

Year 6	Division									
Vocabulary: common factors, prime number, prime factors, composite numbers, short division, square number, cube number, inverse, power of. (See previous year groups)										
Concrete	Pictorial	Abstract								
Divide numbers up to 4 digits by two-digit numbers Display remainders in different ways e.g., r 4 or $4\frac{4}{5}$ In some examples, recognise some simple decimals e.g., if quotient is $23\frac{3}{4}$, recognise it can also be expressed as 23.75. Remainders can also be expressed as a decimal to 3dp. OR 8524÷ 8 <table><tr><th>Th</th><th>H</th><th>T</th><th>O</th></tr><tr><td> 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 </td><td> 100 100 100 100 100 </td><td> 10 10 10 10 10 10 10 10 10 10 10 10 </td><td> 1 1 1 1 </td></tr></table> Extend to with remainders.	Th	H	T	O	1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000	100 100 100 100 100	10 10 10 10 10 10 10 10 10 10 10 10	1 1 1 1	Divide numbers up to 4 digits by two-digit numbers	Divide numbers up to 4 digits by two-digit numbers <u>Short Division</u> Divide numbers up to 4 -digits by a 2-digit number using a formal written method (short division) and interpret remainders appropriately for the context 496 ÷ 11 becomes 4 5 r 1 1 1 4 9 6 Answer: $45\frac{1}{11}$
Th	H	T	O							
1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000	100 100 100 100 100	10 10 10 10 10 10 10 10 10 10 10 10	1 1 1 1							

Long Division

$432 \div 15$ becomes

$$\begin{array}{r} 28 \text{ r } 12 \\ 15 \overline{) 432} \\ \underline{30} \\ 132 \\ \underline{120} \\ 12 \end{array}$$

Answer: $28 \frac{12}{15}$

Remainders can also be expressed as decimals

$432 \div 15$ becomes

$$\begin{array}{r} 28.8 \\ 15 \overline{) 432.0} \\ \underline{30} \downarrow \\ 132 \downarrow \\ \underline{120} \downarrow \\ 120 \downarrow \\ \underline{120} \\ 0 \end{array}$$

Answer: 28.8

Divide whole numbers and those involving decimals by 10, 100 and 1000

$$36.2 \div 10 = 3.62$$

Tens	Ones	tenths	hundredths
			
			

Use of manipulatives to show movement of digits across the columns.

Divide whole numbers and those involving decimals by 10, 100 and 1000

$$36.2 \div 10 = 3.62$$

Tens	Ones	tenths	hundredths
3	6	2	
	3	6	2

Use of place value columns to draw digits and move them across the columns.

Divide whole numbers and those involving decimals by 10, 100 and 1000

No written method - mental method only.

Mental Methods (as with Year 5)

Number facts

Count regularly using a range of multiples, and powers of 10, 100 and 1000, building fluency.

Practice and apply the multiplication facts to 12×12 .

Use knowledge of counting in multiples to counting in decimal steps (two decimal place).

0.25, 0.50, 0.75, 1, 1.25, 1.50

Derive corresponding halves of doubles of decimals (to 1 place) using knowledge of place value.

Half of 0.48 = 0.24 $3.64 \div 2 = 1.82$

Mental methods and jottings

Divide mentally drawing upon known number facts.

Use factors to construct equivalence statements.

Begin to divide hundredths, tenths and 1-digit whole numbers and tenths by 1 and 2-digit whole numbers.

Partitioning

Using distributive law:

$$5466 \div 6$$

$$(5400 \div 6 = 900; 60 \div 6 = 10; 6 \div 6 = 1$$

$$\text{so } 900 + 10 + 1 = 911)$$

Factors

$$84 \div 20 \text{ (halve and divide by 10)}$$

$$84 \div 2 = 42 \text{ then } 42 \div 10 = 4.2$$

With jottings

$$888 \div 24 = 888 \div 8 \div 3$$

Continue to recall division facts for multiplication tables to 12 x 12 fluently and derive and use related facts: • 560 divided by 7 • divide 2.1 by 7 • $4500 \div 50$, what is the quotient? • 4.64 divided by 4 Identify multiples and factors and common factors of two numbers and primes. Use tests of divisibility to decide whether the answer will have a remainder	<u>With Jottings</u> $24.5 \div 7 = 3.5$ $21 \div 7 = 3$ $3.5 \div 7 = 0.5$ So, $3 + 0.5 = 3.5$ <u>Doubling and halving</u> $14.82 \div 4$ (halve and halve again) <i>Half of 14.82 = 7.41 (or 7.410); half of 7.410 = 3.705</i> <u>With jottings:</u> $3800 \div 500$ (divide by 1000 then double) $3800 \div 1000 = 3.8$; double 3.8 = 7.6	<u>Estimating</u> Use rounding to check answers to calculation and determine, in the context of a problem, levels of accuracy: $4560 \div 19$ is almost $4560 \div 20$ Continue to use appropriate strategies to check answers: Check by using the inverse. $4560 \div 19 = 240$ $240 \times 19 = 4560$
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