

St Stephen's Tockholes C. of E. Primary School

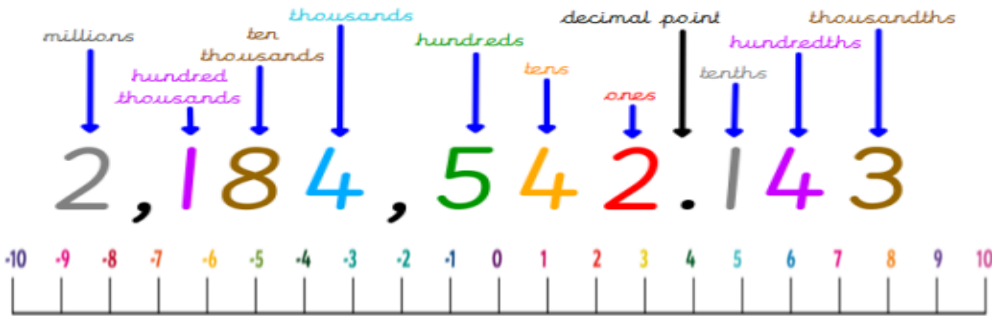
Year 5 Mathematics Core Knowledge Organiser



Place Value

Decimals

Vocabulary



Multiple—the answer to a multiplication

Factor—a number which can divide into a multiple without leaving a remainder

Common Factor—a number which is a factor of two or more other numbers

Prime Numbers—a number with only 1 pair of factors (1 and itself) 2 = only even prime

Composite Numbers—non-prime numbers

1 is not a prime or composite number

Prime Factor—a factor of a number that is also a prime number

Square number— $2^2 = 2 \times 2 = 4$

Cube number - $3^3 = 3 \times 3 \times 3 = 27$

Measure Conversions

1 centimetre	10mm
1 metre	100cm
1 kilometre	1,000 m
1 mile	1.6 km
1 kilometre	0.625 (5/8) mile
1 kilogram	1,000 grams
1 litre	1,000 millilitres

Using known tables facts

$$3 \times 5 = 15$$

$$30 \times 5 = 150$$

$$300 \times 5 = 1,500$$

$$3,000 \times 5 = 15,000$$

$$0.3 \times 5 = 1.5$$

$$0.03 \times 5 = 0.15$$

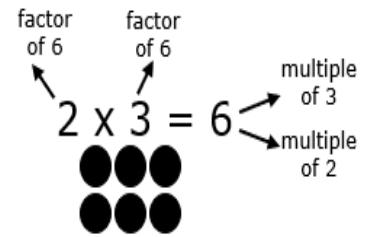
Equivalent fractions, decimals and percentages



Roman Numerals

1	I	100	C
5	V	500	D
10	X	1000	M
50	L		

Multiplication



Addition

$$\begin{array}{r} 787567 \\ + 446278 \\ \hline 1233845 \\ \hline \end{array}$$

Subtraction

$$\begin{array}{r} 817121 \\ 742831 \\ - 427358 \\ \hline 315473 \\ \hline \end{array}$$

Long Multiplication

			4	3	5	7	
						3	6
		x					
			2	6	1	4	2
			1	3	0	7	1
			1	5	6	8	5

(4357 x 6)
(4357 x 30)

Bus Stop Division

short division					
		0	5	2	r3
					decimal
					52.25
1	2	6	2	7	
					fraction
					$52\frac{3}{12} / 52\frac{1}{4}$

Fractions/decimals

Rounding

Multiply and Divide

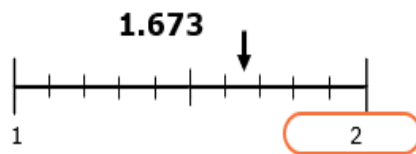
fraction and decimal equivalence

$$\frac{1}{4} = \frac{25}{100} = 0.25$$

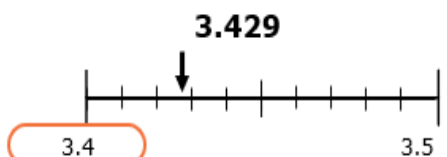
$$\frac{1}{2} = \frac{50}{100} = 0.50$$

$$\frac{3}{4} = \frac{75}{100} = 0.75$$

Round to the nearest whole number



Round to the nearest tenth



multiplying by 10, 100 and 1000

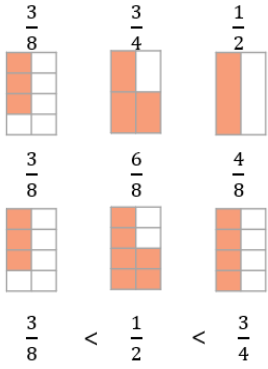
M	HTh	TTh	Th	H	T	O	t	h	th
					1	2	4	5	
				1	2	4	5		
		1	2	4	5				
	1	2	4	5	0				

dividing by 10, 100 and 1000

M	HTh	TTh	Th	H	T	O	t	h	th
				4	2	1			
					4	2	1		
						4	2	1	
						0	4	2	1

Fractions

comparing and ordering fractions



adding fractions with different denominators

First express the fractions as the same denominator

$$\frac{8}{12} + \frac{3}{12} = \frac{11}{12}$$

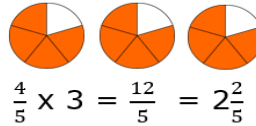


subtracting fractions with different denominators

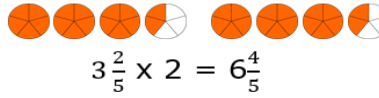
$$\frac{8}{12} - \frac{3}{12} = \frac{5}{12}$$



multiply fractions by whole numbers



multiply mixed numbers by whole numbers



method one:

$$3 \times 2 = 6$$

$$\frac{2}{5} \times \frac{2}{1} = \frac{4}{5}$$

$$6 + \frac{4}{5} = 6\frac{4}{5}$$

method two:

$$\frac{17}{5} \times \frac{2}{1} = \frac{34}{5}$$

$$\frac{34}{5} = 6\frac{4}{5}$$

- 1) Multiply the whole numbers
- 2) Multiply the fraction by the whole number
- 3) Add the two answers together

- 1) Convert the mixed number to an improper fraction
- 2) Multiply the improper fraction by the whole number
- 3) Convert the answer to a mixed number

Percentages

$\frac{1}{2}$	0.5	50%
$\frac{1}{4}$	0.25	25%
$\frac{1}{5}$	0.2	20%
$\frac{2}{5}$	0.4	40%
$\frac{3}{5}$	0.6	60%
$\frac{4}{5}$	0.8	80%
$\frac{3}{10}$	0.3	30%
$\frac{7}{10}$	0.7	70%

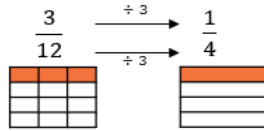
mixed numbers and improper fractions



mixed number improper fraction

$4\frac{2}{5}$ $\frac{22}{5}$

simplifying fractions



Geometry

Angles

3 Dimensional (3D) shapes

angles



acute angle
less than 90°



right angle
exactly 90°

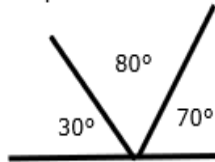


obtuse angle
more than 90°
less than 180°

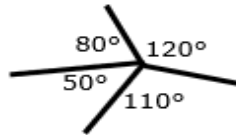


acute angle
more than 180°
less than 360°

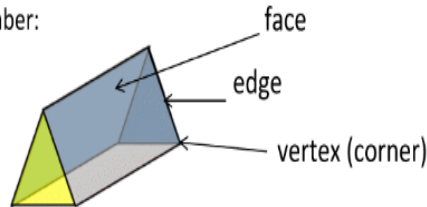
Angles in a straight line add up to 180°



Angles around a point add up to 360°



Remember:



Name: **cube**

F: 6

E: 12

V: 8

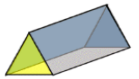


Name: **triangular prism**

F: 5

E: 9

V: 6



Name: **triangular pyramid**

F: 4

E: 6

V: 4

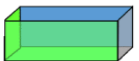


Name: **cuboid**

F: 6

E: 12

V: 8

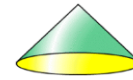


Name: **cone**

F: 1 or 2

E: 0 or 1

V: 0 or 1



Name: **cylinder**

F: 2 or 3

E: 0 or 2

V: 0



Name: **sphere**

F: 0 or 1

E: 0

V: 0



Name: **square pyramid**

F: 5

E: 8

V: 5

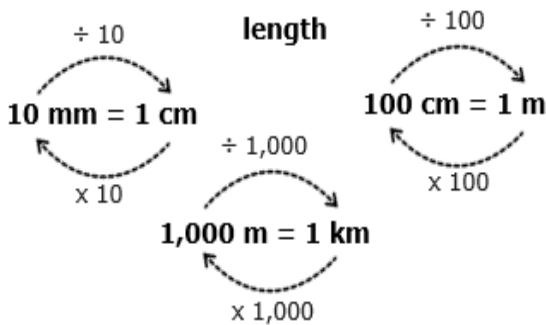


Measurement: conversion

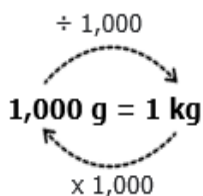
Perimeter and Area

Times tables

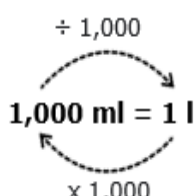
metric units of measure



mass



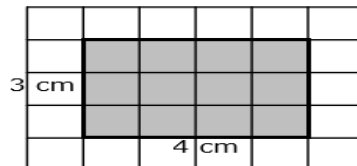
capacity



PerIMeter is the length all the way around the edge of a shape.

Rectangle's perimeter = $2\text{length} + 2\text{width}$

area of rectangles



$$4 \text{ cm} \times 3 \text{ cm} = 12 \text{ cm}^2$$



$$6 \text{ cm} \times 2 \text{ cm} = 12 \text{ cm}^2$$

Area = surface covered.

Rectangle = length \times width

convert units of time

60 seconds = 1 minute
 60 minutes = 1 hour
 24 hours = 1 day
 7 days = 1 week
 12 months = 1 year
 365 days = 1 year **366 leap yr.**

	Pi Street	Subtraction Way	Times Square	Calculation Street	Total Avenue
Bus 1	11:56	12:01	12:12	12:19	12:25
Bus 2	12:05	12:10	12:21	12:28	12:34
Bus 3	12:20	12:25	12:36	12:43	12:49