

Year 4: Maths Knowledge Mat



Counting from 0

Counting in **multiples of 6**
0, 6, 12, 18, 24, 30, 36, 42 ...

Counting in **multiples of 7**
0, 7, 14, 21, 28, 35, 42, 49...

Counting in **multiples of 9**
0, 9, 18, 27, 36, 45, 54, 63 ...

Counting in **multiples of 25**
0, 25, 50, 75, 100, 125, 150...

Counting in **multiples of 1000**
0, 1000, 2000, 3000, 4000...

Counting up and down in **hundredths**

$\frac{1}{100}, \frac{2}{100}, \frac{3}{100}, \frac{4}{100} \dots \frac{99}{100}, 1$

A **thousand more** than 4753 is
5753.

A **thousand less** than 4753 is
3753.

Rounding



The numbers below half way all **ROUND DOWN** to 30

The number in the middle is half way and **ROUNDS UP** to 40

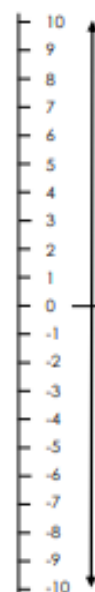
Rounding to 100 and 1000 follows the same rule.

350 rounds up to 400
3500 rounds up to 4000

Rounding decimal places also follows the same rule.

3.4 rounds to 3.0 but 3.5 rounds to 4.0
3.04 rounds to 3.00 but 3.05 rounds to 3.10

Negative Numbers



Numbers above 0 (zero) are positive

Numbers below 0 (zero) are negative

Multiplication Tables

(and 2x, 3x, 4x, 5x, 8x, 10x from previous years)

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

Roman Numerals

1 = I	10 = X
2 = II	20 = XX
3 = III	30 = XXX
4 = IV	40 = XL
5 = V	50 = L
6 = VI	60 = LX
7 = VII	70 = LXX
8 = VIII	80 = LXXX
9 = IX	90 = XC
	100 = C

Factors

A **factor pair** is a pair of numbers that, when multiplied will result in a given product.

Factor pairs of 16 are

1, 16
2, 8
4, 4

Formal methods of short multiplication and division

351 x 7 becomes

X	300	10	5
7	2 100	70	35

Total: 2 100 + 70 + 5 = 2 175

91 ÷ 7 becomes

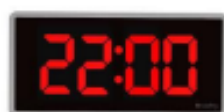
	13
7	91
	70 (10x)
	21
	21 (3x)

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Time – Sticky Knowledge

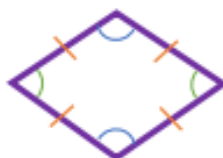
Digital and analogue clocks



Both clocks show it is 10 o'clock. But only the digital clock shows that it is pm (in the evening) because it is using 24 hour time.

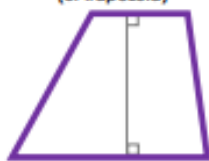
2D Shapes

Rhombus



All four sides are the same length, like a square that has been squashed sideways.

Trapezium (or trapezoid)



Two sides are parallel. Side lengths and angles are not equal.

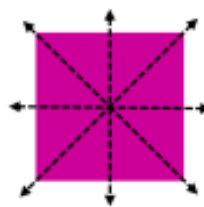
Symmetry



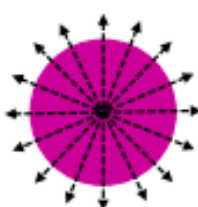
1 line of symmetry



3 lines of symmetry



4 lines of symmetry



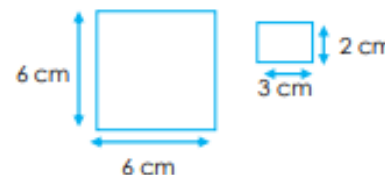
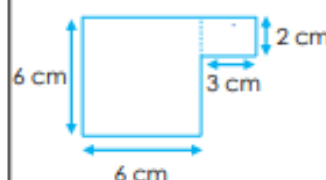
Infinite number of lines of symmetry

Simplifying fractions

$$\frac{40}{80} = \frac{20}{40} = \frac{10}{20} = \frac{5}{10} = \frac{1}{2} \quad \text{So } \frac{40}{80} = 0.5$$

Area

The area of this shape → EQUALS → the area of these two



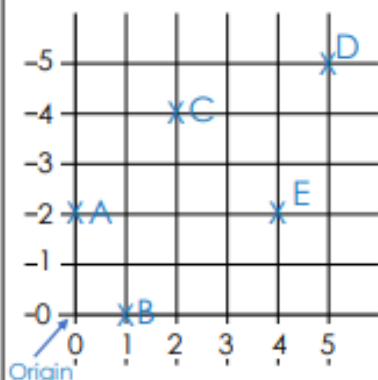
$$\begin{aligned} \text{The area of this shape} &= (6 \times 6) + (2 \times 3) \\ &= 36 + 6 \\ &= 42 \text{ cm}^2 \end{aligned}$$

Place value

Each row divides by 10

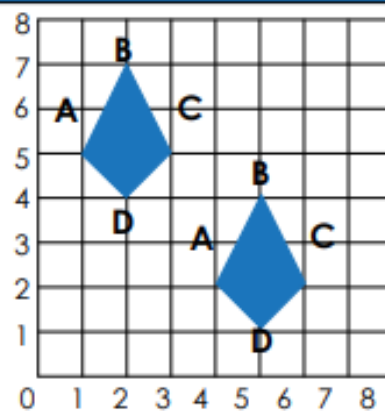
Place value	Tens	Ones	•	tenths	hundredths
45	4	5	•	0	0
$4.5 = 4\frac{5}{10} = 4\frac{1}{2}$	0	4	•	5	0
$0.45 = \frac{45}{100}$	0	0	•	4	5

Coordinates



X axis comes first, so

A = (0,2)
B = (1,0)
C = (2,4)
D = (5,5)
E = (4,2)



This shape has been **translated** up and left by -3, -3. (Taken away from each co-ordinate.)

Triangles



Equilateral Triangle



Right Triangle



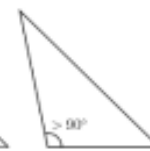
Isosceles Triangle



Scalene Triangle



Acute Triangle



Obtuse Triangle