

Year 6 Multiplication Strategies

National Curriculum

- multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication

Children will need to know how to partition 4 digit numbers and the value of each digit.

If children are multiplying larger numbers and struggling with their times tables, encourage the use of multiplication grids so children can focus on the use of the written method.

Concrete

When children start to multiply $3d \times 3d$ and $4d \times 2d$ etc., they should be confident with the abstract:

Pictorial

When children start to multiply $3d \times 3d$ and $4d \times 2d$ etc., they should be confident with the abstract:

Abstract

$1207 \times 36 =$

$1,207 \times 36$

	TT	Th	H	T	O
		1	2	0	7
$\times$				3	6
			7	2	4
		3	6	2	1
	4	3	4	5	2
	1				

(1,207 $\times$ 6)
(1,207 $\times$ 30)

Year 6 Division Strategies

National Curriculum

- divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
- divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context

Children will need to know how to partition 4 digit numbers and the value of each digit.

Children will need to know how to use Diennes apparatus and place value counters to divide 4 digits by 2 digit

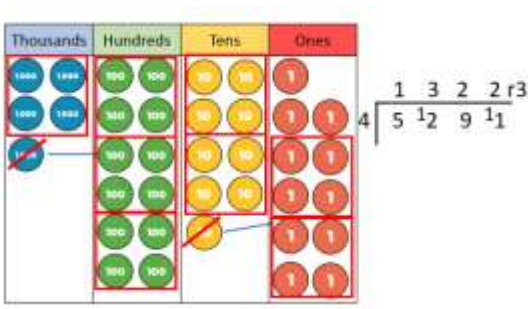
When dividing numbers involving exchanging, children can use Diennes and place value counters to exchange.

Children should start with the equipment outside the place value grid before sharing the thousands, hundreds, tens and ones equally between the rows, this highlights if there are any remainders.

Concrete

With remainders

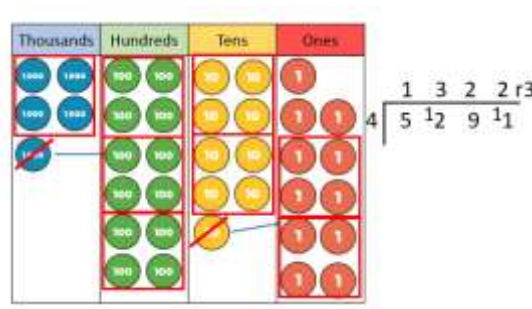
$$5291 \div 4 =$$



Pictorial

With remainders

$$5291 \div 4 =$$



Abstract

With remainders

$$5291 \div 4 =$$

$$4 \overline{) 5291} = 1322 \text{ r}3$$

Place value counters should be used to support the understanding of the method rather than the multiplication as children should use timetable knowledge.

Long Division

2544 ÷ 12 =

Long division using place value counters
2544 ÷ 12

1000s

100s

10s

1s

2

5

4

4

We can't group 2 thousands into groups of 12 so will exchange them.

1000s

100s

10s

1s

24

4

4

We can group 24 hundreds into groups of 12 which leaves with 1 hundred.

12

02

2544

24

1

1000s

100s

10s

1s

1

4

4

After exchanging the hundred, we have 14 tens. We can group 12 tens into a group of 12, which leaves 2 tens.

12

021

2544

24

14

12

2

1000s

100s

10s

1s

2

4

After exchanging the 2 tens, we have 24 ones. We can group 24 ones into 2 group of 12, which leaves no remainder.

12

0212

2544

24

14

12

24

24

0

The drawing of the place value counters should be used to support the understanding of the method rather than the multiplication as children should use timetable knowledge.

Long Division

2544 ÷ 12 =

1000s

100s

10s

1s

2

5

4

4

12

0212

2544

24

14

12

24

24

0

Long Division

2544 ÷ 12 =

12

0212

2544

24

14

12

24

24

0