

Key Vocabulary:

divisor

quotient

dividend

remainder

factor

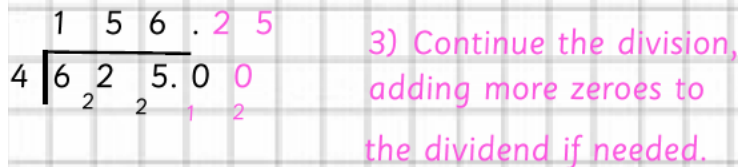
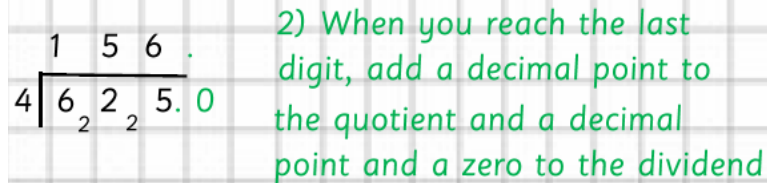
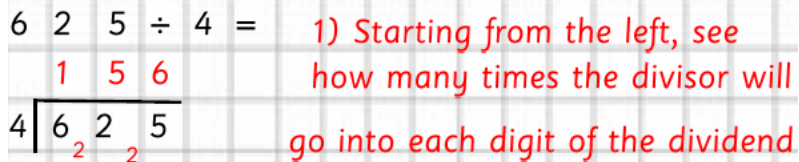
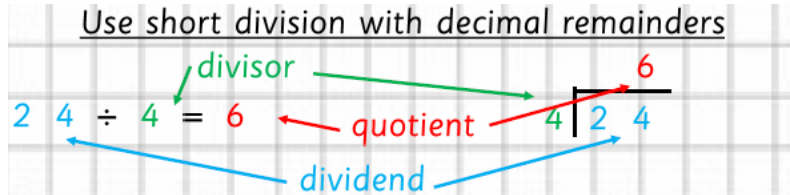
short division

long division

order of operations

SHORT DIVISION WRITTEN METHOD

Key learning: divide numbers up to 4-digits by a 1-digit whole number with decimal remainders



You can check by doing short multiplication.

$156.25 \times 4 = 625$ ✓

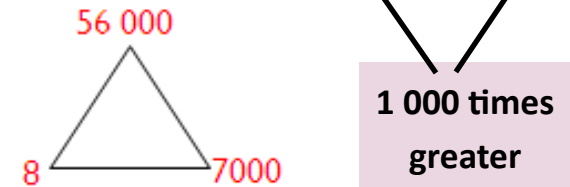
MENTAL METHOD

Key learning: Use related facts that link to tables

Look at the numbers carefully and use your knowledge of times tables.

In the calculation $56\,000 \div 8$ you can spot the timestable $56 \div 8$

So if $56 \div 8 = 7$ then $56\,000 \div 8 = 7\,000$

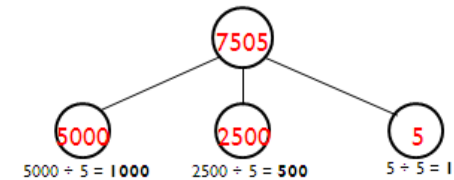


MENTAL METHOD

Key learning: use partitioning to divide 4-digit numbers by a 1-digit number

If we can partition the number into numbers that are easily divisible by 5 we can work out the calculation mentally and therefore efficiently.

Example calculation: $7505 \div 5 = 1501$



Other examples of calculations

- $5035 \div 5$ By partitioning into 5000 and 35
- $1236 \div 4$ By partitioning into 1200 and 36
- $9240 \div 6$ By partitioning into 6000 and 3000 and 240

LONG DIVISION WRITTEN METHOD (chunking method)

Key learning: divide numbers up to 4-digits by a 2-digit whole number

Method 1:

In Year 6, first the children will use the chunking method to ensure they understand the division process.

$$24 \div 4 = 6$$

Labels: divisor (4), quotient (6), dividend (24)

$$1472 \div 23 =$$

1) Lay out the calculation

$$\begin{array}{r} 23 \overline{) 1472} \\ \underline{1150} \\ 0322 \\ \underline{230} \\ 092 \\ \underline{92} \\ 00 \end{array}$$

x 50

2) Subtract a "chunk" (a multiple of the dividend)

$$23 \times 50 = 1150$$

x 10

3) Subtract a further "chunk"

$$23 \times 10 = 230$$

x 4

4) Subtract a further "chunk"

$$23 \times 4 = 92$$

There are NO repeated steps

5) Add up how many "chunks" you have subtracted. $50 + 10 + 4$

$$1472 \div 23 = 64$$

Both these methods will get the same answer. At Deepdale, we expect children to use this method as their preferred choice. It is quicker and more efficient.



LONG DIVISION WRITTEN METHOD

Key learning: divide numbers up to 4-digits by a 2-digit whole number

Method 2:

This method is based on subtracting multiples of the divisor and the expected method for Year 6

1. If you need to, write out a list of multiples of the divisor before you start the calculation
2. Begin to subtract multiples from the dividend, writing the number of multiples you have subtracted each time on top of the bus stop
3. Bring down the next digit from the dividend and repeat until the calculation is at '0' or you have a remainder.

$$4,320 \div 32 = 135$$

$$\underline{32} \quad \underline{64} \quad \underline{96} \quad \underline{128} \quad \underline{160} \quad \underline{192}$$

		1	3	5
32	<u>4</u>	<u>3</u>	2	0
-	3	2	↓	↓
	<u>1</u>	<u>1</u>	<u>2</u>	↓
-		9	6	↓
		<u>1</u>	<u>6</u>	<u>0</u>
-		1	6	0
				0