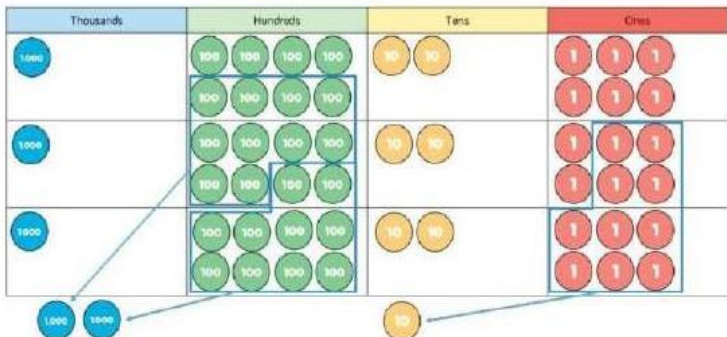




Fairfield Spencer Academy

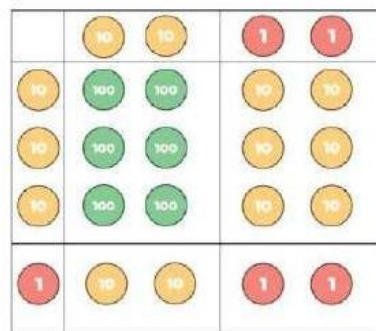
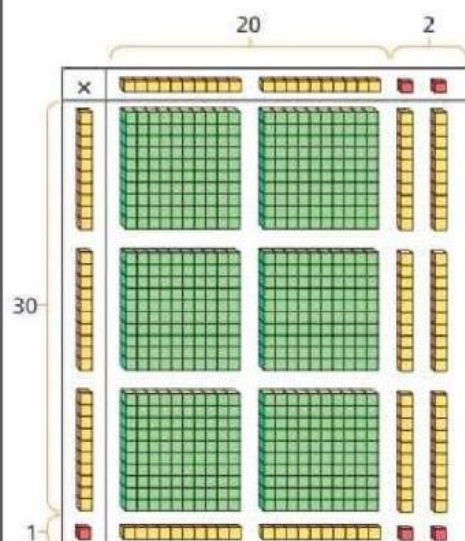
Year 5 and 6 Multiplication and Division

Multiplication

Skill: Multiply 4-digit numbers by 1-digit numbers	Year: 5																									
 $1,826 \times 3 = 5,478$ <table border="1" style="margin: 10px auto; text-align: center;"> <tr> <td></td> <td>Th</td> <td>H</td> <td>T</td> <td>O</td> </tr> <tr> <td></td> <td>1</td> <td>8</td> <td>2</td> <td>6</td> </tr> <tr> <td>×</td> <td></td> <td></td> <td></td> <td>3</td> </tr> <tr> <td></td> <td>5</td> <td>4</td> <td>7</td> <td>8</td> </tr> <tr> <td></td> <td>2</td> <td></td> <td>1</td> <td></td> </tr> </table>		Th	H	T	O		1	8	2	6	×				3		5	4	7	8		2		1		When multiplying 4-digit numbers, place value counters are the best manipulative to use to support children in their understanding of the formal written method. 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.
	Th	H	T	O																						
	1	8	2	6																						
×				3																						
	5	4	7	8																						
	2		1																							

Skill: Multiply 2-digit numbers by 2-digit numbers

Year: 5



×	20	2
30	600	60
1	20	2

	H	T	O
		2	2
×		3	1
		2	2
	6	6	0
	6	8	2

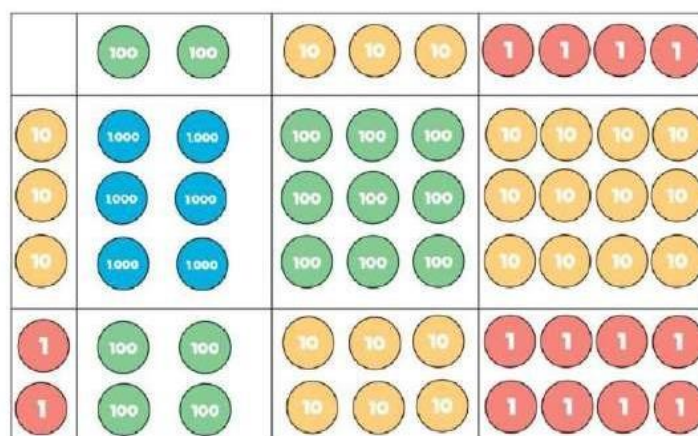
$$22 \times 31 = 682$$

When multiplying a multi-digit number by 2-digits, use the area model to help children understand the size of the numbers they are using. This links to finding the area of a rectangle by finding the space covered by the Base 10.

The grid method matches the area model as an initial written method before moving on to the formal written multiplication method.

Skill: Multiply 3-digit numbers by 2-digit numbers

Year: 5



Th	H	T	O
	2	3	4
×		3	2
	4	6	8
1 7	1 0	2	0
7	4	8	8

$$234 \times 32 = 7,488$$

×	200	30	4
30	6,000	900	120
2	400	60	8

Children can continue to use the area model when multiplying 3-digits by 2-digits. Place value counters become more efficient to use but Base 10 can be used to highlight the size of numbers.

Encourage children to move towards the formal written method, seeing the links with the grid method.

Skill: Multiply 4-digit numbers by 2-digit numbers

Year: 5/6

TTh	Th	H	T	O
	2	7	3	9
×			2	8
2	1	9	1	2
2	5	3	7	
5	4	7	8	0
1		1		
7	6	6	9	2

1

$2,739 \times 28 = 76,692$

When multiplying 4-digits by 2-digits, children should be confident in the written method.

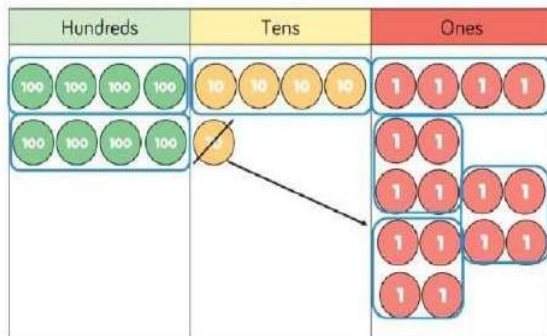
If they are still struggling with times tables, provide multiplication grids to support when they are focusing on the use of the method.

Consider where exchanged digits are placed and make sure this is consistent.

Division

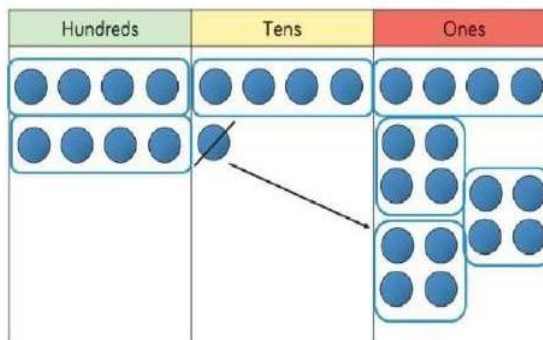
Skill: Divide 3-digits by 1-digit (grouping)

Year: 5



		2	1	4
	4	8	5	¹ 6

$$856 \div 4 = 214$$

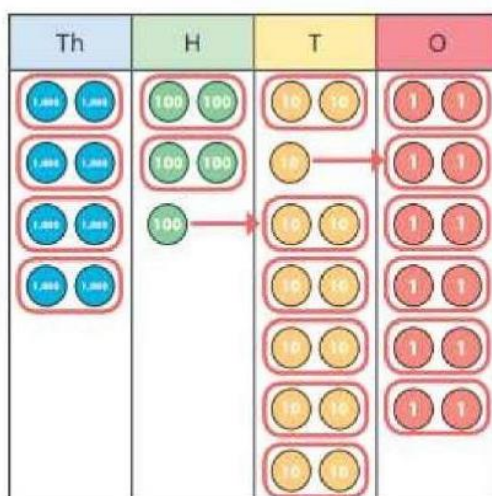


Children can continue to use grouping to support their understanding of short division when dividing a 3-digit number by a 1-digit number.

Place value counters or plain counters can be used on a place value grid to support this understanding. Children can also draw their own counters and group them through a more pictorial method.

Skill: Divide 4-digits by 1-digit (grouping)

Year: 5



	4	2	6	6
2	8	5	¹ 3	¹ 2

$$8,532 \div 2 = 4,266$$

Place value counters or plain counters can be used on a place value grid to support children to divide 4-digits by 1-digit. Children can also draw their own counters and group them through a more pictorial method.

Children should be encouraged to move away from the concrete and pictorial when dividing numbers with multiple exchanges.

Skill: Divide multi digits by 2-digits (short division)

Year: 6

		0	3	6
	12	4	4 ₃	7 ₂

$$432 \div 12 = 36$$

$$7,335 \div 15 = 489$$

	0	4	8	9
15	7	7 ₃	13 ₃	13 ₅

15	30	45	60	75	90	105	120	135	150
----	----	----	----	----	----	-----	-----	-----	-----

When children begin to divide up to 4-digits by 2-digits, written methods become the most accurate as concrete and pictorial representations become less effective. Children can write out multiples to support their calculations with larger remainders. Children will also solve problems with remainders where the quotient can be rounded as appropriate.

Glossary

Array - An ordered collection of counters, cubes or other item in rows and columns.

Commutative - Numbers can be multiplied in any order.

Dividend - In division, the number that is divided.

Divisor - In division, the number by which another is divided.

Exchange - Change a number or expression for another of an equal value.

Factor - A number that multiplies with another to make a product.

Multiplicand - In multiplication, a number to be multiplied by another.

Partitioning - Splitting a number into its component parts.

Product - The result of multiplying one number by another.

Quotient - The result of a division

Remainder - The amount left over after a division when the divisor is not a factor of the dividend.

Scaling - Enlarging or reducing a number by a given amount, called the scale factor