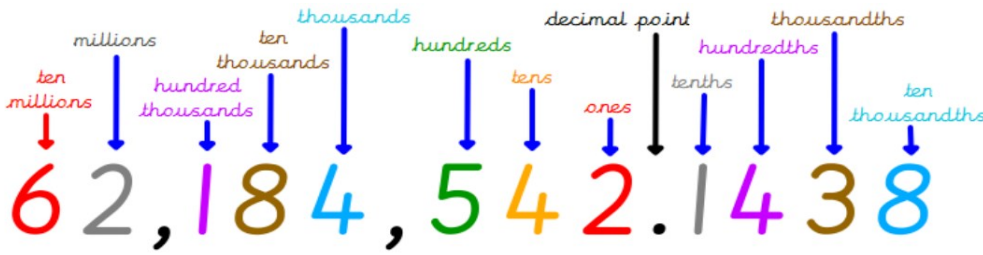




Year 6 Mathematics Core Knowledge Organiser

Place Value Decimals Vocabulary



Term	Definition
factor	a number that divides exactly into another number
common factor	factors of two numbers that are the same
prime number	a number with only 2 factors: 1 and itself
composite number	a number with more than two factors
prime factor	a factor that is prime
multiple	a number in another number's times table
common multiple	multiples of two numbers that are the same
square numbers	the result when a number has been multiplied by itself
cube numbers	the result when a number has been multiplied by itself 3 times

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

BIDMAS

Brackets	$10 \times (4 + 2) = 10 \times 6 = 60$
Indices	$5 + 2^2 = 5 + 4 = 9$
Division	$10 + 6 \div 2 = 10 + 3 = 13$
Multiplication	$10 - 4 \times 2 = 10 - 8 = 2$
Addition	$10 \times 4 + 7 = 40 + 7 = 47$
Subtraction	$10 \div 2 - 3 = 5 - 3 = 2$

Equivalent fractions, decimals and percentages

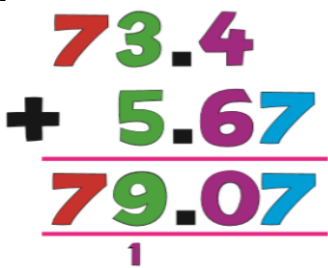


$\frac{1}{100}$	0.01	1%	$\div 100$
$\frac{1}{20}$	0.05	5%	$\div 20$
$\frac{1}{10}$	0.1	10%	$\div 10$
$\frac{1}{5}$	0.2	20%	$\div 5$
$\frac{1}{4}$	0.25	25%	$\div 4$
$\frac{1}{2}$	0.5	50%	$\div 2$
$\frac{3}{4}$	0.75	75%	$\div 4, \times 3$
1	1	100%	$\div 1$

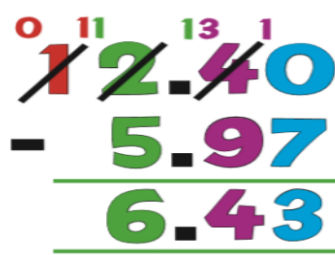
Roman Numerals

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

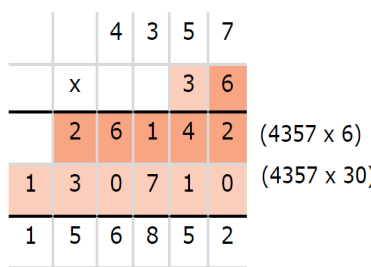
Addition



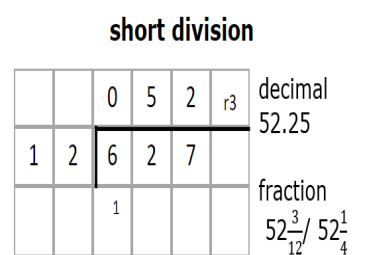
Subtraction



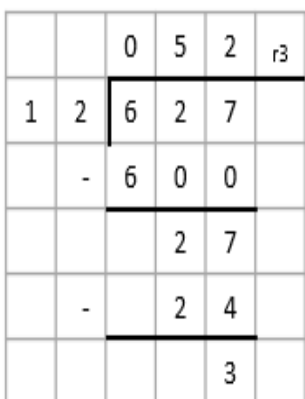
Long Multiplication



Bus Stop Division

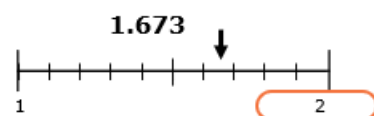


Long Division

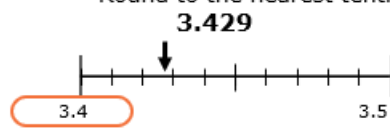


Rounding

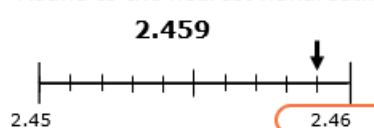
Round to the nearest whole number



Round to the nearest tenth



Round to the nearest hundredth



Multiply and Divide

multiplying by 10, 100 and 1000

M	HT	T	U	T	O	t	h	th
				1	2	4	5	
			1	2	4	5		
		1	2	4	5	0		

dividing by 10, 100 and 1000

M	HT	T	U	T	O	t	h	th
				4	2	1		
			4	2	1			
			4	2	1			
			0	4	2	1		

Fractions : whole from amounts

$\frac{1}{6}$ of 30 = 5

$\frac{1}{6}$ of = 30

mixed numbers and improper fractions

mixed number: $4\frac{2}{5}$

improper fraction: $\frac{22}{5}$

expressing fractions in the same denominator

$\frac{2}{3} = \frac{8}{12}$

$\frac{1}{4} = \frac{3}{12}$

Add

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

$\frac{1}{4} \times \frac{1}{3} = \frac{1}{12}$

$\frac{1}{4} \div 2 = \frac{1}{8}$

Divide

Geometry

Angles

full turn	360°
half turn	180°
right angle	90°
acute angle	< 90°
obtuse angle	> 90°
reflex angle	> 180°
angles on a straight line	180°
angles inside a triangle	180°
angles inside a quadrilateral	360°

Angles

angles in triangle

Angles in a triangle add up to 180°

$95^\circ + 50^\circ + x = 180^\circ$

$145^\circ + x = 180^\circ$

$x = 35^\circ$

angles in a quadrilateral

Angles in a quadrilateral add up to 360°

$90^\circ + 95^\circ + 100^\circ + x = 360^\circ$

$285^\circ + x = 360^\circ$

$x = 75^\circ$

3D shapes

	square-based pyramid	triangular-based pyramid	triangular prism
faces (the flat sides)	5	4	5
edges	8	6	9
vertices (the points where the edges meet)	5	4	6

Volume = the amount of space a 3D shape takes up, usually measured in cm³ or m³

Volume of a cuboid = length x width x height

Measurement: Conversions

metric units of measure

length

$10 \text{ mm} = 1 \text{ cm}$ (÷ 10, × 10)

$100 \text{ cm} = 1 \text{ m}$ (÷ 100, × 100)

$1,000 \text{ m} = 1 \text{ km}$ (÷ 1,000, × 1,000)

mass

$1,000 \text{ g} = 1 \text{ kg}$ (÷ 1,000, × 1,000)

capacity

$1,000 \text{ ml} = 1 \text{ l}$ (÷ 1,000, × 1,000)

convert between miles and kilometres

$1 \text{ mile} \approx 1.6 \text{ km}$

$5 \text{ miles} \approx 8 \text{ km}$

miles $\xrightarrow{\div 5}$ km $\xrightarrow{\times 8}$ miles

km $\xrightarrow{\div 8}$ miles $\xrightarrow{\times 5}$ km

Perimeter/Area/Volume

area and perimeter of rectangles

Area = length x width

Perimeter = 2L + 2W

Area = $5 \times 3 = 15 \text{ cm}^2$

Perimeter = $(5 \times 2) + (3 \times 2) = 16 \text{ cm}^2$

volume of cuboids

width x length x height

$6 \times 2 \times 3 = 36 \text{ cm}^3$

Statistics: Average

2 6 1 3 6 6 = 24

Mean = 4

$24 \div 6 = 4$

Mean = Total ÷ number of items

The mean of this set of numbers is 4