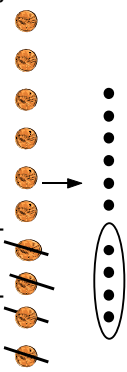

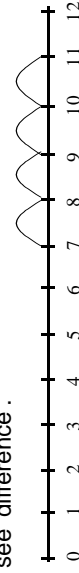
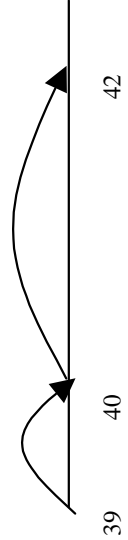
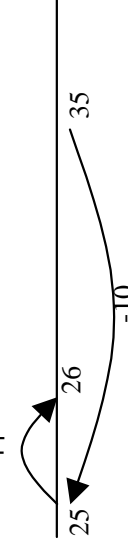
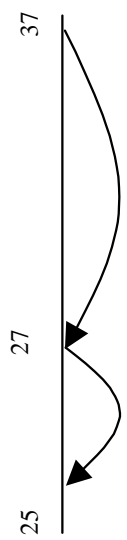
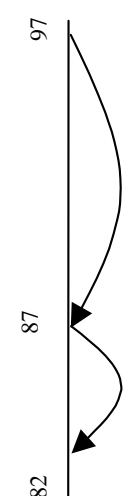
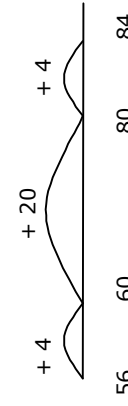
COULD Targets for Addition		
Year 1	Year 2	Year 3
<p>I can use and begin to read the related vocabulary.</p> <p>I can use the +, – and = signs to record mental additions in a number sentence.</p> <p>I can recognise the use of a symbol such as \square or \triangle to stand for an unknown number.</p> <p>I can recognise that addition can be done in any order.</p> <p>I understand that more than two numbers can be added.</p> <p>I can begin to add three single-digit numbers mentally or three two-digit numbers with the help of apparatus (totals up to 100).</p> <p>I understand that subtraction is the inverse of addition</p>	<p>I can read and begin to write the related vocabulary</p> <p>I can recognise that addition can be done in any order.</p> <p>I can use the +, – and = signs.</p> <p>I know that more than two numbers can be added;</p> <p>I can add three or four single-digit numbers mentally,</p> <p>I can add three or four two-digit numbers with the help of apparatus or pencil and paper.</p> <p>I understand that subtraction is the inverse of addition</p>	<p>I can count on/back in repeated steps of 1, 10 or 100.</p> <p>I can partition into tens and units, adding the tens first.</p> <p>I can identify near doubles, using known doubles</p> <p>I can add/subtract the nearest multiple of 10, and adjust.</p> <p>I can continue to use the relationship between +/-</p> <p>I can add 3 or 4 small numbers, finding pairs totalling 10, or 9 or 11.</p> <p>I can add three two-digit multiples of 10.</p> <p>I can use known number facts and place value to add or subtract mentally, including any pair of two-digit whole numbers.</p>

MUST Targets for Addition		
Year 4	Year 5	Year 6
<p>I can read and begin to write the related vocabulary</p> <p>I can recognise that addition can be done in any order.</p> <p>I can use the +, - and = signs.</p> <p>I know that more than two numbers can be added;</p> <p>I can add three or four single-digit numbers mentally,</p> <p>I can add three or four two-digit numbers with the help of apparatus or pencil and paper.</p> <p>I understand that subtraction is the inverse of addition.</p>	<p>I can count on/back in repeated steps of 1, 10 or 100.</p> <p>I can partition into tens and units, adding the tens first.</p> <p>I can identify near doubles, using known doubles</p> <p>I can add/subtract the nearest multiple of 10, and then adjust.</p> <p>I can continue to use the relationship between +/-</p> <p>I can add 3 or 4 small numbers, finding pairs totalling 10, or 9 or 11.</p> <p>I can add three two-digit multiples of 10.</p> <p>I can use known number facts and place value to add or subtract mentally, including any pair of two-digit whole numbers.</p>	<p>I can partition numbers into H, T and U, adding the most significant digits first.</p> <p>I can identify near doubles, such as $1.5 + 1.6$.</p> <p>I can add or subtract the nearest multiple of 10 or 100, then adjust.</p> <p>I can develop further the relationship between addition and subtraction.</p> <p>I can add several numbers (e.g. four or five single digits, or multiples of 10 such as $40 + 50 + 80$).</p> <p>I can use known number facts and place value for mental addition and subtraction (e.g. $470 + 380, 7.4 + 9.8$).</p>

SHOULD Targets for Addition		
Year 4	Year 5	Year 6
<p>I can count on/back in repeated steps of 1, 10 or 100.</p> <p>I can partition into tens and units, adding the tens first.</p> <p>I can identify near doubles, using known doubles</p> <p>I can add/subtract the nearest multiple of 10, and then adjust.</p> <p>I can continue to use the relationship between +/-</p> <p>I can add 3 or 4 small numbers, finding pairs totalling 10, or 9 or 11.</p> <p>I can add three two-digit multiples of 10.</p> <p>I can use known number facts and place value to add or subtract mentally, including any pair of two-digit whole numbers.</p>	<p>I can partition numbers into H, T and U, adding the most significant digits first.</p> <p>I can identify near doubles, such as $1.5 + 1.6$.</p> <p>I can add or subtract the nearest multiple of 10 or 100, then adjust.</p> <p>I can develop further the relationship between addition and subtraction.</p> <p>I can add several numbers (e.g. four or five single digits, or multiples of 10 such as $40 + 50 + 80$).</p> <p>I can use known number facts and place value for mental addition and subtraction (e.g. $470 + 380, 7.4 + 9.8$).</p>	<p>I can add or subtract the nearest multiple of 10, 100 or 1000, then adjust.</p> <p>I can use the relationship between addition and subtraction</p> <p>I can add several numbers.</p> <p>I can use known number facts and place value to consolidate mental addition/subtraction (e.g. $470 + 380, 7.4 + 9.8$).</p>

COULD Targets for Addition		
Year 4	Year 5	Year 6
<p>I can partition numbers into H, T and U, & add the most significant digits first.</p> <p>I can identify near doubles, such as $1.5 + 1.6$.</p> <p>I can add the nearest multiple of 10 or 100, then adjust.</p> <p>I can develop further the relationship between addition and subtraction.</p> <p>I can add several numbers (e.g. four or five single digits, or multiples of 10 such as $40 + 50 + 80$).</p> <p>I can use known number facts and place value for mental addition and subtraction (e.g. $470 + 380, 7.4 + 9.8$).</p>	<p>I can add or subtract the nearest multiple of 10, 100 or 1000, then adjust.</p> <p>I can use the relationship between addition and subtraction</p> <p>I can add several numbers.</p> <p>I can use known number facts and place value to consolidate mental addition/subtraction (e.g. $470 + 380, 7.4 + 9.8$).</p>	<p>I can use informal pencil and paper methods to support, record or explain additions.</p> <p>I can extend my written methods to: column addition of two integers less than 10000;</p> <p>I can carry out addition of more than two integers less than 10000;</p> <p>I can extend my written methods to column addition of numbers involving decimals.</p> <p>I can carry out addition of a pair of decimal fractions, both with one or both with two decimal places (e.g. $£29.78 + £53.34$).</p>

Subtraction

Subtraction		
Level 1	Level 2	Level 3 (low)
<p>Pictures / marks Sam spent 4p. What was his change from 10p?</p>  <p>- = signs and missing numbers $7 - 3 = \quad = 7 - 3$ $7 - \quad = 4 \quad 4 = \quad - 3$ $\quad - 3 = 4 \quad 4 = 7 - \quad$ $\quad - \sphericalangle = 4 \quad 4 = \quad - \sphericalangle$</p> <p style="text-align: center;">Visual / practical activities</p> <p style="text-align: center;">Number lines (empty)</p>  <p style="text-align: center; color: green;">Consider reversing?</p> <p>The difference between 7 and 11 (Counting on) To reinforce concept. Practical strategies essential to see 'difference'.</p>  <p>Recording by - drawing jumps on prepared lines - constructing own lines</p> <p>(Teachers model jottings appropriate for larger numbers)</p>	<p>- = signs and missing numbers Continue using a range of equations as in Level 1 but with appropriate numbers. Extend to $14 + 5 = 20 -$ Find a small difference by counting up</p> <p>$42 - 39 = 3$</p> <p style="text-align: center;">$+ 1$ $+ 2$</p>  <p>Mental Method: Subtract 9 or 11. Begin to add/subtract 19 or 21 $35 - 9 = 26$</p> <p style="text-align: center;">$+ 1$</p>  <p>Use known number facts and place value to subtract (partition second number only) $37 - 12 = 37 - 10 - 2$ $= 27 - 2$ $= 25$</p> 	<p>Find a small difference by counting up Continue as in Level 2 but with appropriate numbers e.g. $102 - 97 = 5$</p> <p>Use known number facts and place value to subtract Continue as in Level 2 but with appropriate numbers e.g. 3 digit number - 2 digit number. $197 - 15 = 182$</p>  <p style="text-align: center;">$- 5$ $- 10$</p> <p>Pencil and paper procedures Complementary addition $84 - 56 = 28$</p> 

Subtraction		
Level 3 (Secure)	Level 4	Level 5
<p>Pencil and paper procedures Complementary addition $754 - 86 = 668$</p> $\begin{array}{r} 86 \\ 14 \text{ (300)} \\ 400 \text{ (700)} \\ \hline 54 \text{ (754)} \\ 468 \end{array}$ $\begin{array}{r} 98 \\ - 24 \\ \hline 4 \text{ (8-4)} \\ 70 \text{ (90-20)} \\ \hline 74 \end{array}$ <p>Pencil and paper procedures Complementary addition $754 - 86 = 668$</p> <p>Use decomposition with top set when appropriate</p> $\begin{array}{r} 8 \text{ } 1 \\ 92 \\ - 38 \\ \hline 54 \end{array}$	<p>Find a difference by counting up e.g. $8006 - 2993 = 5013$ This can be modelled on an empty number line</p> <p>Pencil and paper procedures</p> $\begin{array}{r} 8 \text{ } 1 \\ 92 \\ - 38 \\ \hline 54 \end{array}$	<p>- = signs and missing numbers</p> <p>Pencil and paper procedures</p> <p>Use decomposition</p> $\begin{array}{r} 2 \text{ } 4 \text{ } 1 \\ 352 \\ - 178 \\ \hline 174 \end{array}$

Subtraction Year 2

Year 1

Year 3

<p>Subtraction Objectives (excluding rapid recall)</p> <p>Calculations 24–29 Understanding addition and subtraction 28 Understand the operation of subtraction (as 'take away', 'difference', and 'how many more to make'), and use the related vocabulary. Begin to use the +, – and = signs to record mental calculations in a number sentence, and to recognise the use of symbols such as \square or Δ to stand for an unknown number.</p> <p>32–41 Mental calculation strategies (+ and –)</p> <p>34 Use patterns of similar calculations (e.g. $10 - 0 = 10$, $10 - 1 = 9$, $10 - 2 = 8$...).</p> <p>36, 38 Use known number facts and place value to add or subtract a pair of numbers mentally within the range 0 to at least 10, then 0 to at least 20.</p>	<p>Subtraction Objectives (excluding rapid recall)</p> <p>Calculations 24–29 Understanding addition and subtraction 29 Extend understanding of the operation of subtraction. Use and begin to read the related vocabulary. Use the +, – and = signs to record mental additions and subtractions in a number sentence, and recognise the use of a symbol such as \square or Δ to stand for an unknown number. Recognise that addition can be done in any order, but not subtraction: for example, $3 + 21 = 21 + 3$, but $21 - 3$ does not equal $3 - 21$.</p> <p>25, 29 Understand that subtraction is the inverse of addition (subtraction reverses addition).</p> <p>32–41 Mental calculation strategies (+ and –)</p> <p>33 Find a small difference by counting up from the smaller to the larger number (e.g. $42 - 39$).</p> <p>35 Add/subtract 9 or 11: add/subtract 10 and adjust by 1. Begin to add/subtract 19 or 21: add/subtract 20 and adjust by 1.</p> <p>35 Use patterns of similar calculations. 35 State the subtraction corresponding to a given addition, and vice versa. 37, 39 Use known number facts and place value to add/subtract mentally.</p>	<p>Subtraction Objectives (excluding rapid recall)</p> <p>Calculations 24–29 Understanding addition and subtraction 29 Extend understanding of the operation of subtraction, read and begin to write the related vocabulary. Use the +, – and = signs. 25, 29 Extend understanding that subtraction is the inverse of addition.</p> <p>32–41 Mental calculation strategies (+ and –)</p> <p>33 Find a small difference by counting up from the smaller to the larger number (e.g. $102 - 97$).</p> <p>35 Add and subtract mentally a 'near multiple of 10' to or from a two-digit number... by adding or subtracting 10, 20, 30... and adjusting. 35 Use patterns of similar calculations. 35 Say or write a subtraction statement corresponding to a given addition statement, and vice versa. 37, 39 Use known number facts and place value to add/subtract mentally.</p> <p>42–45 Pencil and paper procedures (+ and –) 43, 45 Use informal pencil and paper methods to support, record or explain $HTU \pm TU$, $HTU \pm HTU$. Begin to use column addition and subtraction for $HTU \pm TU$ where the calculation cannot easily be done mentally.</p>
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Subtraction Year 5

Year 4

Year 6

<p>Subtraction Objectives (excluding rapid recall)</p> <p>Calculations 34–37 Understanding addition and subtraction between + and –. Understand the principles (not the names) of the commutative and associative laws as they apply or not to addition and subtraction.</p> <p>40–47 Mental calculation strategies (+ and –) 40 Find a small difference by counting up (e.g. 5003 – 4996). Count on or back in repeated steps of 1, 10 or 100. 41 Add or subtract the nearest multiple of 10, then adjust. 42 Continue to use the relationship between addition and subtraction. 44, 46 Use known number facts and place value to add or subtract mentally, including any pair of two-digit whole numbers.</p> <p>48–51 Pencil and paper procedures (+ and –)</p> <p>50 Use informal pencil and paper methods to support, record or explain subtractions. Develop and refine written methods for: column subtraction of two whole numbers less than 1000; money calculations (for example, £7.85 ± £3.49).</p>	<p>Subtraction Objectives (excluding rapid recall)</p> <p>Calculations 40–47 Mental calculation strategies (+ and –) 41 Find differences by counting up through next multiple of 10, 100 or 1000, e.g. calculate mentally a difference such as 8006 – 2993. 41 Add or subtract the nearest multiple of 10 or 100, then adjust. 43 Develop further the relationship between addition and subtraction. 45, 47 Use known number facts and place value for mental addition and subtraction (e.g. 810 – 380, 9.2 – 8.6).</p> <p>48–51 Pencil and paper procedures (+ and –)</p> <p>51 Use informal pencil and paper methods to support, record or explain subtractions. Extend written methods to: column subtraction of two integers less than 10000; addition or subtraction of a pair of decimal fractions, both with one or both with two decimal places.</p>	<p>Subtraction Objectives (excluding rapid recall)</p> <p>Calculations 40–47 Mental calculation strategies (+ and –) 43 Consolidate all strategies from previous year, including: find a difference by counting up; add or subtract the nearest multiple of 10, 100 or 1000, then adjust; use the relationship between addition and subtraction. 45, 47 Use known number facts and place value to consolidate mental addition/subtraction (e.g. 810 – 380, 9.2 – 8.6). 48–51 Pencil and paper procedures (+ and –) 51 Use informal pencil and paper methods to support, record or explain subtractions. Extend written methods to column subtraction of numbers involving decimals.</p>
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MUST Targets for Subtraction
Year 2

Year 1

Year 3

<p>I can use the +, - and = signs to record mental calculations in a number sentence. I can recognise the use of symbols such as or Δ to stand for an unknown number. I can use patterns of similar calculations (e.g. $10 - 0 = 10$, $10 - 1 = 9$, $10 - 2 = 8...$). I can use known number facts and place value to subtract a pair of numbers mentally within the range 0 to at least 10, then 0 to at least 20.</p>	<p>I can use and begin to read the related vocabulary. I can use the +, - and = signs to record mental additions and subtractions in a number sentence. I can recognise the use of a symbol such as or Δ to stand for an unknown number. I can recognise that addition can be done in any order, but not subtraction: for example, $3 + 21 = 21 + 3$, but $21 - 3$ does not equal $3 - 21$. I understand that subtraction is the inverse of addition (subtraction reverses addition). I can find a small difference by counting up from the smaller to the larger number (e.g. $42 - 39$). I can add/subtract 9 or 11: add/subtract 10 and adjust by 1. I can begin to add/subtract 19 or 21: add/subtract 20 and adjust by 1.</p>
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SHOULD Targets for Subtraction
Year 2

Year 1

Year 3

<p>I can use and begin to read the related vocabulary. I can use the +, - and = signs to record mental additions and subtractions in a number sentence. I can recognise the use of a symbol such as or Δ to stand for an unknown number. I can recognise that addition can be done in any order, but not subtraction: for example, $3 + 21 = 21 + 3$, but $21 - 3$ does not equal $3 - 21$. I understand that subtraction is the inverse of addition (subtraction reverses addition). I can find a small difference by counting up from the smaller to the larger number (e.g. $42 - 39$). I can add/subtract 9 or 11: add/subtract 10 and adjust by 1. I can begin to add/subtract 19 or 21: add/subtract 20 and adjust by 1.</p>	<p>I can read and begin to write the related vocabulary. I can use the +, - and = signs. I can find a small difference by counting up from the smaller to the larger number (e.g. $102 - 97$). I can add and subtract mentally a 'near multiple of 10' to or from a two-digit number... by adding or subtracting 10, 20, 30... and adjusting. I can use patterns of similar calculations. I can say or write a subtraction statement corresponding to a given addition statement, and vice versa. I can use known number facts and place value to add/subtract mentally.</p>
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COULD Targets for Subtraction

Year 1

I can use and begin to read the related vocabulary.
 I can use the +, - and = signs to record mental additions and subtractions in a number sentence.
 I can recognise the use of a symbol such as \square or \triangle to stand for an unknown number.
 I can recognise that addition can be done in any order, but not subtraction: for example, $3 + 21 = 21 + 3$, but $21 - 3$ does not equal $3 - 21$.
 I understand that subtraction is the inverse of addition (subtraction reverses addition).
 I can find a small difference by counting up from the smaller to the larger number (e.g. $42 - 39$).
 I can add/subtract 9 or 11: add/subtract 10 and adjust by 1.
 I can begin to add/subtract 19 or 21: add/subtract 20 and adjust by 1.

Year 2

I can read and begin to write the related vocabulary.
 I can use the +, - and = signs.
 I can find a small difference by counting up from the smaller to the larger number (e.g. $102 - 97$).
 I can add and subtract mentally a 'near multiple of 10' to or from a two-digit number... by adding or subtracting 10, 20, 30... and adjusting.
 I can use patterns of similar calculations.
 I can say or write a subtraction statement corresponding to a given addition statement, and vice versa.
 I can use known number facts and place value to add/subtract mentally.

Year 3

I can find a small difference by counting up (e.g. $5003 - 4996$).
 I can count on or back in repeated steps of 1, 10 or 100.
 I can add or subtract the nearest multiple of 10, then adjust.
 I can continue to use the relationship between addition and subtraction.
 I can use known number facts and place value to add or subtract mentally, including any pair of two-digit whole numbers.

MUST Targets for Subtraction		
Year 4	Year 5	Year 6
<p>I can read and begin to write the related vocabulary.</p> <p>I can use the +, - and = signs.</p> <p>I can find a small difference by counting up from the smaller to the larger number (e.g. 102 – 97).</p> <p>I can subtract mentally a 'near multiple of 10' to or from a two-digit number... by adding or subtracting 10, 20, 30... and adjusting.</p> <p>I can use patterns of similar calculations.</p> <p>I can say or write a subtraction statement corresponding to a given addition statement, and vice versa.</p> <p>I can use known number facts and place value to add/subtract mentally.</p>	<p>I can find a small difference by counting up (e.g. 5003 – 4996).</p> <p>I can count on or back in repeated steps of 1, 10 or 100.</p> <p>I can add or subtract the nearest multiple of 10, then adjust.</p> <p>I can continue to use the relationship between addition and subtraction.</p> <p>I can use known number facts and place value to add or subtract mentally, including any pair of two-digit whole numbers.</p>	<p>I can find differences by counting up through next multiple of 10, 100 or 1000, e.g. calculate mentally a difference such as 8006 – 2993.</p> <p>I can add or subtract the nearest multiple of 10 or 100, then adjust.</p> <p>I can develop further the relationship between addition and subtraction.</p> <p>I can use known number facts and place value for mental addition and subtraction (e.g. 810 – 380, 9.2 – 8.6).</p>
SHOULD Targets for Subtraction		
Year 4	Year 5	Year 6
<p>I can find a small difference by counting up (e.g. 5003 – 4996).</p> <p>I can count on or back in repeated steps of 1, 10 or 100.</p> <p>I can add or subtract the nearest multiple of 10, then adjust.</p> <p>I can continue to use the relationship between addition and subtraction.</p> <p>I can use known number facts and place value to add or subtract mentally, including any pair of two-digit whole numbers.</p>	<p>I can find differences by counting up through next multiple of 10, 100 or 1000, e.g. calculate mentally a difference such as 8006 – 2993.</p> <p>I can add or subtract the nearest multiple of 10 or 100, then adjust.</p> <p>I can develop further the relationship between addition and subtraction.</p> <p>I can use known number facts and place value for mental addition and subtraction (e.g. 810 – 380, 9.2 – 8.6).</p>	<p>I can find a difference by counting up; add or subtract the nearest multiple of 10, 100 or 1000, then adjust.</p> <p>I can use the relationship between addition and subtraction.</p> <p>I can use known number facts and place value to consolidate mental addition/subtraction (e.g. 810 – 380, 9.2 – 8.6).</p> <p>I can use informal pencil and paper methods to support record or explain subtractions.</p> <p>I can extend written methods to column subtraction of numbers involving decimals.</p>
COULD Targets for Subtraction		
Year 4	Year 5	Year 6
<p>I can find differences by counting up through next multiple of 10, 100 or 1000, e.g. calculate mentally a difference such as 8006 – 2993.</p> <p>I can add or subtract the nearest multiple of 10 or 100, then adjust.</p> <p>I can develop further the relationship between addition and subtraction.</p> <p>I can use known number facts and place value for mental addition and subtraction (e.g. 810 – 380, 9.2 – 8.6).</p>	<p>I can find a difference by counting up; add or subtract the nearest multiple of 10, 100 or 1000, then adjust.</p> <p>I can use the relationship between addition and subtraction.</p> <p>I can use known number facts and place value to consolidate mental addition/subtraction (e.g. 810 – 380, 9.2 – 8.6).</p>	<p>I can use informal pencil and paper methods to support record or explain subtractions.</p> <p>I can extend written methods to column subtraction of numbers involving decimals.</p>

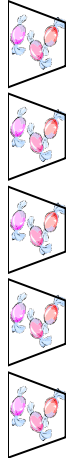
Multiplication

Level 1

Level 3 (Low)

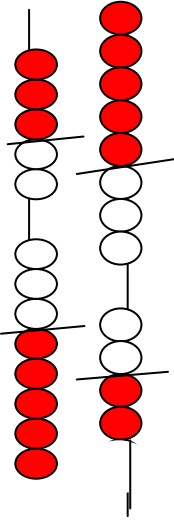
Pictures and symbols

There are 3 sweets in one bag.
How many sweets are there in 5 bags?



(Recording on a number line modelled by the teacher when solving problems)

Use of bead strings to model groups of.



x = signs and missing numbers

$$7 \times 2 = 14$$

$$x 2 = 14$$

$$x \nabla = 14$$

$$= 2 \times 7$$

$$14 = x 7$$

$$14 = 2 x$$

$$14 = x \nabla$$

Arrays and repeated addition



or repeated addition

$$2 + 2 + 2 + 2$$



0 1 2 3 4 5 6 7 8

Doubling multiples of 5 up to 50

$$15 \times 2 = 30$$

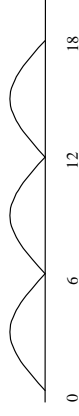
Partition

x	10	5	
2	20	10	30

x = signs and missing numbers

Continue using a range of equations as in Level 2 but with appropriate numbers.

Number lines
 6×3



$$35 \times 2 = 70$$

Partition

x	30	5	
2	60	10	70

Multiplication

Level 3 (Secure)	Level 4	Level 5
<p>Pencil and paper procedures Grid method 23 x 7 is approximately 20 x 10 = 200</p> $\begin{array}{r} \text{T} \quad \text{U} \\ \text{X} \quad \quad 20 \quad \quad 3 \\ \hline 7 \quad \quad 140 \quad \quad 21 \\ \hline \end{array}$ <p style="text-align: right; color: red; font-weight: bold;">HTU x U?</p> <p>Add a grid</p>	<p>x = signs and missing numbers Continue using a range of equations as in Year 2 but with appropriate numbers</p> <p>Pencil and paper procedures Grid method 72 x 38 is approximately 70 x 40 = 2800</p> $\begin{array}{r} \text{X} \quad \quad 70 \quad \quad 2 \\ \hline 30 \quad \quad 2100 \quad \quad 60 \\ \hline 8 \quad \quad 560 \quad \quad 16 \\ \hline \end{array}$ <p>Add in column addition to the right of calc.</p> <p>Estimate and check</p> <p>Moving on to formal method when appropriate. 'Carried' numbers to sit on top line of answer box</p> $\begin{array}{r} 125 \\ \times \quad \underline{137} \\ \hline 875 \\ 1250 \\ \hline 2125 \end{array}$ <p style="color: red; font-weight: bold;">Th H T U x U?</p> <p>Add a grid for above calculation</p> <p>Change above calc. to hitu x tu</p>	<p>x = signs and missing numbers Continue using a range of equations as in Year 2 but with appropriate numbers</p> <p>Pencil and paper procedures Grid method – Estimate and check</p> <p>372 x 24 is approximately 400 x 20 = 8000</p> $\begin{array}{r} \text{X} \quad \quad 300 \quad \quad 70 \quad \quad 2 \\ \hline 20 \quad \quad 6000 \quad \quad 1400 \quad \quad 40 \\ \hline 4 \quad \quad 1200 \quad \quad 280 \quad \quad 8 \\ \hline \end{array} = 7440 = 1488 + 8928$ <p>Moving on to formal method when appropriate. 'Carried' numbers to sit on top line of answer box</p> $\begin{array}{r} 125 \\ \times \quad \underline{137} \\ \hline 875 \\ 1250 \\ \hline 2125 \end{array}$

Multiplication Year 2

Year 1

Year 3

<p>Multiplication Objectives (excluding rapid recall)</p> <p>Calculations 46–51 Understanding multiplication and division 47 Understand the operation of multiplication as repeated addition or as describing an array. Use and begin to read the related vocabulary. Use the \times, \div and $=$ signs to record mental calculations in a number sentence, and recognise the use of a symbol such as \square or \triangle to stand for an unknown number. 47, 49 Know and use halving as the inverse of doubling.</p> <p>54–57 Mental calculation strategies (x and \div) 57 Use known number facts and place value to carry out mentally simple multiplications.</p>	<p>Multiplication Objectives (excluding rapid recall)</p> <p>Calculations 46–51 Understanding multiplication and division 47 Understand multiplication as repeated addition. Read and begin to write the related vocabulary. Extend understanding that multiplication can be done in any order. 49 Recognise that division is the inverse of multiplication, and that halving is the inverse of doubling.</p> <p>54–57 Mental calculation strategies (x and \div) 55 To multiply by 10/100, shift the digits one/two places to the left. 55 Use doubling or halving, starting from known facts (e.g. 8×4 is double 4×4). 55 Say or write a division statement corresponding to a given multiplication statement. 57 Use known number facts and place value to carry out mentally simple multiplications.</p>	
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Multiplication Year 5

Year 6

<p>Multiplication Objectives (excluding rapid recall)</p> <p><u>Calculations</u> 52–57 Understanding multiplication and division 54 Extend understanding of the operations of \times and \div, and their relationships to each other and to $+$ and $-$. Understand the principles (not the names) of the commutative, associative and distributive laws as they apply to multiplication.</p> <p>60–65 Mental calculation strategies (\times and \div)</p> <p>60 Use doubling or halving, starting from known facts. For example: double/halve two-digit numbers by doubling/halving the tens first; to multiply by 4, double, then double again; to multiply by 5, multiply by 10 then halve; find the 8 times-table facts by doubling the 4 times-table;</p> <p>62 Use closely related facts (e.g. to multiply by 9 or 11, multiply by 10 and adjust; develop the $\times 6$ table from the $\times 4$ and $\times 2$ tables).</p> <p>62 Partition (e.g. $23 \times 4 = (20 \times 4) + (3 \times 4)$).</p> <p>62 Use the relationship between \times and \div</p> <p>64 Use known number facts and place value to multiply and divide integers, including by 10 and then 100 (whole-number answers).</p> <p>66–69 Pencil and paper procedures (\times and \div)</p> <p>66 Approximate first. Use informal pencil and paper methods to support, record or explain multiplications. Develop and refine written methods for $TU \times U$</p>	<p>Multiplication Objectives (excluding rapid recall)</p> <p><u>Calculations</u> 52–57 Understanding multiplication and division 53, 55 Understand the effect of and relationships between the four operations, and the principles (not the names) of the arithmetic laws as they apply to multiplication. Begin to use brackets.</p> <p>60–65 Mental calculation strategies (\times and \div)</p> <p>61 Use doubling or halving, starting from known facts. For example: double/halve any two-digit number by doubling/halving the tens first; double one number and halve the other; to multiply by 25, multiply by 100 then divide by 4; find the $\times 16$ table facts by doubling the $\times 8$ table;</p> <p>61 Use factors (e.g. $8 \times 12 = 8 \times 4 \times 3$).</p> <p>63 Use closely related facts (e.g. multiply by 19 or 21 by multiplying by 20 and adjusting; develop the $\times 12$ table from the $\times 10$ and $\times 2$ tables).</p> <p>63 Partition (e.g. $47 \times 6 = (40 \times 6) + (7 \times 6)$).</p> <p>63 Use the relationship between multiplication and division.</p> <p>65 Use known facts and place value to multiply and divide mentally.</p> <p>66–69 Pencil and paper procedures (\times and \div)</p> <p>67 Approximate first. Use informal pencil and paper methods to support, record or explain multiplications.</p> <p>Extend written methods to: short multiplication of HTU or TU by U; long multiplication of TU by TU;</p>	<p>Multiplication Objectives (excluding rapid recall)</p> <p><u>Calculations</u> 52–57 Understanding multiplication and division 53, 55 Understand and use the relationships between the four operations, and the principles (not the names) of the arithmetic laws. Use brackets.</p> <p>60–65 Mental calculation strategies (\times and \div)</p> <p>61 Use related facts and doubling or halving. For example: double or halve the most significant digit first; to multiply by 25, multiply by 100 then divide by 4; double one number and halve the other; find the $\times 24$ table by doubling the $\times 6$ table twice.</p> <p>61 Use factors (e.g. $35 \times 18 = 35 \times 6 \times 3$).</p> <p>63 Use closely related facts: for example, multiply by 49 or 51 by multiplying by 50 and adjusting. Develop the $\times 17$ table by adding facts from the $\times 10$ and $\times 7$ tables.</p> <p>63 Partition (e.g. $87 \times 6 = (80 \times 6) + (7 \times 6)$)</p> <p>63 Use the relationship between \times and \div.</p> <p>65 Use known number facts and place value to consolidate mental multiplication and division.</p> <p>66–69 Pencil and paper procedures (\times and \div)</p> <p>67 Approximate first. Use informal pencil and paper methods to support, record or explain multiplications.</p> <p>Extend written methods to: multiplication of ThHTU by U (short multiplication); short multiplication of a three-digit by a two-digit integer;</p>
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MUST Targets for Multiplication

Year 1

Year 2

Year 3

I can use and begin to read the related vocabulary.
I can use the \times , \div and $=$ signs to record mental calculations in a number sentence.
I can recognise the use of a symbol such as \square or \triangle to stand for an unknown number.
I know and use halving as the inverse of doubling.
I use known number facts and place value to carry out mentally simple multiplications.

I can use and begin to read the related vocabulary.
I can use the \times , \div and $=$ signs to record mental calculations in a number sentence.
I can recognise the use of a symbol such as \square or \triangle to stand for an unknown number.
I know and use halving as the inverse of doubling.
I use known number facts and place value to carry out mentally simple multiplications.

I can use and begin to read the related vocabulary.
I can use the \times , \div and $=$ signs to record mental calculations in a number sentence.
I can recognise the use of a symbol such as \square or \triangle to stand for an unknown number.
I know and use halving as the inverse of doubling.
I use known number facts and place value to carry out mentally simple multiplications.

SHOULD Targets for Multiplication

Year 1

Year 2

Year 3

I can use and begin to read the related vocabulary.
I can use the \times , \div and $=$ signs to record mental calculations in a number sentence.
I can recognise the use of a symbol such as \square or \triangle to stand for an unknown number.
I know and use halving as the inverse of doubling.
I use known number facts and place value to carry out mentally simple multiplications.

I can use and begin to read the related vocabulary.
I can use the \times , \div and $=$ signs to record mental calculations in a number sentence.
I can recognise the use of a symbol such as \square or \triangle to stand for an unknown number.
I know and use halving as the inverse of doubling.
I use known number facts and place value to carry out mentally simple multiplications.

I know that multiplication can be done in any order.
I recognise that division is the inverse of multiplication, and that halving is the inverse of doubling.
I know that to multiply by 10/100, I shift the digits one/two places to the left.
I can use doubling or halving, starting from known facts (e.g. 8×4 is double 4×4).
I can say or write a division statement corresponding to a given multiplication statement.
I can use known number facts and place value to carry out mentally simple multiplications.

COULD Targets for Multiplication

Year 1

Year 2

Year 3

I can use and begin to read the related vocabulary.
I can use the \times , \div and $=$ signs to record mental calculations in a number sentence.
I can recognise the use of a symbol such as \square or \triangle to stand for an unknown number.
I know and use halving as the inverse of doubling.
I use known number facts and place value to carry out mentally simple multiplications.

I can read and begin to write the related vocabulary.
I know that multiplication can be done in any order.
I recognise that division is the inverse of multiplication, and that halving is the inverse of doubling.
I know that to multiply by 10/100, I shift the digits one/two places to the left.
I can use doubling or halving, starting from known facts (e.g. 8×4 is double 4×4).
I can say or write a division statement corresponding to a given multiplication statement.
I can use known number facts and place value to carry out mentally simple multiplications.

I can use doubling or halving, starting from known facts.
For example: double/halve two-digit numbers by doubling/halving the tens first;
I can multiply by 4, by doubling, then double again;
I can multiply by 5, by multiplying by 10 then halving;
I can find the 8 times-table facts by doubling the 4 times-table;
I can use closely related facts (e.g. to multiply by 9 or 11, multiply by 10 and adjust;
I can develop the $\times 6$ table from the $\times 4$ and $\times 2$ tables).
I can partition numbers to complete multiplication questions. (e.g. $23 \times 4 = (20 \times 4) + (3 \times 4)$).
I can use the relationship between \times and \div to solve calculations.
I can use known number facts and place value to multiply and divide integers, including by 10 and then 100 (whole-number answers).

MUST Targets for Multiplication

Year 4

I can read and begin to write the related vocabulary.
 I know that multiplication can be done in any order.
 I recognise that division is the inverse of multiplication, and that halving is the inverse of doubling.
 I know that to multiply by 10/100, I shift the digits one/two places to the left.
 I can use doubling or halving, starting from known facts (e.g. 8×4 is double 4×4).
 I can say or write a division statement corresponding to a given multiplication statement.
 I can use known number facts and place value to carry out mentally simple multiplications.

Year 5

I can use doubling or halving, starting from known facts. For example: double/halve two-digit numbers by doubling/halving the tens first;
 I can multiply by 4, by doubling, then double again;
 I can multiply by 5, by multiplying by 10 then halving;
 I can find the 8 times-table facts by doubling the 4 times-table;
 I can use closely related facts (e.g. to multiply by 9 or 11, multiply by 10 and adjust;
 I can develop the x6 table from the x4 and x2 tables).
 I can partition numbers to complete multiplication questions. (e.g. $23 \times 4 = (20 \times 4) + (3 \times 4)$).
 I can use the relationship between x and \div to solve calculations.
 I can use known number facts and place value to multiply and divide integers, including by 10 and then 100 (whole-number answers).

Year 6

I can use doubling or halving, starting from known facts. For example: double/halve two-digit numbers by doubling/halving the tens first;
 I can multiply by 4, by doubling, then double again;
 I can multiply by 5, by multiplying by 10 then halving;
 I can find the 8 times-table facts by doubling the 4 times-table;
 I can use closely related facts (e.g. to multiply by 9 or 11, multiply by 10 and adjust;
 I can develop the x6 table from the x4 and x2 tables).
 I can partition numbers to complete multiplication questions. (e.g. $23 \times 4 = (20 \times 4) + (3 \times 4)$).
 I can use the relationship between x and \div to solve calculations.
 I can use known number facts and place value to multiply and divide integers, including by 10 and then 100 (whole-number answers).

SHOULD Targets for Multiplication

Year 4

I can use doubling or halving, starting from known facts. For example: double/halve two-digit numbers by doubling/halving the tens first;
 I can multiply by 4, by doubling, then double again;
 I can multiply by 5, by multiplying by 10 then halving;
 I can find the 8 times-table facts by doubling the 4 times-table;
 I can use closely related facts (e.g. to multiply by 9 or 11, multiply by 10 and adjust;
 I can develop the x6 table from the x4 and x2 tables).
 I can partition numbers to complete multiplication questions. (e.g. $23 \times 4 = (20 \times 4) + (3 \times 4)$).
 I can use the relationship between x and \div to solve calculations.
 I can use known number facts and place value to multiply and divide integers, including by 10 and then 100 (whole-number answers).

Year 5

I can use doubling or halving, starting from known facts. For example: double/halve any two-digit number by doubling/halving the tens first; double one number and halve the other;
 I can multiply by 25, by multiplying by 100 then dividing by 4;
 I can find the x16 table facts by doubling the x8 table; .
 I can use factors to help me solve multiplication calculations. (e.g. $8 \times 12 = 8 \times 4 \times 3$).
 I can use closely related facts (e.g. multiply by 19 or 21 by multiplying by 20 and adjusting;
 I can develop the x12 table from the x10 and x2 tables).
 I can Partition numbers to help me work out multiplication calculations. (e.g. $47 \times 6 = (40 \times 6) + (7 \times 6)$).
 I can use the relationship between multiplication and division to help me solve multiplication calculations.
 I can use known facts and place value to multiply and divide mentally.

Year 6

I can use related facts and doubling or halving. For example: double or halve the most significant digit first;
 I can multiply by 25, by multiplying by 100 and then dividing by 4;
 I can double one number and halve the other;
 I can find the x24 table by doubling the x6 table twice.
 I can use factors to help me solve multiplication calculations (e.g. $35 \times 18 = 35 \times 6 \times 3$).
 I can use closely related facts: for example, multiply by 49 or 51 by multiplying by 50 and adjusting.
 I can develop the x 17 table by adding facts from the x 10 and x 7 tables.
 I can partition a number to help me solve multiplication calculations. (e.g. $87 \times 6 = (80 \times 6) + (7 \times 6)$)
 I can use the relationship between x and \div to help me solve multiplication calculations.
 I can use known number facts and place value to consolidate mental multiplication and division.
 I can use approximation to help me estimate a multiplication answer

COULD Targets for Multiplication

Year 4

I can use doubling or halving, starting from known facts. For example: double/halve any two-digit number by doubling/halving the tens first; double one number and halve the other;

I can multiply by 25, by multiplying by 100 then dividing by 4;

I can find the x16 table facts by doubling the x8 table; .

I can use factors to help me solve multiplication calculations. (e.g. $8 \times 12 = 8 \times 4 \times 3$).

I can use closely related facts (e.g. multiply by 19 or 21 by multiplying by 20 and adjusting;

I can develop the x12 table from the x10 and x2 tables).

I can Partition numbers to help me work out multiplication calculations. (e.g. $47 \times 6 = (40 \times 6) + (7 \times 6)$).

I can use the relationship between multiplication and division to help me solve multiplication calculations.

I can use known facts and place value to multiply and divide mentally.

Year 5

I can use related facts and doubling or halving. For example: double or halve the most significant digit first;

I can multiply by 25, by multiplying by 100 and then dividing by 4;

I can double one number and halve the other;

I can find the x24 table by doubling the x6 table twice.

I can use factors to help me solve multiplication calculations (e.g. $35 \times 18 = 35 \times 6 \times 3$).

I can use closely related facts: for example, multiply by 49 or 51 by multiplying by 50 and adjusting.

I can develop the x 17 table by adding facts from the x 10 and x 7 tables.

I can partition a number to help me solve multiplication calculations. (e.g. $87 \times 6 = (80 \times 6) + (7 \times 6)$)

I can use the relationship between \times and \div to help me solve multiplication calculations.

I can use known number facts and place value to consolidate mental multiplication and division.

I can use approximation to help me estimate a multiplication answer.

I can use informal pencil and paper methods to support, record or explain multiplications.

I can extend written methods to: multiplication of ThHTU by U (short multiplication);

I can use short multiplication of numbers involving decimals; I can use long multiplication of a three-digit by a two-digit integer to solve a multiplication calculation.

Year 6

I can use formal pencil and paper methods to support record or explain multiplications.

I can extend written methods to: multiplication of ThHTU by TU (long multiplication);

I can use long multiplication of numbers involving decimals.

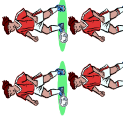
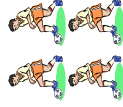
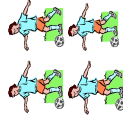
I can use long multiplication of a three-digit by a three -digit integer to solve a multiplication calculation

Division

Level 1

Pictures / marks

12 children get into teams of 4 to play a game.
How many teams are there?



Level 2

÷ = signs and missing numbers

$$6 \div 2 = \quad \quad \quad = 6 \div 2$$

$$6 \div \quad = 3 \quad \quad \quad 3 = 6 \div \quad$$

$$\div 2 = 3 \quad \quad \quad 3 = \div 2$$

$$\div \vee = 3 \quad \quad \quad 3 = \div \vee$$

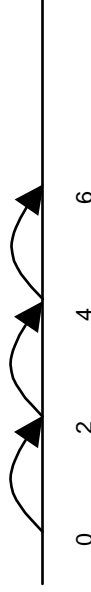
Understand division as sharing and grouping

Sharing – 6 sweets are shared between 2 people. How many do they have each?



6 ÷ 2 can be modelled as:

Grouping – There are 6 sweets. How many people can have 2 each? (How many 2's make 6?)



Level 3

÷ = signs and missing numbers

Continue using a range of equations as in Level 2 but with appropriate numbers.

Understand division as sharing and grouping

18 ÷ 3 can be modelled as:
Sharing – 18 shared between 3 (see Level 2 diagram)

Grouping - How many 3's make 18?



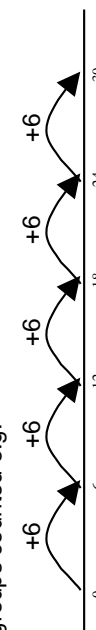
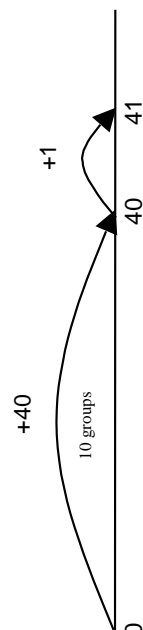

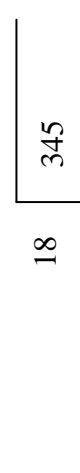
Remainders

$$16 \div 3 = 5 \text{ r}1$$

Sharing - 16 shared between 3, how many left over?

Grouping – How many 3's make 16, how many left over? e.g.



Division		
Level 3 secure	Level 4	Level 5
<p><u>÷ = signs and missing numbers</u></p> <p>Recall methods from year 3</p> <p>Sharing and grouping $30 \div 6$ can be modelled as: grouping – groups of 6 taken away and the number of groups counted e.g.</p>  <p>sharing – sharing among 6, the number given to each person</p> <p>$41 \div 4 = 10 \text{ r}1$</p>  <p>OR $41 = (10 \times 4) + 1$</p>	<p><u>÷ = signs and missing numbers</u></p> <p>Recall methods from year 4</p> <p>Remainders Quotients expressed as fractions or decimal fractions $61 \div 4 = 15 \frac{1}{4}$ or 15.25</p> <p><u>Pencil and paper procedures</u></p> <p>Use formal method for division</p> 	<p><u>÷ = signs and missing numbers</u></p> <p>Remainders Quotients expressed as fractions or decimal fractions $676 \div 8 = 84.5$</p> <p><u>Pencil and paper procedures</u> $977 \div 36$ is approximately $1000 \div 40 = 25$</p> <p>Use formal method for division</p> 

**Division
Year 2**

Year 1

Year 3

<p>Division Objectives (excluding rapid recall)</p> <p><u>Calculations</u> <u>46–51 Understanding multiplication and division</u></p> <p>49 Begin to understand division as grouping (repeated subtraction) or sharing. Use and begin to read the related vocabulary. Use the \times, \div and $=$ signs to record mental calculations in a number sentence, and recognise the use of a symbol such as \square or \triangle to stand for an unknown number.</p> <p>47, 49 Know and use halving as the inverse of doubling.</p> <p><u>54–57 Mental calculation strategies (x and \div)</u></p> <p>57 Use known number facts and place value to carry out mentally simple divisions.</p>	<p>Division Objectives (excluding rapid recall)</p> <p><u>Calculations</u> <u>46–51 Understanding multiplication and division</u></p> <p>49 Understand division as grouping (repeated subtraction) or sharing. Read and begin to write the related vocabulary.</p> <p>Recognise that division is the inverse of multiplication, and that halving is the inverse of doubling.</p> <p>51 Begin to find remainders after simple division.</p> <p>51 Round up or down after division, depending on the context.</p> <p><u>54–57 Mental calculation strategies (x and \div)</u></p> <p>55 Use doubling or halving, starting from known facts (e.g. 8×4 is double 4×4).</p> <p>55 Say or write a division statement corresponding to a given multiplication statement.</p> <p>57 Use known number facts and place value to carry out mentally simple divisions.</p>	<p>Division Objectives (excluding rapid recall)</p> <p><u>Calculations</u> <u>46–51 Understanding multiplication and division</u></p> <p>49 Understand division as grouping (repeated subtraction) or sharing. Read and begin to write the related vocabulary.</p> <p>Recognise that division is the inverse of multiplication, and that halving is the inverse of doubling.</p> <p>51 Begin to find remainders after simple division.</p> <p>51 Round up or down after division, depending on the context.</p> <p><u>54–57 Mental calculation strategies (x and \div)</u></p> <p>55 Use doubling or halving, starting from known facts (e.g. 8×4 is double 4×4).</p> <p>55 Say or write a division statement corresponding to a given multiplication statement.</p> <p>57 Use known number facts and place value to carry out mentally simple divisions.</p>
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Division Year 5

Year 6

<p>Division Objectives (excluding rapid recall)</p> <p>Calculations 52–57 Understanding multiplication and division 52, 54 Extend understanding of the operations of \times and \div, and their relationship to each other and to $+$ and $-$. 56 Find remainders after division. Divide a whole number of pounds by 2, 4, 5 or 10 to give $\pounds.p.$ Round up or down after division, depending on the context.</p> <p>60–65 Mental calculation strategies (\times and \div)</p> <p>60 Use doubling or halving, starting from known facts. For example: double/halve two-digit numbers by doubling/halving the tens first; to multiply by 5, multiply by 10 then halve; find quarters by halving halves. 62 Use the relationship between multiplication and division. 64 Use known number facts and place value to multiply and divide integers, including by 10 and then 100 (whole-number answers). 66–69 Pencil and paper procedures (\times and \div) 68 Approximate first. Use informal pencil and paper methods to support, record or explain divisions. Develop and refine written methods for $TU \div U$.</p>	<p>Division Objectives (excluding rapid recall)</p> <p>Calculations 52–57 Understanding multiplication and division 53, 55 Understand the effect of and relationships between the four operations. Begin to use brackets. 57 Begin to express a quotient as a fraction, or as a decimal when dividing a whole number by 2, 4, 5 or 10, or when dividing $\pounds.p.$ Round up or down after division, depending on the context.</p> <p>60–65 Mental calculation strategies (\times and \div)</p> <p>61 Use doubling or halving, starting from known facts. For example: double/halve any two-digit number by doubling/halving the tens first; double one number and halve the other; to multiply by 25, multiply by 100 then divide by 4; find sixths by halving thirds. 63 Use the relationship between multiplication and division. 65 Use known facts and place value to multiply and divide mentally. 66–69 Pencil and paper procedures (\times and \div) 69 Approximate first. Use informal pencil and paper methods to support, record or explain divisions. Extend written methods to: short division of HTU by U (with integer remainder).</p>	<p>Division Objectives (excluding rapid recall)</p> <p>Calculations 52–57 Understanding multiplication and division 53, 55 Understand and use the relationships between the four operations. Use brackets. 57 Express a quotient as a fraction or as a decimal rounded to one decimal place. Divide $\pounds.p$ by a two-digit number to give $\pounds.p.$ Round up or down after division, depending on the context.</p> <p>60–65 Mental calculation strategies (\times and \div)</p> <p>61 Use related facts and doubling or halving. For example: double or halve the most significant digit first; to multiply by 25, multiply by 100 then divide by 4; double one number and halve the other. 63 Use the relationship between multiplication and division. 65 Use known number facts and place value to consolidate mental multiplication and division. 66–69 Pencil and paper procedures (\times and \div) 69 Approximate first. Use informal pencil and paper methods to support, record or explain divisions. Extend written methods to: short division of TU or HTU by U (mixed-number answer); division of HTU by TU (long division, whole-number answer); short division of numbers involving decimals.</p>
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MUST Targets for Division	
Year 1	Year 3
<p>I can recognise the relationship between sharing equally and division when using the vocabulary 'divide by' and 'share equally'</p> <p>I am beginning to understand division as repeated subtraction or grouping</p> <p>I can recognise the relationship between multiplication and division.</p>	<p>I can recognise the relationship between sharing equally and division when using the vocabulary 'divide by' and 'share equally'</p> <p>I am beginning to understand division as repeated subtraction or grouping</p> <p>I can recognise the relationship between multiplication and division.</p>
<p>I can use and begin to read the related vocabulary.</p> <p>I can use the \times, \div and $=$ signs to record mental calculations in a number sentence,</p> <p>I can recognise the use of a symbol such as \square or \triangle to stand for an unknown number.</p> <p>I know and can use halving as the inverse of doubling.</p> <p>I can use known number facts and place value to carry out mentally simple divisions.</p>	<p>I can use and begin to read the related vocabulary.</p> <p>I can use the \times, \div and $=$ signs to record mental calculations in a number sentence,</p> <p>I can recognise the use of a symbol such as \square or \triangle to stand for an unknown number.</p> <p>I know and can use halving as the inverse of doubling.</p> <p>I can use known number facts and place value to carry out mentally simple divisions.</p>

SHOULD Targets for Division	
Year 1	Year 3
<p>I can recognise the relationship between sharing equally and division when using the vocabulary 'divide by' and 'share equally'</p> <p>I am beginning to understand division as repeated subtraction or grouping</p> <p>I can recognise the relationship between multiplication and division.</p>	<p>I can read and begin to write the related vocabulary.</p> <p>I can recognise that division is the inverse of multiplication, and halving is the inverse of doubling.</p> <p>I can begin to find remainders after simple division.</p> <p>I can round up or down after division, depending on the context.</p> <p>I can use doubling or halving, starting from known facts (e.g. 8×4 is double 4×4).</p> <p>I can say or write a division statement corresponding to a given multiplication statement.</p> <p>I can use known number facts and place value to carry out mentally simple divisions.</p>
<p>I can use and begin to read the related vocabulary.</p> <p>I can use the \times, \div and $=$ signs to record mental calculations in a number sentence,</p> <p>I can recognise the use of a symbol such as \square or \triangle to stand for an unknown number.</p> <p>I know and can use halving as the inverse of doubling.</p> <p>I can use known number facts and place value to carry out mentally simple divisions.</p>	<p>I can read and begin to write the related vocabulary.</p> <p>I can recognise that division is the inverse of multiplication, and halving is the inverse of doubling.</p> <p>I can begin to find remainders after simple division.</p> <p>I can round up or down after division, depending on the context.</p> <p>I can use doubling or halving, starting from known facts (e.g. 8×4 is double 4×4).</p> <p>I can say or write a division statement corresponding to a given multiplication statement.</p> <p>I can use known number facts and place value to carry out mentally simple divisions.</p>

COULD Targets for Division	
Year 1	Year 3
<p>I can use and begin to read the related vocabulary.</p> <p>I can use the \times, \div and $=$ signs to record mental calculations in a number sentence,</p> <p>I can recognise the use of a symbol such as \square or \triangle to stand for an unknown number.</p> <p>I know and can use halving as the inverse of doubling.</p> <p>I can use known number facts and place value to carry out mentally simple divisions.</p>	<p>I can find remainders after division.</p> <p>I can divide a whole number of pounds by 2, 4, 5 or 10 to give \pounds, p.</p> <p>I can round up or down after division, depending on the context.</p> <p>I can use doubling or halving, starting from known facts.</p> <p>For example: double/halve two-digit numbers by doubling/halving the tens first;</p> <p>I can multiply by 5, by multiplying by 10 then halving;</p> <p>I can find quarters by halving halves.</p> <p>I can use the relationship between multiplication and division to help me solve division calculations.</p> <p>I can use known number facts and place value to multiply and divide integers, including by 10 and then 100 (whole-number answers).</p>
<p>I can read and begin to write the related vocabulary.</p> <p>I can recognise that division is the inverse of multiplication, and that halving is the inverse of doubling.</p> <p>I can begin to find remainders after simple division.</p> <p>I can round up or down after division, depending on the context.</p> <p>I can use doubling or halving, starting from known facts (e.g. 8×4 is double 4×4).</p> <p>I can say or write a division statement corresponding to a given multiplication statement.</p> <p>I can use known number facts and place value to carry out mentally simple divisions.</p>	<p>I can read and begin to write the related vocabulary.</p> <p>I can recognise that division is the inverse of multiplication, and that halving is the inverse of doubling.</p> <p>I can begin to find remainders after simple division.</p> <p>I can round up or down after division, depending on the context.</p> <p>I can use doubling or halving, starting from known facts (e.g. 8×4 is double 4×4).</p> <p>I can say or write a division statement corresponding to a given multiplication statement.</p> <p>I can use known number facts and place value to carry out mentally simple divisions.</p>
<p>I can use and begin to read the related vocabulary.</p> <p>I can use the \times, \div and $=$ signs to record mental calculations in a number sentence,</p> <p>I can recognise the use of a symbol such as \square or \triangle to stand for an unknown number.</p> <p>I know and can use halving as the inverse of doubling.</p> <p>I can use known number facts and place value to carry out mentally simple divisions.</p>	<p>I can find remainders after division.</p> <p>I can divide a whole number of pounds by 2, 4, 5 or 10 to give \pounds, p.</p> <p>I can round up or down after division, depending on the context.</p> <p>I can use doubling or halving, starting from known facts.</p> <p>For example: double/halve two-digit numbers by doubling/halving the tens first;</p> <p>I can multiply by 5, by multiplying by 10 then halving;</p> <p>I can find quarters by halving halves.</p> <p>I can use the relationship between multiplication and division to help me solve division calculations.</p> <p>I can use known number facts and place value to multiply and divide integers, including by 10 and then 100 (whole-number answers).</p>

MUST Targets for Division

Year 4

I can read and begin to write the related vocabulary.
 I can recognise that division is the inverse of multiplication, and that halving is the inverse of doubling.
 I can begin to find remainders after simple division.
 I can round up or down after division, depending on the context.
 I can use doubling or halving, starting from known facts (e.g. 8×4 is double 4×4).
 I can say or write a division statement corresponding to a given multiplication statement.
 I can use known number facts and place value to carry out mentally simple divisions.

Year 5

I can find remainders after division.
 I can divide a whole number of pounds by 2, 4, 5 or 10 to give £.p.
 I can round up or down after division, depending on the context.
 I can use doubling or halving, starting from known facts.
 For example: double/halve two-digit numbers by doubling/halving the tens first;
 I can multiply by 5, by multiplying by 10 then halving;
 I can find quarters by halving halves.
 I can use the relationship between multiplication and division to help me solve division calculations.
 I can use known number facts and place value to multiply and divide integers, including by 10 and then 100 (whole-number answers).

Year 6

I can begin to use brackets to help me solve division calculations.
 I can begin to express a quotient as a fraction, or as a decimal when dividing a whole number by 2, 4, 5 or 10, or when dividing £.p.
 I can round up or down after division, depending on the context.
 I can use doubling or halving, starting from known facts.
 For example: double/halve any two-digit number by doubling/halving the tens first; double one number and halve the other;
 I can multiply by 25, by multiplying by 100 then dividing by 4;
 I can find sixths by halving thirds.
 I can use the relationship between multiplication and Division to help me solve division calculations.
 I can use known facts and place value to multiply and divide mentally.

SHOULD Targets for Division

Year 4

I can find remainders after division.
 I can divide a whole number of pounds by 2, 4, 5 or 10 to give £.p.
 I can round up or down after division, depending on the context.
 I can use doubling or halving, starting from known facts.
 For example: double/halve two-digit numbers by doubling/halving the tens first;
 I can multiply by 5, by multiplying by 10 then halving;
 I can find quarters by halving halves.
 I can use the relationship between multiplication and division to help me solve division calculations.
 I can use known number facts and place value to multiply and divide integers, including by 10 and then 100 (whole-number answers).

Year 5

I can begin to use brackets to help me solve division calculations.
 I can begin to express a quotient as a fraction, or as a decimal when dividing a whole number by 2, 4, 5 or 10, or when dividing £.p.
 I can round up or down after division, depending on the context.
 I can use doubling or halving, starting from known facts.
 For example: double/halve any two-digit number by doubling/halving the tens first; double one number and halve the other;
 I can multiply by 25, by multiplying by 100 then dividing by 4;
 I can find sixths by halving thirds.
 I can use the relationship between multiplication and Division to help me solve division calculations.
 I can use known facts and place value to multiply and divide mentally.

Year 6

I can express a quotient as a fraction or as a decimal rounded to 1dp.
 I can divide £.p by a two-digit number to give £.p.
 I can round up or down after division, depending on the context.
 I can use related facts and doubling or halving.
 I can multiply by 25, by timesing by 100 then divide by 4;
 I can double one number and halve the other.
 I can use the relationship between multiplication and division to help me solve division calculations.
 I can use known number facts and place value to consolidate mental multiplication and division.
 I can use approximation first when solving division calculations.
 I can use informal pencil and paper methods to support record or explain divisions.
 I can use written methods of short division to solve division calculations of TU or HTU by U (mixed-number answer);
 I can use long division to solve division calculations of HTU by TU (long division, whole-number answer);
 I can use short division of numbers involving decimals.

COULD Targets for Division		
Year 4	Year 5	Year 6
<p>I can begin to use brackets to help me solve division calculations.</p> <p>I can begin to express a quotient as a fraction, or as a decimal when dividing a whole number by 2, 4, 5 or 10, or when dividing £.p.</p> <p>I can round up or down after division, depending on the context.</p> <p>I can use doubling or halving, starting from known facts. For example: double/halve any two-digit number by doubling/halving the tens first; double one number and halve the other;</p> <p>I can multiply by 25, by multiplying by 100 then dividing by 4;</p> <p>I can find sixths by halving thirds.</p> <p>I can use the relationship between multiplication and Division to help me solve division calculations.</p> <p>I can use known facts and place value to multiply and divide mentally.</p>	<p>I can express a quotient as a fraction or as a decimal rounded to one decimal place.</p> <p>I can divide £.p by a two-digit number to give £.p.</p> <p>I can round up or down after division, depending on the context.</p> <p>I can use related facts and doubling or halving. For example: double or halve the most significant digit first;</p> <p>I can multiply by 25, by multiplying by 100 then dividing by 4;</p> <p>I can double one number and halve the other.</p> <p>I can use the relationship between multiplication and division to help me solve division calculations.</p> <p>I can use known number facts and place value to consolidate mental multiplication and division.</p> <p>I can use approximation first when solving division calculations.</p> <p>I can use informal pencil and paper methods to support record or explain divisions.</p> <p>I can use written methods of short division to solve division calculations of TU or HTU by U (mixed-number answer);</p> <p>I can use long division to solve division calculations of HTU by TU (long division, whole-number answer);</p> <p>I can use short division of numbers involving decimals.</p>	<p>I can use formal pencil and paper methods to support record or explain divisions.</p> <p>I can use written methods of long division to solve division calculations of TU or HTU by TU (mixed-number answer);</p> <p>I can use long division to solve division calculations of HTU by HTU (long division, whole-number answer);</p> <p>I can use long division of numbers involving decimals.</p>