



Somerset Bridge Primary School  
Aspire - Brave - Care - Collaborate

# Maths: Place Value

## Autumn: Year 4

### 1000 more 1000 less

1000 Less		1000 More
1212	2212	3212

Th	H	T	O
4	3	2	4
3	2	1	4

4324 > 3243  
greater than

879 < 2126  
less than

2497	2508	3012	3521	3530	4002
------	------	------	------	------	------

smallest greatest

### Counting

Counting in 6s

0	6	12	18	24	30	36	42	48	54	60
---	---	----	----	----	----	----	----	----	----	----

Counting in 7s

0	7	14	21	28	35	42	49	56	63	70
---	---	----	----	----	----	----	----	----	----	----

Counting in 9s

0	9	18	27	36	45	54	63	72	81	90
---	---	----	----	----	----	----	----	----	----	----

Counting in 25s

0	25	50	75	100	125	150	175	200	225	250
---	----	----	----	-----	-----	-----	-----	-----	-----	-----

Counting in 1000s

0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10 000
---	------	------	------	------	------	------	------	------	------	--------

one	1	I
five	5	V
ten	10	X
fifty	50	L
one hundred	100	C

XVIII = 18

XXIX = 29

LXXXIV = 84

### Rounding

Look at the place value column to the right of the value you are rounding to. If this digit is a 4 or less, round down. If the digit is a 5 or more, round up.

Rounding to nearest 10

20	21	22	23	24	25	26	27	28	29	30
← round down					round up →					

Rounding to the nearest 100

200	249	250	300
← round down		round up →	

Rounding to the nearest 1000

2000	2499	2500	3000
← round down		round up →	

### Key Vocabulary

Thousands	100 times greater than 10.	✓
Hundreds	A number equal to 10 times 10.	
Tens	A set of 10 ones.	
Ones	A quantity of 1.	
Zero	No number is present.	
Place Value	The value of a digit.	
Greater than	A quantity that is larger or bigger.	
Less than	A value that is lesser.	
Rounding	Replacing a number by a simpler number. Example: 543 rounded to the nearest 10 is 540.	
Negative number	Numbers below zero.	
Partition	Splitting numbers into smaller parts.	
Roman numeral	How ancient Romans used to write numbers.	
Order	Arranged in a sequence or pattern..	





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# Maths: Addition and Subtraction

## Autumn: Year 4

### Addition Methods

#### Add 4-digit numbers

No exchange

$$\begin{array}{r} 5162 \\ +3427 \\ \hline 8589 \end{array}$$

Starting with the ones, add each column in turn.

One exchange

$$\begin{array}{r} 5162 \\ +3497 \\ \hline 8659 \\ 1 \end{array}$$

Starting with the ones, add each column in turn. When adding 6 tens + 9 tens = 15 tens = 1 hundred + 5 tens. Place 1 hundred under the hundreds answer and 5 tens in the answer.

Multiple exchanges

$$\begin{array}{r} 5864 \\ +3497 \\ \hline 9361 \\ 111 \end{array}$$

Starting with the ones, add each column in turn. Exchange tens, hundreds and/ or thousands as required.

We start on the right then move left and total each column... **start here**

	Th	H	T	O
	5	4	7	1
+	2	2	0	3
	7	6	7	4

It's VERY important to put digits in the correct column and make sure the columns are lined up.

### Checking Strategies

#### Using Inverse

3476	
2732	744

$3476 - 744 = 2732$  can be checked using  $2732 + 744 = 3476$

This part whole shows the inverse calculations using these three numbers.



$1549 + 2688 = 4237$	$2688 + 1549 = 4237$
$4237 - 1549 = 2688$	$4237 - 2688 = 1549$

#### Adding in a different order

$$420 + 372 + 280 =$$

#### Change to

$$420 + 280 + 372 =$$

$$\text{As } 420 + 280 = 700$$

(because  $42 + 28 = 70$ )

$$420 + 280 + 372 = 700 + 372 = 1072$$

### Subtract 4-digit numbers

No exchange

$$\begin{array}{r} 5789 \\ -3421 \\ \hline 2368 \end{array}$$

Starting with the ones, subtract each column in turn.

One exchange

$$\begin{array}{r} 61 \\ 5749 \\ -3471 \\ \hline 2278 \end{array}$$

Starting with the ones, subtract each column in turn. When subtracting 4 tens - 7 tens, exchange 1 hundred to make:  
 $14 \text{ tens} - 7 \text{ tens} = 7 \text{ tens}$

Multiple exchanges

$$\begin{array}{r} 6131 \\ 5742 \\ -3476 \\ \hline 2266 \end{array}$$

Starting with the ones, subtract each column in turn. Exchange tens, hundreds and/ or thousands as required.

### Key Vocabulary

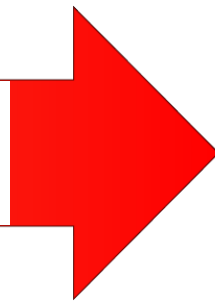
Addend	A number which is added to another.
Subtrahend	A number to be subtracted from another.
Sum	A total amount.
Difference	The result of subtracting one number from another.
Inverse operation	The reverse of a calculation. E.g. $5+3=8$ $8-3=5$
Less	A value that is not as great.
Minus	Subtraction/take away.
Column addition	Addition by writing one number below the other and then adding one column at a time.
Column subtraction	The numbers to be added or subtracted are set out above one another in columns.

Here is a number...

Th	H	T	O
3	6	9	2

If we add 3 to the ones column the number will be 3695; only the ones column changes.

If we add 3 to the tens column the number will be 3722; both the hundreds and the tens columns change.





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# Maths: Measurement - Area

## Autumn: Year 4

### Area and Perimeter

**Area** is the amount of space inside a 2D shape.  
**Perimeter** is the total **distance** around the outside of a 2D shape.



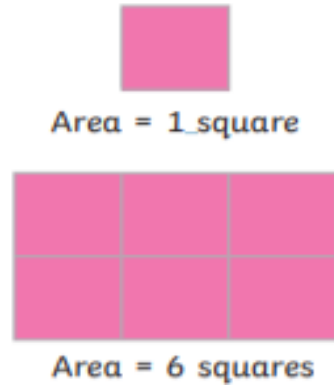
### Area and Perimeter

A rectilinear figure is a 2D shape whose sides all meet at right angles (90°)



### Measuring Area

We can count **squares** to find the **area** of a **rectilinear** shape.

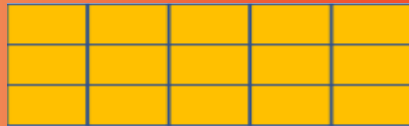


### Units of Measure for Perimeter

km	1 kilometre = 1000 metres
m	1 metre = 100 centimetres
cm	1 centimetre = 10 millimetres
mm	

Key Vocabulary		✓
Area	The amount of space taken up by a 2D shape.	
Perimeter	The distance all the way around a 2D shape.	
Squares	The number of 1cm square units that make up the area of a shape.	
Kilometres	A unit of length that is equal to 1000 meters.	
Length	The distance between two points.	
Width	The distance from side to side.	
Rectilinear	A shape that has straight sides and right angles.	
Right angle	An angle that measures 90° (degrees).	

Using times tables (or blank arrays) is a more efficient way to find the area.



5 squares in 1 row. There are 3 rows altogether. 3 rows of 5 squares = 15 squares.



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# Maths: Multiplication Autumn: Year 4

## Multiplication and Division Facts

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

### Use Place Value to Multiply and Divide Mentally

$5 \times 1 = 5$   
 $5 \div 1 = 5$

$5 \times 10 = 50$   
 $50 \div 10 = 5$

$5 \times 100 = 500$   
 $500 \div 100 = 5$

### Multiply Using Formal Written Methods

Th H T O	Th H T O	Remember to move any regrouped numbers into the next column. After the next multiplication, add the regrouped number to the answer.
5 4 3	5 4 3	
x 4	x 4	
1 2 (4 x 3)	2 1 7 2	
1 6 0 (4 x 40)	1 1	
2 0 0 0 (4 x 500)		
2 1 7 2		

### Key Vocabulary

Lots of	When we say lots of, we are talking about groups e.g. If we say 2 lots of 2, it means that there are 2 groups of two.
Multiply	Equal groups of. E.g $4 \times 4$ can be read as 4 equal groups of 4.
Factor	Numbers that can be multiplied together to get another number.
Multiple	The product of one number multiplied by another.
Product	The answer when two numbers are multiplied together.
Commutative	When you can swap numbers and get the same answer.

20

The factors of 20 are 1, 2, 4, 5, 10 and 20.  
The factor pairs are:  
1 and 20    2 and 10    4 and 5

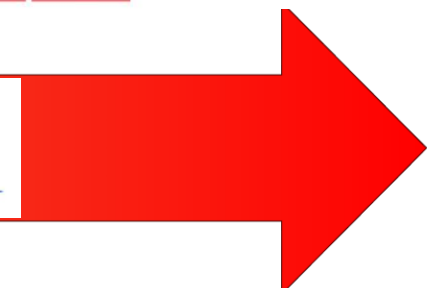
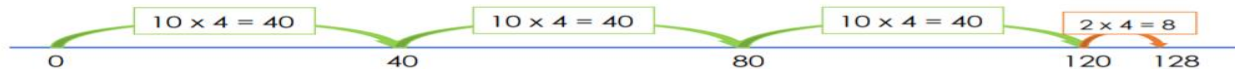
$5 \times 4 = 20$

$4 \times 5 = 20$

We can use a number line to solve multiplication problems...  $32 \times 4$

1) partition 32 into 30 + 2

2) partition 30 into 10 + 10 = 10





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# Maths: Division

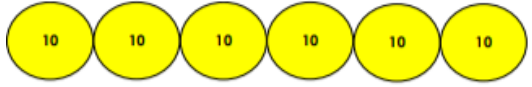
## Autumn: Year 4

### Key Vocabulary

Divide	Splitting into equal parts.	✓
Share	When something is shared equally, there is the same amount in each group.	
Quotient	The answer when dividing. Dividing 10 by 5 is 2, 2 is the quotient.	
Divisor	The number we divide by. E.g $12 \div 3 = 4$ , 3 is the divisor.	
Dividend	A number that is divided by another number (divisor) is the dividend. Eg. $24 \div 4 = 6$ , 24 is the dividend.	
Column	Numbers arrange on above the other.	

### Dividing by 10

$60 \div 10 =$  how many groups of 10 in 60?



There are 6 groups of 10

$$60 \div 10 = 6$$

When we divide by 10 we are making the number 10 times smaller.

### Multiplication and Division Facts

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

$140 \div 10 =$  ?? groups of 10



14 groups of 10

$360 \div 10 = 36$

Exchange 3 hundreds for 3 tens and 6 tens for 6 ones

Th	H	T	O
	3	6	0
		3	6

Dividing by 10

The rule...  
To divide by 10 you move all the digits one column to the right

When we divide by 1 we are saying 'How many groups of 1 are in...'

$$12 \div 1 = 12$$

