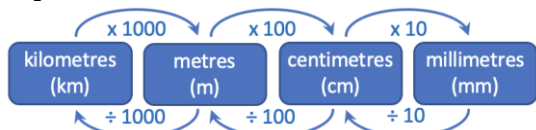


Measure Converting units

Length



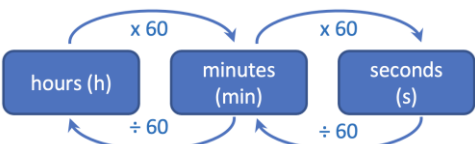
Mass



Capacity / Volume



Time

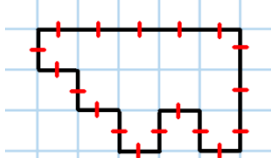


12- and 24-hour clock

Morning
 12h 12:00am 1:00 am 2:00 am 3:00 am 4:00 am 5:00 am 6:00 am 7:00 am 8:00 am 9:00 am 10:00am 11:00 am
 24h 00:00 01:00 02:00 03:00 04:00 05:00 06:00 07:00 08:00 09:00 10:00 11:00

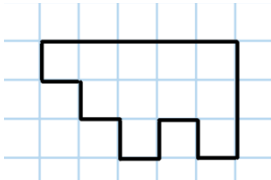
Afternoon
 12h 12:00pm 1:00 pm 2:00 pm 3:00 pm 4:00 pm 5:00 pm 6:00 pm 7:00 pm 8:00 pm 9:00 pm 10:00pm 11:00 pm
 24h 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00

Perimeter



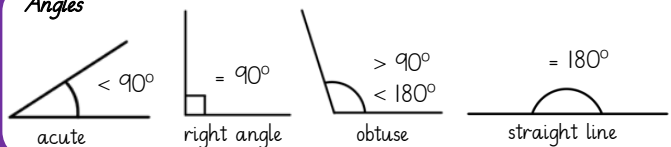
The length of the outside of a shape. Measure or count around the edges. $P = 18$

Area



The space inside a shape. Count or calculate the number of squares. $A = 11$

Angles



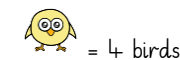
Tables and Graphs

MATHS KNOWLEDGE ORGANISER - YEAR 4

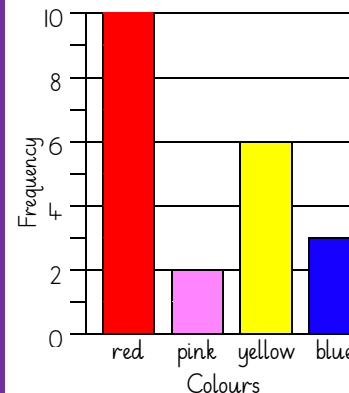
Pictogram

Number of birds visiting garden	
Friday	
Saturday	
Sunday	

Key

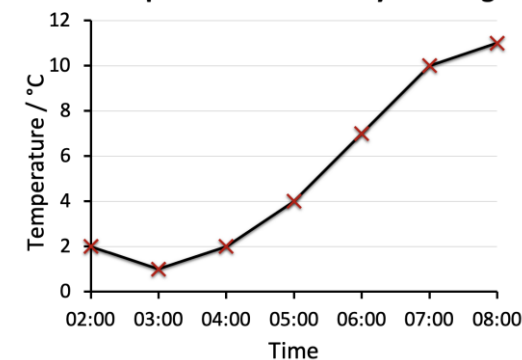


Discrete data – is counted
 Favourite colours



Continuous data – is measured

Temperature on Tuesday morning



Properties of 2D Shapes

Quadrilaterals - 4 sides. Interior angles add up to 360°

Square (regular) 	4 equal sides, 4 equal angles (90°) Opposite sides parallel 4 lines of symmetry Rotational symmetry order 4
Rectangle 	Opposite sides parallel and equal 4 equal angles (90°) 2 lines of symmetry Rotational symmetry order 2
Rhombus 	4 equal sides Opposite sides parallel Opposite angles equal 2 lines of symmetry Rotational symmetry order 2
Parallelogram 	Opposite sides equal and parallel Opposite angles equal No lines of symmetry Rotational symmetry order 2

Trapezium



One pair of parallel sides
 Has a line of symmetry if the non-parallel lines are equal
 No rotational symmetry

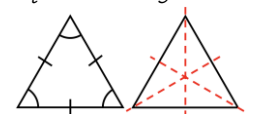
Kite



One pair of equal opposite angles
 Two pairs of equal adjacent sides
 One line of symmetry
 No rotational symmetry

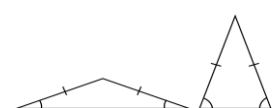
Triangle - 3 sides. Interior angles add up to 180°

Equilateral (regular)



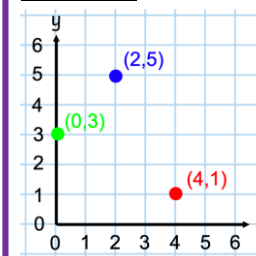
3 equal sides
 3 equal angles (60°)
 3 lines of symmetry
 Rotational symmetry order 3

Isoceles



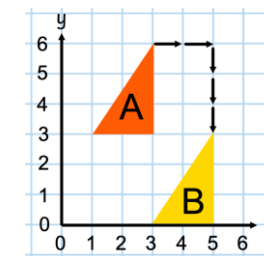
One pair equal sides
 One pair equal angles
 One line of symmetry
 No rotational symmetry

Coordinates



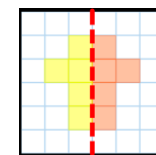
Read coordinates (x,y)
 Along the corridor, then up the stairs.

Translation

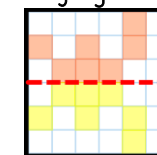


Shape A has been translated (moved) two squares right and three squares down.

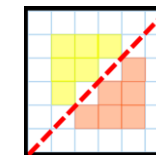
Lines of Symmetry



Vertical



Horizontal



Oblique

Multiples

6	7	9	25
0	0	0	0
6	7	9	25
12	14	18	50
18	21	27	75
24	28	36	100
30	35	45	125
36	42	54	150
42	49	63	175
48	56	72	200
54	63	81	225
60	70	90	250
66	77	99	275
72	84	108	300

Place Value

Thousands	Hundreds	Tens	Ones
4	2	3	7

4 237 = 4 000 + 200 + 30 + 7

1 000 more = 5 238 Only the thousands
 1 000 less = 3 236 digit changes

Naming numbers

Count back three from the right; where you put the comma or the space, say thousand.
 4,237 Four thousand two hundred and thirty seven
 2 100 Two thousand one hundred
 6 709 Six thousand seven hundred and nine

Multiplication and division

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

Factor pairs

24 has 4

factor pairs:

24 = 1 x 24

= 2 x 12

= 3 x 8

= 4 x 6

Remember

4 x 6 = 24

6 x 4 = 24

24 ÷ 4 = 6

24 ÷ 6 = 4

Multiply by 1 digit

$$\begin{array}{r} 475 \\ \times 7 \\ \hline 3325 \\ \hline \end{array}$$

Making links and using facts

475 x 7 = 3325 so 475 x 14 = 6650

x 2

x 2

400 x 7 = 2800

70 x 7 = 490

5 x 7 = 35

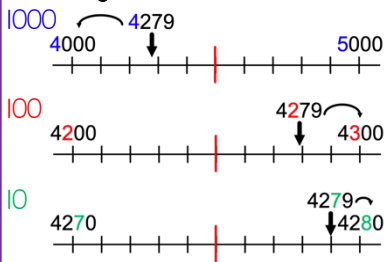
475 x 3 = 3325

475 x 7 = 3325

so 475 x 8 = 3325 + (475 x 1)

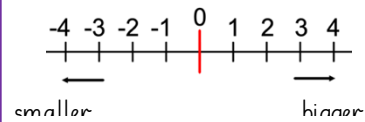
475 x 9 = 3325 + (475 x 2)

Rounding 4279 to the nearest



Negative numbers

Numbers below zero



Add

$$\begin{array}{r} 1687 \\ + 955 \\ \hline 2642 \\ \hline \end{array}$$

altogether
sum
total

Subtract

$$\begin{array}{r} 561 \\ - 95 \\ \hline 466 \\ \hline \end{array}$$

How many more?
take away
difference
less than
minus

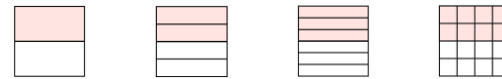
Roman numerals

I = 1 5 = V 10 = X 50 = L 100 = C

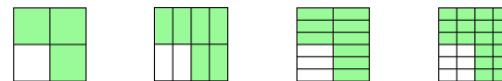
1	I	26	XXVI	51	LI	76	LXXVI
2	II	27	XXVII	52	LII	77	LXXVII
3	III	28	XXVIII	53	LIII	78	LXXVIII
4	IV	29	XXIX	54	LIV	79	LXXIX
5	V	30	XXX	55	LV	80	LXXX
6	VI	31	XXXI	56	LVI	81	LXXXI
7	VII	32	XXXII	57	LVII	82	LXXXII
8	VIII	33	XXXIII	58	LVIII	83	LXXXIII
9	IX	34	XXXIV	59	LIX	84	LXXXIV
10	X	35	XXXV	60	LX	85	LXXXV
11	XI	36	XXXVI	61	LXI	86	LXXXVI
12	XII	37	XXXVII	62	LXII	87	LXXXVII
13	XIII	38	XXXVIII	63	LXIII	88	LXXXVIII
14	XIV	39	XXXIX	64	LXIV	89	LXXXIX
15	XV	40	XL	65	LXV	90	XC
16	XVI	41	XLI	66	LXVI	91	XCI
17	XVII	42	XLII	67	LXVII	92	XCII
18	XVIII	43	XLIII	68	LXVIII	93	XCIII
19	XIX	44	XLIV	69	LXIX	94	XCIV
20	XX	45	XLV	70	LXX	95	XCV
21	XXI	46	XLVI	71	LXXI	96	XCVI
22	XXII	47	XLVII	72	LXXII	97	XCVII
23	XXIII	48	XLVIII	73	LXXIII	98	XCVIII
24	XXIV	49	XLIX	74	LXXIV	99	XCIX
25	XXV	50	L	75	LXXV	100	C

Fractions

Equivalent fractions



$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{8}{16}$



$\frac{3}{4} = \frac{6}{8} = \frac{9}{12} = \frac{18}{24}$

Addition and subtraction

$\frac{4}{7} + \frac{1}{7} = \frac{5}{7}$

$\frac{4}{7} - \frac{1}{7} = \frac{3}{7}$

Decimal equivalents

$\frac{1}{4} = 0.25$ $\frac{1}{2} = 0.5$ $\frac{3}{4} = 0.75$

Rounding to the nearest whole number

Which whole number is closest?

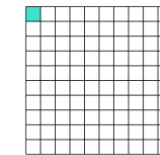


6.4 rounds down to 6, 6.7 rounds up to 7

Hundredths

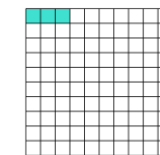
Tens	Ones	Tenths	Hundredths
4	2	.	3
			7

One whole divided into 100 equal parts

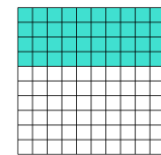


Each part = 1 hundredth = $\frac{1}{100} = 0.01$

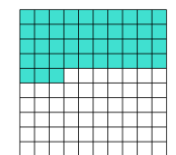
To find one hundredth, divide by 100.



$\frac{3}{100} = 0.03$



$\frac{40}{100} = \frac{4}{10} = 0.4$



$\frac{43}{100} = \frac{4}{10} + \frac{3}{100} = 0.43$

Effect of dividing by 10

Tens	Ones	Tenths
2	9	.
	2	.
		9

Each digit moves one place to the right.

Effect of dividing by 100

Tens	Ones	Tenths	Hundredths
2	9	.	
	0	.	2
			9

Each digit moves two places to the right.