

# MATHS KNOWLEDGE ORGANISER - YEAR 3

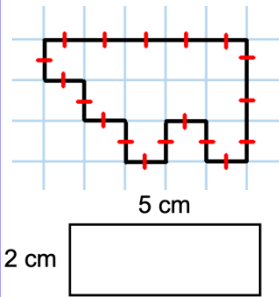
## Length

1 metre = 100 centimetres  
 1 centimetre = 10 millimetres  
 2 cm + 6 mm = 20 mm + 6 mm  
 = 26 mm  
 (or 2.6 cm, or 2 cm 6 mm)

## Volume

1 litre = 1000 ml  
 700 ml + 820 ml = 1520 ml  
 (or 1.52 l or 1 l 250ml)

## Perimeter



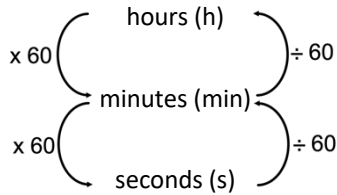
Count all the edges = 18

Perimeter = 2 + 5 + 2 + 5 = 14 cm

## Mass

1 kilogram = 1000 grams  
 2 kg - 350 g = 2000 - 350g = 1650 g  
 (or 1.65 kg or 1 kg 650g)

## Time



## Money

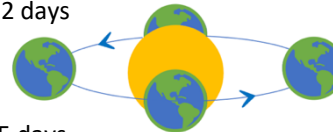
Calculate a bill  
 Burger: £2.20  
 Chips: £1.10  
 Drink: 65p  
 Total: £ 3.95

## Measure

Time on the 12 hour clock

Morning	Afternoon
12:00 am	12:00 pm
midnight	noon
1:00 am	1:00 pm
2:00 am	2:00 pm
3:00 am	3:00 pm
4:00 am	4:00 pm
5:00 am	5:00 pm
6:00 am	6:00 pm
7:00 am	7:00 pm
8:00 am	8:00 pm
9:00 am	9:00 pm
10:00 am	10:00 pm
11:00 am	11:00 pm
12:00 pm	12:00 am
noon	midnight

Time to orbit the Sun = 365.2422 days

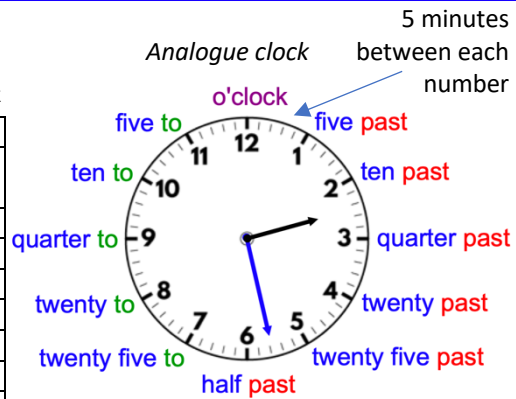


1 year = 365 days  
 1 leap year = 366 days (every 4 years)

Calculate change by adding on

+ 8p   + 10p   + 50p   + £3  
 £1.32   £1.40   £1.50   £2.00   £5.00  
 Change from £5 = £3+50p+10p+8p = £3.68

30 days hath September, April, June and November. All the rest have 31, Except for February alone, Which has but 28 days clear And 29 in each leap year.



## Tables and Graphs

### Pictogram

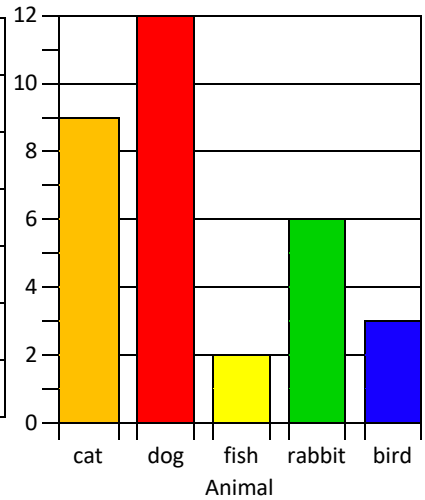
Number of cakes bought	
Morning	
Afternoon	
Evening	

Key  
 = 2 cakes

### Tally chart Year 3's pets

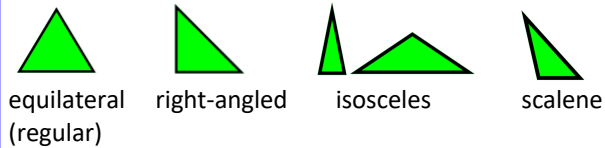
animal	tally	total
cat		9
dog		12
fish		2
rabbit		6
bird		3
Total pets		32

### Block graph Year 3's pets

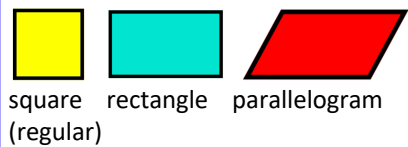


## 2D Shapes

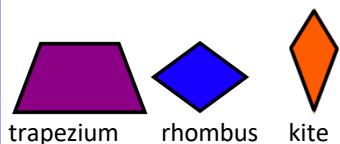
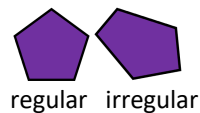
Triangle - 3 sides



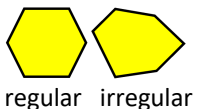
Quadrilaterals 4 sides



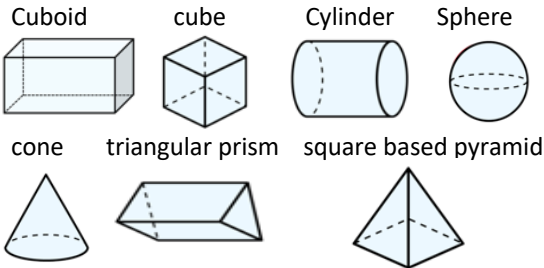
Pentagons 5 sides



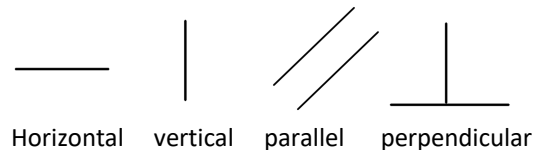
hexagons 6 sides



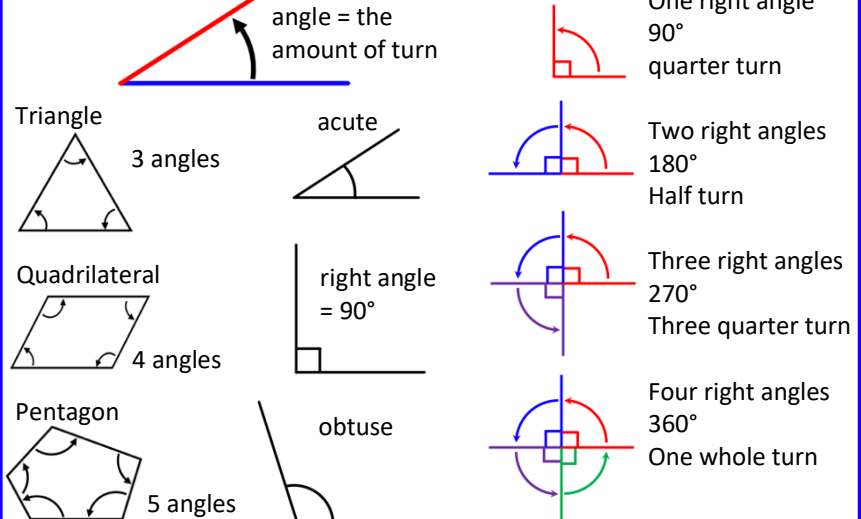
## 3D Shapes



## Lines



## Angles



## Multiples

	3	4	8	50	100
x 0	0	0	0	0	0
x 1	3	4	8	50	100
x 2	6	8	16	100	200
x 3	9	12	24	150	300
x 4	12	16	32	200	400
x 5	15	20	40	250	500
x 6	18	24	48	300	600
x 7	21	28	56	350	700
x 8	24	32	64	400	800
x 9	27	36	72	450	900
x 10	30	40	80	500	1000
x 11	33	44	88	550	1100
x 12	36	48	96	600	1200

## Place Value

Hundreds	Tens	Ones
2	3	7

$$237 = 200 + 30 + 7$$

1 more = 238      Only the ones digit changes.  
1 less = 236

10 more = 247      Only the tens digit changes.  
10 less = 227

100 more = 337      Only the hundreds digit changes.  
100 less = 137

## Multiplication and division

Multiply 2-digits by 1 digit

Column method      Grid method

$$\begin{array}{r} 47 \\ \times 3 \\ \hline 141 \end{array}$$

$$\begin{array}{r|l} 47 & \\ \hline 3 & 120 \ 21 \\ \hline & 141 \end{array}$$

Making links and using facts:

Partitioning

$$47 \times 3 = 40 \times 3 + 7 \times 3$$

$$= 120 + 21$$

$$= 141$$

$6 \times 3 = 18$        $60 \times 3 = 180$

x 10      x 10

40				
8	8	8	8	8
$8 \times 5 = 40$		$40 \div 5 = 8$		
$5 \times 8 = 40$		$5 = 40 \div 8$		

$7 \times 8 = 56$        $14 \times 8 = 112$

x 2      x 2

## Naming numbers

One hundred and fifty three

H	T	O
1	5	3

H	T	O
6	0	9

Six hundred and nine

Four hundred and thirteen

H	T	O
4	1	3

## Order Numbers

Compare hundreds first.

Hundreds	Tens	Ones
2	5	8
2	2	9
4	7	3
1	5	7
2	2	1

$$473 > 258 > 229 > 221 > 157$$

## Mental addition 165 + 232

Partitioning

$$100 + 60 + 5 + 200 + 30 + 2 = 300 + 90 + 7 = 397$$

## Mental subtraction 649 - 235

Partitioning

$$649 - 200 - 30 - 5 = 449 - 30 - 5 = 419 - 5 = 414$$

Counting on from 235

$$235 + 5 = 240$$

$$240 + 400 = 640$$

$$640 + 9 = 649$$

$$400 + 9 + 5 = 414$$

## Written addition 569 + 123

$$\begin{array}{r} 569 \\ + 123 \\ \hline 692 \\ \hline 1 \end{array}$$

Make sure the digits are lined up in the right columns.

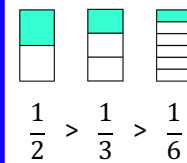
## Written subtraction 437 - 118

$$\begin{array}{r} 437 \\ - 118 \\ \hline 319 \end{array}$$

## Fractions

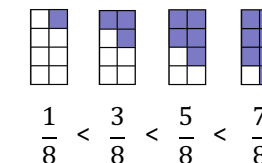
Comparing and ordering

Same numerator



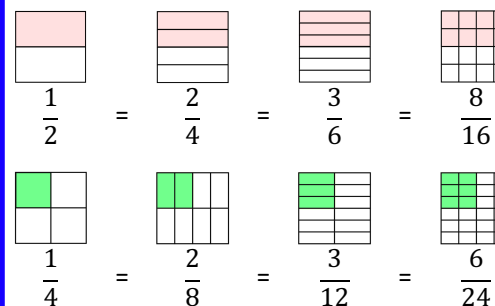
The larger the denominator, the smaller the fraction.

Same denominator

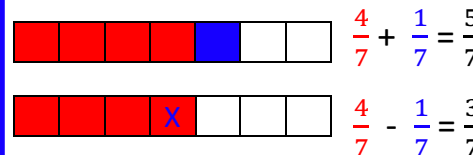


The larger the numerator, the larger the fraction.

Equivalent fractions

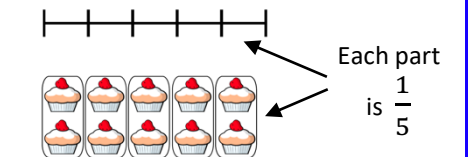


Addition and subtraction



Fractions of amounts

To find 1/5, divide into 5 equal parts.



$\frac{3}{5}$  of the stars are yellow.       $\frac{2}{5}$  of the stars are red.

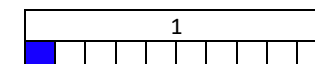
$\frac{1}{5}$  of 20 =  $20 \div 5 = 4$   
 $\frac{2}{5}$  of 20 =  $4 \times 2 = 8$   
 $\frac{3}{5}$  of 20 =  $4 \times 3 = 12$

20				
4	4	4	4	4
8				
12				

Tenths

Tens	Ones	Tenths
2	5	8

One whole divided into 10 equal parts



To find one tenth, divide by ten.

Each part = 1 tenth =  $\frac{1}{10} = 0.1$

