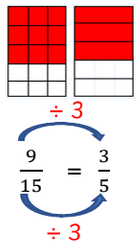
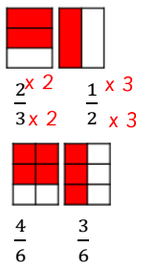
Use common factors to simplify fractions.

1) Find a number that both the numerator and the denominator can be divided by (in this case, 3)
2) Divide both the numerator and denominator by that number.



Use multiples to express fractions in the same denominator

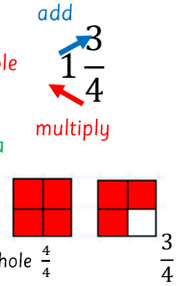
1) Find a number that is a common multiple of both denominators (in this case, 6)
2) Multiply both fractions by the relevant multiple to reach the new denominator



Convert mixed numbers to improper fractions

1)Multiply the denominator by the whole number.
2) Add the numerator
3) Write the answer as a numerator over the existing denominator

$1\frac{3}{4} = \frac{7}{4}$



Convert improper fractions to mixed numbers

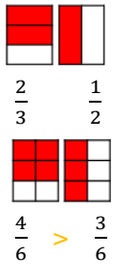
1) See how many times the denominator will go into the numerator (once, with a remainder of 3)
2) Write the answer (1) as the whole number
3) Write the remainder (3) as the numerator over the existing denominator.

$\frac{7}{4} = 1\frac{3}{4}$



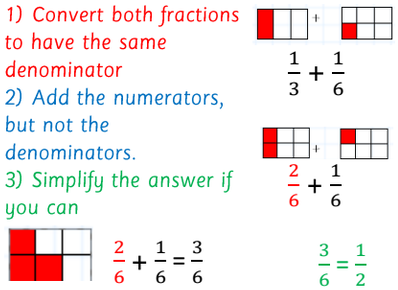
Compare fractions

1) Decide on a common multiple of the two denominators to become the new denominator
2) Convert both fractions to have the same denominator.
3) Decide which symbol to use– which fraction is larger?



Add proper fractions

1) Convert both fractions to have the same denominator
2) Add the numerators, but not the denominators.
3) Simplify the answer if you can



Add mixed numbers (method 1)

$1\frac{3}{4} + 1\frac{3}{8}$

1) Change any mixed numbers to improper fractions.
2) Convert both fractions to have the same denominator
3) Add the numerators together.
4) Change any improper fractions back to mixed numbers
5) Simplify the answer if you can.

$\frac{7}{4} + \frac{11}{8}$
$\frac{14}{8} + \frac{11}{8}$
$\frac{14}{8} + \frac{11}{8} = \frac{25}{8}$
$\frac{25}{8} = 3\frac{1}{8}$

Add mixed numbers (method 2)

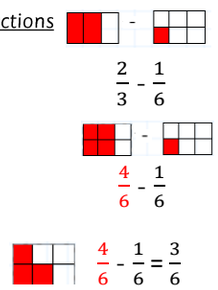
$1\frac{3}{4} + 1\frac{3}{8}$

1) Add the two whole numbers together.
2) Convert both fractions to have the same denominator.
3) Add the numerators together.
4) Change any improper fractions back to mixed numbers
5) Add together your two answers.
6) Simplify the answer if you can.

1 + 1=2
$\frac{6}{8} + \frac{3}{8}$
$\frac{6}{8} + \frac{3}{8} = \frac{9}{8}$
$\frac{9}{8} = 1\frac{1}{8}$
$2 + 1\frac{1}{8} = 3\frac{1}{8}$

Subtract proper fractions

1) Convert both fractions to have the same denominator
2) Subtract the numerators, but not the denominators.
3) Simplify the answer if you can



Subtract mixed numbers

$2\frac{3}{4} - 1\frac{1}{8}$

1) Change any mixed numbers to improper fractions.
2) Convert both fractions to have the same denominator.
3) Subtract the second numerator from the first.
4) Change any improper fractions back to mixed numbers.
5) Simplify the answer if you can.

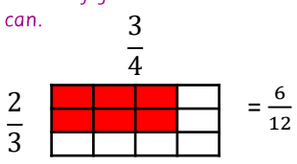
$\frac{11}{4} - \frac{9}{8}$
$\frac{22}{8} - \frac{9}{8}$
$\frac{22}{8} - \frac{9}{8} = \frac{13}{8}$
$\frac{13}{8} = 1\frac{5}{8}$

Multiply pairs of proper fractions

$\frac{3}{4} \times \frac{2}{3}$

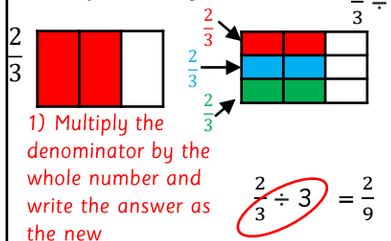
1) Multiply the numerators
2) Multiply the denominators
3) Simplify the answer if you can.

$\frac{3}{4} \times \frac{2}{3} = \frac{6}{12}$
$\frac{6}{12} = \frac{1}{2}$



Divide fractions by whole numbers

$\frac{2}{3} \div 3$



1) Multiply the denominator by the whole number and write the answer as the new denominator.
2) Simplify the answer if you can.

$\frac{2}{3} \div 3 = \frac{2}{9}$

Multiply fractions by whole numbers



$\frac{3}{4} \times 5$

1) Write the whole number as a fraction over 1.
2) Multiply the numerators
3) Multiply the denominators
4) Change any improper fractions back to mixed numbers
5) Simplify the answer if you can

$\frac{3}{4} \times \frac{5}{1}$
$\frac{3}{4} \times \frac{5}{1} = \frac{15}{4}$
$\frac{15}{4} = 3\frac{3}{4}$



Multiply mixed numbers by whole numbers (method 1)

$3\frac{3}{4} \times 5$

1) Change any mixed numbers to improper fractions
2)Write the whole number as a fraction over 1.
3) Multiply the numerators
4) Multiply the denominators
5) Change any improper fractions back to mixed numbers.
6) Simplify the answer if you can.

$\frac{15}{4} \times 5$
$\frac{15}{4} \times \frac{5}{1}$
$\frac{15}{4} \times \frac{5}{1} = \frac{75}{4}$
$\frac{75}{4} = 18\frac{3}{4}$

Multiply mixed numbers by whole numbers (method 2)

$3\frac{3}{4} \times 5$

1) Multiply the two whole numbers together.
2) Multiply the fraction by the whole number.
3) Change any improper fractions back to mixed numbers.
4) Add your two answers together.
5) Simplify the answer if you can.

$3 \times 5 = 15$
$\frac{3}{4} \times \frac{5}{1} = \frac{15}{4}$
$\frac{15}{4} = 3\frac{3}{4}$
$15 + 3\frac{3}{4} = 18\frac{3}{4}$

Prime numbers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

A prime number is a whole number greater than 1 with no divisors except 1 and itself.
2 is the only even prime number.
There are no prime numbers that end in 5, except for 5.
The digits can't add up to 3, except 3.

Fraction	Decimal	Percentage
$\frac{1}{8}$	0.125	12.5%
$\frac{2}{8}$ or $\frac{1}{4}$	0.25	25%
$\frac{3}{8}$	0.375	37.5%
$\frac{4}{8}$ or $\frac{1}{2}$	0.5	50%
$\frac{5}{8}$	0.625	62.5%
$\frac{6}{8}$ or $\frac{3}{4}$	0.75	75%
$\frac{7}{8}$	0.875	87.5%
$\frac{8}{8}$ or 1 whole	1	100%

A square number is the product of multiplying a number by itself (e.g. 3 x 3)

$1^2 = 1$
$2^2 = 4$
$3^2 = 9$
$4^2 = 16$
$5^2 = 25$
$6^2 = 36$
$7^2 = 49$
$8^2 = 64$
$9^2 = 81$
$10^2 = 100$
$11^2 = 121$
$12^2 = 144$

A cube number is the product of multiplying a number by itself, then by itself again (e.g. 2 x 2 x 2)

$1^3 = 1$
$2^3 = 8$
$3^3 = 27$
$4^3 = 64$
$5^3 = 125$
$6^3 = 216$
$7^3 = 343$
$8^3 = 512$
$9^3 = 729$
$10^3 = 1000$
$11^3 = 1331$
$12^3 = 1728$

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Convert metric units

length

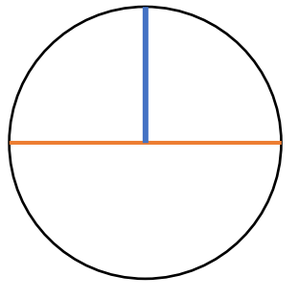
÷ 10 / x 10: 10mm = 1cm
÷ 100 / x 100: 100cm = 1m
÷ 1000 / x 1000: 1000m = 1km

capacity

÷ 1000 / x 1000: 1000ml = 1l

mass

÷ 1000 / x 1000: 1000g = 1kg

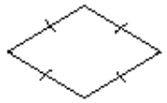


The circumference is the distance around the outside of the circle.
The diameter is a straight line running from one point of the circle to another, going straight through middle. It is twice the radius.
The radius is a straight line running from the edge of a circle the middle. It is half the diameter.

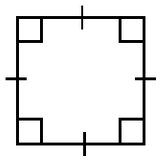
Quadrilaterals



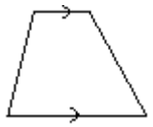
Rectangle (4 right angles, opposite sides equal)



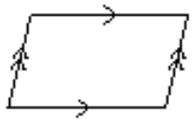
Rhombus (parallelogram with 4 equal sides)



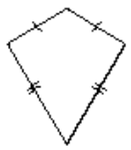
Square (4 right angles and 4 equal sides)



Trapezium (two sides are parallel)

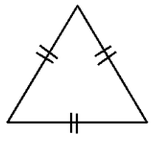


Parallelogram (two pairs of parallel sides and opposite sides equal)

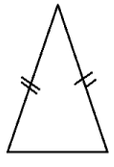


Kite (two pairs of adjacent sides of the same length)

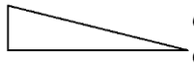
Triangles



Equilateral (3 equal sides and 3 equal angles)



Isosceles (2 equal sides and 2 equal angles)



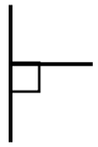
Scalene (no equal sides and no equal angles)

Polygons

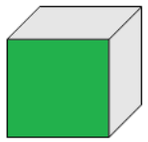
3 sides	Triangle
4 sides	Quadrilateral
5 sides	Pentagon
6 sides	Hexagon
7 sides	Heptagon
8 sides	Octagon
9 sides	Nonagon
10 sides	Decagon



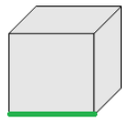
parallel lines



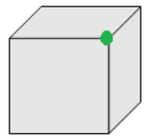
perpendicular lines



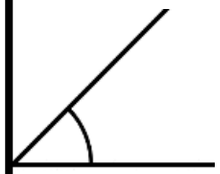
Faces are the surfaces of the shape



Edges are the line segments where two faces meet



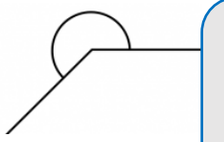
Vertices are the places where 3 or more edges meet



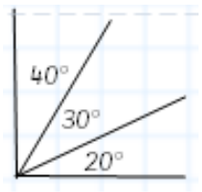
Acute angles measure less than 90°



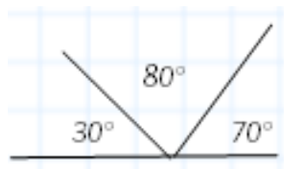
Obtuse angles measure greater than 90°and less than 180°



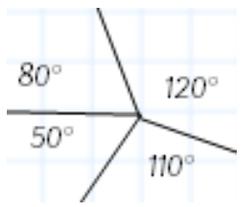
Reflex angles measure greater than 180°and less than 360 °



Angles in a right angle always add up to 90°



Angles on a straight line (and in a triangle) always add up to 180°



Angles around a point (and in a quadrilateral) always add up to 360°

Cube 6 square faces 12 edges 8 vertices	**Cuboid** 6 faces 12 edges 8 vertices	**Sphere** 1 curved surface 0 edges 0 vertices
Tetrahedron 4 triangular faces 6 edges 4 vertices	**Triangular prism** 5 faces 9 edges 6 vertices	**Cylinder** 2 circular faces 1 curved surface 2 curved edges 0 vertices
Cone 1 circular face 1 curved surface 1 curved edge 1 apex	**Square-based pyramid** 5 faces 8 edges 5 vertices	**Octahedron** 8 faces 12 edges 6 vertices

@SarahFarrellKS2