



# 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 ...

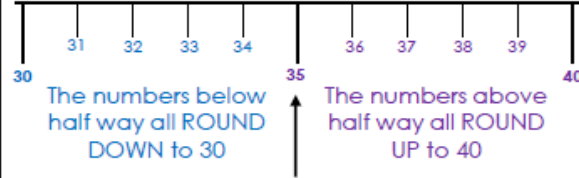
Counting in **multiples of 25**  
0, 25, 50, 75, 100, 125, 150...

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

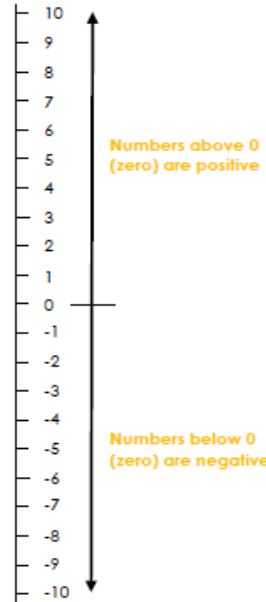
**Rounding to 100 and 1000** follows the same rule.

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



## 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

## Formal methods of short multiplication and division

351 x 7 becomes

$$\begin{array}{r} 351 \\ \times 7 \\ \hline 2157 \end{array}$$

91 ÷ 7 becomes

$$\begin{array}{r} 13 \\ 7 \overline{) 91} \\ \underline{7} \phantom{1} \\ 21 \\ \underline{21} \\ 0 \end{array}$$

## 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

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## Time – Sticky Knowledge

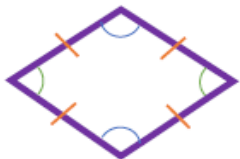
### Digital and analogue clocks



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.

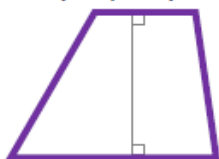
## 2D Shapes

### Rhombus



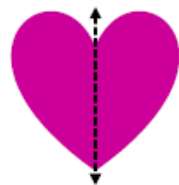
All four sides are the same length, like a square that has been squashed sideways.

### Trapezium (or trapezoid)

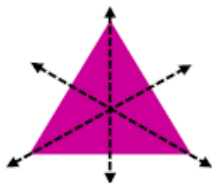


Two sides are parallel. Side lengths and angles are not equal.

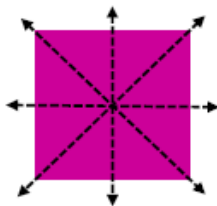
## Symmetry



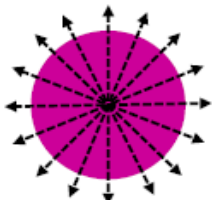
1 line of symmetry



3 lines of symmetry



4 lines of symmetry



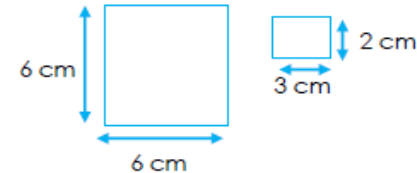
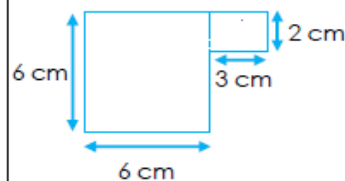
Infinite number of lines of symmetry

## 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



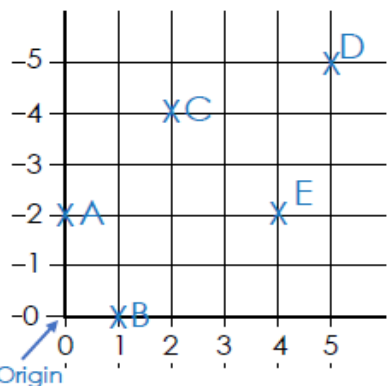
$$\begin{aligned} \text{The area of this shape} &= (6 \times 6) + (2 \times 3) \\ &= 36 + 6 \\ &= 42 \text{ cm}^2 \end{aligned}$$

### Place value

Each row divides by 10

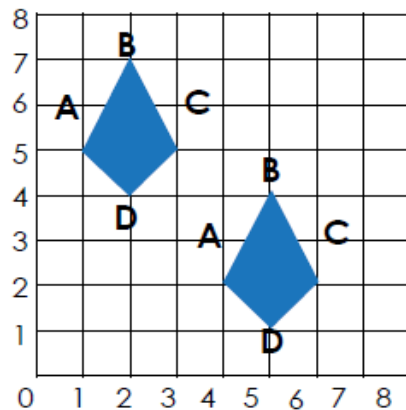
Place value	Tens	Ones	•	tenths	hundredths
45	4	5	•	0	0
$4.5 = 4\frac{5}{10} = 4\frac{1}{2}$	0	4	•	5	0
$0.45 = \frac{45}{100}$	0	0	•	4	5

## Coordinates



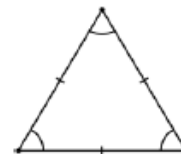
X axis comes first, so

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

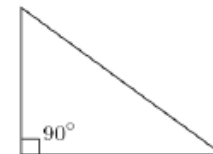


This shape has been **translated** up and left by -3, -3. (Taken away from each co-ordinate.)

## Triangles



Equilateral Triangle



Right Triangle



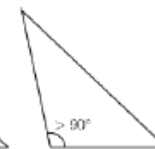
Isosceles Triangle



Scalene Triangle



Acute Triangle



Obtuse Triangle