



Year One

| ADDITION | SUBTRACTION | MULTIPLICATION | DIVISION |
|---|--|---|---|
| <p>+ = signs are used and shapes are used to represent missing numbers</p> <p>Promoting covering up of operations and numbers.</p> <p>Numberlines - (numbered)</p> <p style="text-align: center;">$7 + 4$</p> <p>(NOTE: counting on/+ is always done above the line)</p> <p>Record by drawing jumps on prepared numberlines, progressing onto children constructing their own lines</p> <p>Teachers model use of numberlines for finding missing numbers</p> <p>Teachers model jottings/recording for larger numbers</p> | <p>Using pictures or marks</p> <p>Sam spent 4p. How much change did he get from 10p?</p> <p>- = signs are used and shapes are used to represent missing numbers</p> <p>Numberlines - (numbered)</p> <p style="text-align: center;">$11 - 7$</p> <p>(NOTE: counting back is always done underneath the line)</p> <p>Find the difference between 7 and 11 ('Counting up' - this is done ABOVE the line)</p> <p>Record by drawing jumps on prepared numberlines, progressing onto children constructing their own lines</p> <p>Teachers model jottings/recording for larger numbers</p> | <p>Pictures and symbols</p> <p>There are 3 sweets in one bag. How many sweets are there in 5 bags?</p> <p>Recording on a numberline showing repeated addition (modeled by teacher)</p> <p style="text-align: center;">i.e.</p> <p style="text-align: center;">$2 + 2 + 2 + 2$</p> <p>Use of bead strings to model 'groups of'</p> | <p>Using pictures or marks</p> <p>12 children get into teams of 4 to play a game. How many teams are there?</p> <p>Division as 'sharing' i.e. share 6 sweets between 2 people. How many sweets do they each get?</p> |



Year Two

ADDITION

+ = signs are used and shapes are used to represent missing numbers
Continue using a range of equations as in Y1 but with appropriate larger numbers.

Extend to 'balancing sums'

$$14 + \square = 10 +$$

and adding three numbers

Partition into tens and ones and recombine

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

Refine to partitioning the second number only

Add 9 or 11 by adding 10 and adjusting by 1

$$35 + 9 = 44$$

NOTE that only significant numbers are now marked on the numberline.

SUBTRACTION

- = signs are used and shapes are used to represent missing numbers

Continue using a range of equations as in Y1 but with appropriate numbers.

$$\text{Extend to } 14 \square 5 = 20 -$$

Find a small difference by counting up

$$42 - 39 = 3$$

Subtract 9 or 11

Begin to add/subtract 19 or 21

$$35 - 9 = 26$$

NOTE: remember to model subtraction under the numberline

Use known number facts and place value to subtract (partition second number only)

MULTIPLICATION

x = signs are used and shapes are used to represent missing numbers

Arrays and repeated addition

repeated addition on a numberline i.e.

$$2 + 2 + 2 + 2$$

NOTE - This can be used to help derive and develop recall of multiplication facts for the 2, 5 & 10 times tables.

Doubling multiples of 5 up to 50

$$15 \times 2$$

Partition

OR begin to link partitioning to 'grid method'

DIVISION

÷ = signs are used and shapes are used to represent missing numbers

Understand division as 'sharing' and 'grouping'.

Extend simple sharing method of Y1 to include 'remainders' now.

Share 10 sweets between 3 people. How many do they have each?

$$10 \div 3 = 3 \text{ each with } 1 \text{ left over}$$

$$10 \div 3 = 3 \text{ r } 1$$

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

NOTE: Remainders can also be shown on a numberline - see Y3 example.



Year Three

ADDITION

SUBTRACTION

MULTIPLICATION

DIVISION

+ = signs are used and shapes are used to represent missing numbers
Continue using a range of equations as in Y1 & Y2 but with appropriate, larger numbers.

Partition into tens and ones and recombine
Partition both numbers and recombine. Refine to partitioning the second number only.
 $36 + 53 = 53 + 30 + 6$
 $= 83 + 6$
 $= 89$

Add a near multiple of 10 to a two-digit number
Continue as in Y2 but with appropriate numbers
e.g. $35 + 19$ is the same as $35 + 20 - 1$

Add a near multiple of 100 to a three-digit number
e.g. $135 + 99$ is the same as $135 + 100 - 1$

Pencil and paper procedures (two and three digit numbers)

| | |
|-----------------|------------------|
| $83 + 42$ | G & T |
| $80 + 3$ | 83 |
| $+ 40 + 2$ | $+ 42$ |
| $120 + 5 = 125$ | 5 |
| | <u>120</u> |
| | <u>125</u> |

- = signs are used and shapes are used to represent missing numbers
Continue using a range of equations as in Y1 & Y2 but with appropriate, larger numbers.

Find a small difference by counting up
Continue as in Y2 but with appropriate numbers e.g. $102 - 97 = 5$

Subtract mentally a 'near multiple' of 10 from a two digit number
Subtract mentally a 'near multiple' of 100 from a three digit number
Continue as in Y2 but with appropriate numbers e.g.

$78 - 49$ is the same as $78 - 50 + 1$
 $345 - 199$ is the same as $345 - 200 + 1$

Use known number facts and place value to subtract
Continue as in Y2 but with appropriate numbers e.g.
 $97 - 15$
NOTE: subtraction is under the numberline

Partition
 $97 - 15$
 $97 - 10 = 5$
 $87 - 5 = 82$

x = signs are used and shapes are used to represent missing numbers
Continue using a range of equations as in Y1 & Y2 but with appropriate, larger numbers.

Continue to use arrays and repeated addition as needed as in Y2.

Make use of numberlines

3×6

13×3

| | | |
|---|----|----|
| 0 | 30 | 39 |
|---|----|----|

Using known facts to multiply by 10
 3×50
 $= 3 \times 5 \times 10$
 $= 15 \times 10$
 $= 150$

Doubling multiples of 5 up to 50
 $35 \times 2 = 70$

Partition - relate to grid method

| | | | |
|---|----|----|------|
| X | 30 | 5 | = 70 |
| 2 | 60 | 10 | |

Apply this to 2, 3, 4, 5, or 6 times table.

÷ = signs are used and shapes are used to represent missing numbers
Continue using a range of equations as in Y1 & Y2 but with appropriate, larger numbers.

Understand division as sharing and grouping
 $15 \div 3$ can be modeled as:
SHARING - 15 shared between 3 (see Y2 method)

OR

The numberline can also be used to show division as 'repeated subtraction'.
(USE PROBLEMS WITH NO REMAINDERS TO MODEL THIS METHOD)

OR

$18 \div 3$ can be modeled as:
SHARING - using Y2 method

OR How many 3s make 18?

REMAINDERS

$16 \div 3 = 5 \text{ r } 1$
Sharing method - 16 shared between 3, how many each and how many left over?
Grouping - How many 3s are there in 16 with how many left over?

Using a numberline



Year Three (continued)

ADDITION

Pencil and paper procedures continued
(two and three digit numbers)

$$375 + 67$$

$$\begin{array}{r} 300 + 70 + 5 \\ 60 + 7 \\ \hline \end{array}$$

$$300 + 130 + 12 = 442$$

$$246 + 87 = 246 + 80 + 7$$

$$\begin{array}{r} 246 \\ + 80 \\ \hline 326 \\ + 7 \\ \hline 333 \\ \hline \end{array}$$

using knowledge of place value
and beginning to 'carry over'

'carrying over' under the baseline

NUMBERLINES should continue to be
used as a recorded method

SUBTRACTION

Pencil and paper procedures
Complementary addition
 $84 - 56 = 28$

$$84 = 70 + 14$$
$$56 = 50 + 6$$
$$20 + 8 = 28$$

Using knowledge of place value and
partitioning
e.g. $325 - 58$

$$200 + 110 + 15$$
$$- 50 + 8$$
$$\hline 200 + 60 + 7 = 267$$

$$246 - 87 = 246 - 80 - 7$$

$$\begin{array}{r} 246 \\ - 80 \\ \hline 166 \\ - 7 \\ \hline 159 \end{array}$$

beginning to move on to
'borrowing' or subtracting in
multiples of ten

$$231 - 189$$

$$\begin{array}{r} 231 \\ - 189 \\ \hline 11 \end{array}$$

→ 200

$$\begin{array}{r} + 31 \\ \hline 42 \end{array}$$

MULTIPLICATION

Use known facts and place value to carry
out simple multiplications.
Use the grid method for this:

| | | |
|---|-----|----|
| X | 40 | 3 |
| 4 | 160 | 12 |

= 172

DIVISION

Partition
 $96 \div 3 = 32$

| | | |
|---|----|---|
| ÷ | 90 | 6 |
| 3 | 30 | 2 |

= 32



Year Four

ADDITION

+ = signs and missing numbers

Continue to use a range of equations as in previous year groups, but with appropriate numbers

Continue to partition into tens and ones and recombine

Either partition both numbers and recombine or more appropriately now, partition the second number only

$$\begin{aligned}
 55 + 37 &= 55 + 30 + 7 \\
 &= 85 + 7 \\
 &= 92
 \end{aligned}$$

Add the nearest multiple of 10, 100 or 1000, then adjust

Building upon/extending strategies taught in previous years i.e.

$$\begin{aligned}
 63 + 29 &\text{ is the same as } 63 + 30 - 1 \\
 237 + 299 &\text{ is the same as } 237 + 300 - 1 \\
 1428 + 3999 &\text{ is the same as } 1428 + 4000 - 1
 \end{aligned}$$

Pencil and paper procedures

Using partitioning to support the expanded method of calculation

237 + 185

$$\begin{aligned}
 &200 + 30 + 7 \\
 &+ 100 + 80 + 5 \\
 \hline
 &300 + 110 + 12 = 442
 \end{aligned}$$

OR 237 + 185

$$\begin{array}{r}
 237 \\
 + 185 \\
 \hline
 12 \longrightarrow \text{add units} \\
 110 \longrightarrow \text{add tens} \\
 300 \longrightarrow \text{add hundreds} \\
 \hline
 442
 \end{array}$$

SUBTRACTION

- = signs and missing numbers

Continue to use a range of equations as in previous year groups, but with appropriate numbers

Find a small difference by counting up

e.g. $5003 - 4996 = 7$
(This can be done mentally or modeled on an empty numberline)

ALSO relate this to complementary addition - see below

Subtract the nearest multiple of 10, 100 or 1000 - building on known strategies

Use known number facts and place value to subtract

$$92 - 15 = 77$$

Pencil and paper procedures

Complementary addition

$$754 - 86 = 668$$

Using knowledge of place value and partitioning

$$\begin{aligned}
 &327 - 114 \\
 &300 + 20 + 7 \quad \text{N.B. + signs can be left out} \\
 - &100 + 10 + 4 \quad \text{if they cause confusion} \\
 \hline
 &200 + 10 + 3 = 213
 \end{aligned}$$

MULTIPLICATION

x = signs and missing numbers

Continue to use a range of equations as in previous year groups, but with appropriate numbers

Partition for mental multiplication (using known facts)

$$23 \times 4 = 92$$

$$\begin{aligned}
 23 \times 4 &= (20 \times 4) + (3 \times 4) \\
 &= (80) + (12) \\
 &= 92
 \end{aligned}$$

Pencil and paper procedures

Apply partitioning to the 'grid method'

Using known facts and strategies i.e. multiplying in multiples of 10, 100, etc.,,

72 x 38

| | | |
|----|------|----|
| X | 70 | 2 |
| 30 | 2100 | 60 |
| 8 | 560 | 16 |

Extend to HTU x TU, etc...

Use grid method for approximations too:

23×7 is approximately 20×10 , etc...

For more able or G & T move towards standard methods (TU x U, then HTU x U, etc... e.g. 126×4

$$\begin{array}{r}
 126 \\
 \times 4 \\
 \hline
 24 \text{ (4 x units)} \\
 80 \text{ (4 x tens)} \\
 400 \text{ (4 x hundreds)} \\
 \hline
 504
 \end{array}$$

DIVISION

÷ = signs and missing numbers

Continue to use a range of equations as in previous year groups, but with appropriate numbers

Continue to use numberline calculations for division:

Continue to understand division as sharing and grouping

$30 \div 6$ can be modeled as:
grouping - counting on in groups of 6 until you reach 30 and then counting how many 'groups' you have

Repeated subtraction - done underneath the numberline - see Year 3

Use any methods shown for previous year groups

Remainders

$$41 \div 4 = 10 \text{ r } 1$$

OR

$$41 = (10 \times 4) + 1$$



Year Four (continued)

ADDITION

Pencil and paper procedures continued
Refining standard column method of addition with 'carrying over' indicated below the baseline

$$\begin{array}{r} 326 \\ + 245 \\ \hline 571 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 487 \\ + 345 \\ \hline 832 \\ \hline 11 \end{array}$$

Extend to decimals in the context of money

$$\pounds 2.50 + \pounds 1.75 = \pounds 4.25$$

$$\begin{array}{r} \pounds 2.50 \\ + \pounds 1.75 \\ \hline \pounds 4.25 \\ \hline 1 \end{array}$$

Always refer back to any expanded method for children who are not ready to work with the standard column method.

SUBTRACTION

Pencil and paper procedures continued -
using knowledge of place value and partitioning

$$723 - 458$$

$$\begin{array}{l} 600 + 110 + 13 \\ - 400 + 50 + 8 \\ \hline 200 + 60 + 5 = 265 \end{array}$$

$$574 - 186$$

$$\begin{array}{r} 574 \\ - 186 \\ \hline 374 \longrightarrow 574 \\ \hline 388 \end{array}$$

Moving onto standard column method with 'borrowing'

$$\begin{array}{r} 754 \\ - 228 \\ \hline 526 \end{array}$$

NOTE: *initially borrow only once and then progress to twice, etc...*

MULTIPLICATION

DIVISION

Pencil and paper procedures

Partitioning using known facts from times tables:

$$\begin{aligned} 64 \div 4 &= (40 + 24) \div 4 \\ &= (40 \div 4) + (24 \div 4) \\ &= 10 + 6 = 16 \end{aligned}$$

The above method can also be used to show remainders:

$$\begin{aligned} 96 \div 7 &= (70 + 26) \div 7 \\ &= (70 \div 7) + (26 \div 7) \\ &= 10 + 3 \text{ r } 5 = 13 \text{ r } 5 \end{aligned}$$

Introduce 'chunking' (taking away in chunks of the divisor)

Start with two digit numbers where a chunk of 10 lots of a single digit divisor can be taken off:

$$\begin{array}{r} 64 \div 4 \\ 64 \\ - 40 \text{ (10 'lots of' 4)} \\ \hline 24 \\ 24 \text{ (6 'lots of' 4)} \\ \hline 00 \quad \text{Answer} = 16 \end{array}$$

Progress towards three digit numbers with a single digit divisor for more able or G & T

Use the 'chunking' method for remainders too:

$$\begin{array}{r} 72 \div 5 \\ 72 \\ - 50 \text{ (10 'lots of' 5)} \\ \hline 22 \\ 20 \text{ (4 'lots of' 5)} \\ \hline 2 \end{array}$$

Answer = 14 remainder 2



Year Five

ADDITION

+ = signs and missing numbers

Continue to use a range of equations as in previous year groups, but with appropriate numbers

Partition into hundreds, tens and ones and recombine

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

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

Add the nearest multiple of 10, 100 or 1000, then adjust (as in Y4)

Building upon/extending strategies taught in previous years i.e.

$$\begin{aligned}
 63 + 29 &\text{ is the same as } 63 + 30 - 1 \\
 237 + 299 &\text{ is the same as } 237 + 300 - 1 \\
 1428 + 3999 &\text{ is the same as } 1428 + 4000 - 1
 \end{aligned}$$

Pencil and paper procedures

Continue with partitioning where appropriate:

$$\begin{array}{r}
 1576 + 858 \\
 1500 + 70 + 6 \\
 + 800 + 50 + 8 \\
 \hline
 2300 + 120 + 14 = 2434
 \end{array}$$

SUBTRACTION

- = signs and missing numbers

Continue to use a range of equations as in previous year groups, but with appropriate numbers

Find a difference by counting up

e.g. 8006 - 5013

This can be modeled on an empty numberline (see complementary addition below)

Subtract the nearest multiple of 10, 100 or 1000 then adjust - building on known strategies

Use known number facts and place value to subtract

$$6.1 - 0.4 = 5.7$$

NOTE: model subtraction under the numberline

Pencil and paper procedures

Complementary addition

$$754 - 286 = 468$$

MULTIPLICATION

x = signs and missing numbers

Continue to use a range of equations as in previous year groups, but with appropriate numbers

Partition for mental multiplication

$$47 \times 6 = 282$$

$$\begin{aligned}
 47 \times 6 &= (40 \times 6) + (7 \times 6) \\
 &= (240) + (42) \\
 &= 282
 \end{aligned}$$

OR 47

$$\begin{array}{r}
 \text{X } 6 \\
 42 \quad (6 \times 7) \\
 \hline
 240 \quad (6 \times 40) \\
 282
 \end{array}$$

(multiply units, tens, then hundreds, etc...)

Pencil and paper procedures

Children should by now be consolidating the grid method of multiplication:

TU x U, TU x TU, HTU x u, HTU x TU...

| | | |
|----|------|-----|
| x | 80 | 9 |
| 50 | 4000 | 450 |
| 3 | 240 | 27 |

Use the grid method for making approximations too.

Extend use of the grid methods for decimals - 1dp

| | | | |
|---|----|-----|------|
| X | 7 | 0.9 | |
| 3 | 21 | 2.7 | 23.7 |

DIVISION

÷ = signs and missing numbers

Continue to use a range of equations as in previous year groups, but with appropriate numbers

Continue to understand division as both sharing and grouping (repeated subtraction)

Remainders

Begin to express quotients as fractions or decimal fractions

$$61 \div 4 = 15 \text{ r } 1 \text{ or } 15\frac{1}{4} \text{ or } 15.25$$

Pencil and paper procedures

Consolidation of Year 4

Short division method for division by a single digit

$$\begin{array}{r}
 114 \\
 3 \overline{) 342} \quad \text{'carrying over'}
 \end{array}$$

Apply this method for problems with remainders.



Year Five (continued)

ADDITION

Pencil and paper procedures continued:

NOTE: When using formal/standard column methods, numbers carried should be shown underneath

$$\begin{array}{r} 358 \\ + 73 \\ \hline 431 \\ 11 \end{array}$$

Extend to numbers with at least four Digits

$$2362 - 548$$

$$\begin{array}{r} 2300 + 50 + 12 \\ - 500 + 40 + 8 \\ \hline 1800 + 10 + 4 = 1814 \end{array}$$

Apply this same method to decimals too

$$23.7 + 48.55$$

$$\begin{array}{r} 23.70 \\ + 48.55 \\ \hline 72.25 \\ 11 \end{array}$$

Revert back to any expanded methods for children who may experience difficulties.

Model negative numbers using a numberline.

SUBTRACTION

Pencil and paper procedures continued:

Partitioning using knowledge of place value and number facts

$$2362 - 548$$

$$\begin{array}{r} 2300 + 50 + 12 \\ - 500 + 40 + 8 \\ \hline 1800 + 10 + 4 = 1814 \end{array}$$

Formal/standard column method including decomposition

$$2362 - 548$$

$$\begin{array}{r} 12135612 \\ - 548 \\ \hline 1814 \end{array}$$

Apply this method to decimals too:

$$72.5 - 45.7$$

$$\begin{array}{r} 6711215 \\ - 45.7 \\ \hline 26.8 \end{array}$$

MULTIPLICATION

Pencil and paper procedures continued:

Partitioning (when appropriate)

$$137 \times 9 = 1233$$

$$137 = 100 + 30 + 7$$

$$100 \times 9 = 900$$

$$30 \times 9 = 270$$

$$7 \times 9 = 63$$

Using standard formal column methods for multiplication:

TU x U, TU x TU, HTU x U, etc...

$$\begin{array}{r} 126 \\ \times 14 \\ \hline 504 \quad (4 \times \text{units}) \\ 1260 \quad (4 \times \text{tens}) \\ \hline 1764 \quad (4 \times \text{hundreds}) \\ 1260 \quad (10 \times \text{the number}) \\ \hline 1764 \end{array}$$

$$\begin{array}{r} 126 \\ \times 4 \\ \hline 504 \end{array} \quad \text{carrying numbers underneath}$$

$$\begin{array}{r} 126 \\ \times 14 \\ \hline 504 \end{array} \quad \text{carrying numbers underneath}$$

$$\begin{array}{r} 1260 \\ \hline 1764 \end{array}$$

NOTE: starting with units when multiplying by a 2 digit number

Apply methods to decimals too:

$$\begin{array}{r} 4.7 \\ \times 8 \\ \hline 37.6 \end{array}$$

DIVISION

Pencil and paper procedures continued:

Short division method involving decimals

$$\begin{array}{r} 06.1 \\ 7 \overline{)42.7} \end{array} \quad \text{Zero can be used as a 'place holder'}$$

'CHUNKING'

As in Year 4 using a single digit divisor, progressing to a two-digit divisor

$$247 \div 13 = 19$$

$$\begin{array}{r} 247 \\ - 130 \quad (10 \times 13) \\ \hline 117 \\ - 39 \quad (3 \times 13) \\ \hline 78 \\ - 39 \quad (3 \times 13) \\ \hline 39 \\ - 39 \quad (3 \times 13) \\ \hline 00 \end{array}$$

Answer = 19

The same strategy can be used with remainders too

$$209 \div 12 = 17 \text{ r } 5$$

$$\begin{array}{r} 209 \\ - 120 \quad (10 \times 12) \\ \hline 89 \\ - 60 \quad (5 \times 12) \\ \hline 29 \\ - 24 \quad (2 \times 12) \\ \hline 5 \end{array}$$

Answer = 17 r 5



Year Six

ADDITION

+ = signs and missing numbers
Continue to use a range of equations as in previous year groups, but with appropriate numbers

Partition whole numbers and decimals (up to 3dp) and recombine

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

$$\begin{aligned} 35.8 + 7.3 &= 35.8 + 7 + 0.3 \\ &= 42.8 + 0.3 \\ &= 43.1 \end{aligned}$$

Add the nearest multiple of 10, 100 or 1000, then adjust (as in Y4)

Building upon/extending strategies taught in previous years but with appropriate numbers, extending to include 0.9, 1.9, 2.9, etc...

Pencil and Paper procedures

Consolidation of strategies covered in Years 4 & 5

Standard column method for whole numbers and decimals

$$124.9 + 117.25 = 242.15$$

$$\begin{array}{r} 124.90 \text{ (using a zero as a place holder)} \\ 117.25 \\ \hline 242.15 \\ \hline \end{array}$$

SUBTRACTION

- = signs and missing numbers
Continue to use a range of equations as in previous year groups, but with appropriate numbers

Find a difference by counting up
e.g. $0.5 - 0.31 = 0.19$

This can be carried out on an empty numberline
(see complementary addition below)

Subtract the nearest multiple of 10, 100 or 1000 then adjust - building on known strategies and using appropriate numbers
Use known number facts and place value to subtract - consolidate and extend Year 5 work

Pencil and paper procedures
Complementary addition

Consolidate formal/standard column method including decomposition - as in Y5
'Borrowing across more than one place'

$$\begin{array}{r} 3009 \\ 1425 \\ \hline 1584 \end{array}$$

MULTIPLICATION

x = signs and missing numbers
Continue to use a range of equations as in previous year groups, but with appropriate numbers

Partition for mental or written multiplication

$$87 \times 6 = 522$$

$$\begin{aligned} 87 \times 6 &= (80 \times 6) + (7 \times 6) \\ &= (480) + (42) \\ &= 522 \end{aligned}$$

OR 87

$$\begin{array}{r} \text{X } 6 \\ \hline 42 \text{ (6 x 7)} \\ 480 \text{ (6 x 80)} \\ \hline 522 \\ \hline \end{array}$$

(multiply units, tens, then hundreds, etc...)

Pencil and paper procedures

Use grid method to multiply TU x U, TU x TU, HTU x T, HTU x TU, U x decimals, TU x decimals, etc...

$$437 \times 59 = 25783$$

| | | | |
|----|-------|------|-----|
| X | 400 | 30 | 7 |
| 50 | 20000 | 1500 | 350 |
| 9 | 3600 | 270 | 63 |

$$24.7 \times 8 = 197.6$$

| | | | |
|---|-----|----|-----|
| X | 20 | 4 | 0.7 |
| 8 | 160 | 32 | 5.6 |

Using known facts

Extend to numbers with more than 1dp

DIVISION

÷ = signs and missing numbers
Continue to use a range of equations as in previous year groups, but with appropriate numbers

Continue to understand division as both sharing and grouping (repeated subtraction)

Remainders

Quotients expressed as fractions or decimal fractions

$$676 \div 8 = 84 \text{ r } 4. = 84\frac{1}{2} = 84.5$$

Pencil and paper procedures

Consolidation of 'short division' method for division by a single digit

$$\begin{array}{r} 114 \\ 3 \overline{) 342} \text{ 'carrying over'} \end{array}$$

Apply this method for problems with remainders.



Year Six (continued)

| ADDITION | SUBTRACTION | MULTIPLICATION | DIVISION |
|----------|-------------|--|---|
| | | <p>Pencil and paper procedures continued:</p> <p>Consolidating and extending use of standard formal column methods for multiplication from Year 5 :</p> <p>TU x U, TU x TU, HTU x U, etc...</p> $\begin{array}{r} 126 \\ \times 14 \\ \hline 24 \text{ (4 x units)} \\ 80 \text{ (4 x tens)} \\ 400 \text{ (4 x hundreds)} \\ \hline 1260 \text{ (10 x the number)} \\ \hline 1764 \end{array}$ $\begin{array}{r} 126 \\ \times 4 \\ \hline 504 \end{array}$ <p>carrying numbers underneath</p> $\begin{array}{r} 126 \\ \times 14 \\ \hline 504 \text{ carrying numbers underneath} \\ \hline 1260 \\ \hline 1764 \end{array}$ <p>NOTE: starting with units when multiplying by a 2 digit number</p> <p>Apply methods to decimals with more than 1dp:</p> $\begin{array}{r} 4.73 \\ \times 8 \\ \hline 37.84 \\ \hline 5 \end{array}$ | <p>Pencil and paper procedures continued:</p> <p>Short division method involving decimals £22.35 ÷ 3</p> $\begin{array}{r} \text{£ } 07.45 \\ 3 \overline{) 22.35} \\ \underline{3} \\ 9 \\ \underline{3} \\ 6 \\ \underline{6} \\ 0 \\ \hline \end{array}$ <p>Zero can be used as a 'place holder'</p> <p>3) £ 2 2. 3 5</p> <p>Consolidation of 'CHUNKING' for long division</p> <p>Diving by a two-digit number</p> $247 \div 13 = 19$ $\begin{array}{r} 247 \\ - 130 \text{ (10 x 13)} \\ \hline 117 \\ - 39 \text{ (3 x 13)} \\ \hline 78 \\ - 39 \text{ (3 x 13)} \\ \hline 39 \\ - 39 \text{ (3 x 13)} \\ \hline 00 \end{array}$ <p>Answer = 19</p> <p>The same strategy can be used with remainders too</p> $209 \div 12 = 17 \text{ r } 5$ $\begin{array}{r} 209 \\ - 120 \text{ (10 x 12)} \\ \hline 89 \\ - 60 \text{ (5 x 12)} \\ \hline 29 \\ - 24 \text{ (2 x 12)} \\ \hline 5 \end{array}$ <p>Answer = 17 r 5</p> <p>More able/G&T children may also begin to use 'short method' with a two-digit divisor</p> |