Name: ..... Date: .....

Maths revision booklet

Times table chart

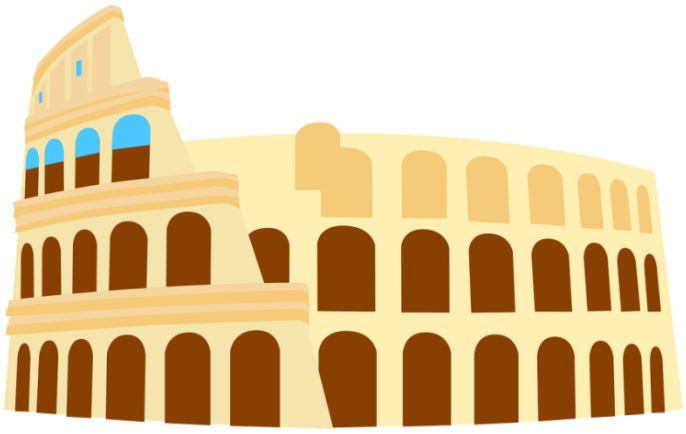
x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Know your tables!

Daily practise to keep you sharp will make you a confident mathematician.
The numbers highlighted in orange are square numbers.

Roman numerals

1	I	30	XXX
2	II	40	XL
3	III	50	L
4	IV	60	LX
5	V	70	LXX
6	VI	80	LXXX
7	VII	90	XC
8	VIII	100	C
9	IX	500	D
10	X	1000	M
20	XX		

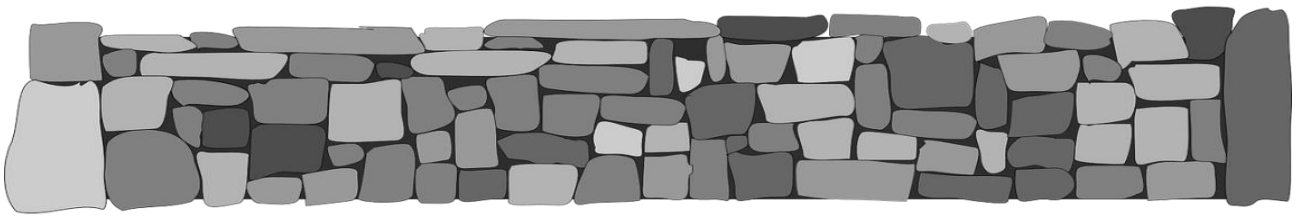


Fraction wall

Use this wall to help you understand equivalence between fractions (fractions that are equal in value).

Using this wall, you can see that $\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{5}{10} = \frac{6}{12}$.

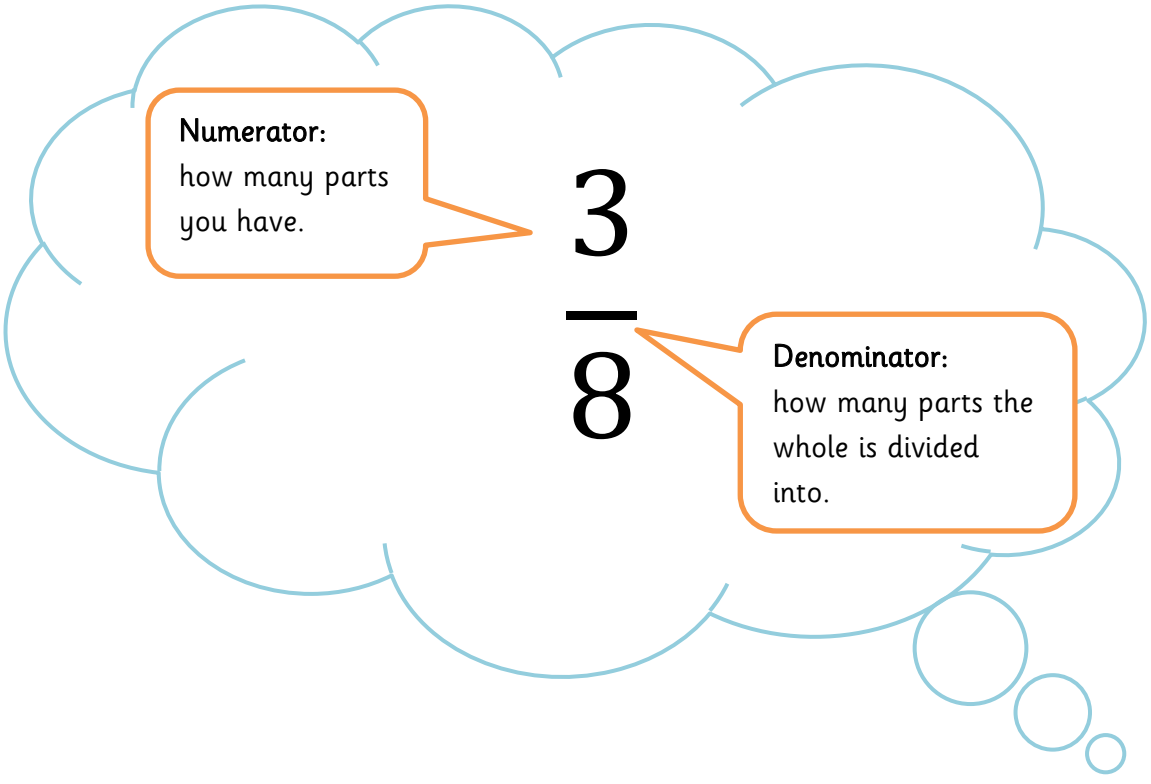
$\frac{1}{1}$											
$\frac{1}{2}$						$\frac{1}{2}$					
$\frac{1}{3}$				$\frac{1}{3}$				$\frac{1}{3}$			
$\frac{1}{4}$			$\frac{1}{4}$			$\frac{1}{4}$			$\frac{1}{4}$		
$\frac{1}{5}$		$\frac{1}{5}$			$\frac{1}{5}$			$\frac{1}{5}$			$\frac{1}{5}$
$\frac{1}{6}$			$\frac{1}{6}$			$\frac{1}{6}$			$\frac{1}{6}$		
$\frac{1}{8}$			$\frac{1}{8}$			$\frac{1}{8}$			$\frac{1}{8}$		
$\frac{1}{10}$			$\frac{1}{10}$			$\frac{1}{10}$			$\frac{1}{10}$		
$\frac{1}{12}$			$\frac{1}{12}$			$\frac{1}{12}$			$\frac{1}{12}$		



Fractions, decimals and percentages

Knowing these equivalences off by heart is very useful.

Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	50%
$\frac{1}{4}$	0.25	25%
$\frac{3}{4}$	0.75	75%
$\frac{1}{5}$	0.2	20%
$\frac{1}{10}$	0.1	10%



Rhymes for fraction operations

If adding or subtracting is your aim,
The bottom numbers must be the same!
Change the bottom using multiply or divide,
But the same to the top must be applied.
And don't forget to simplify,
Before its time to say goodbye.

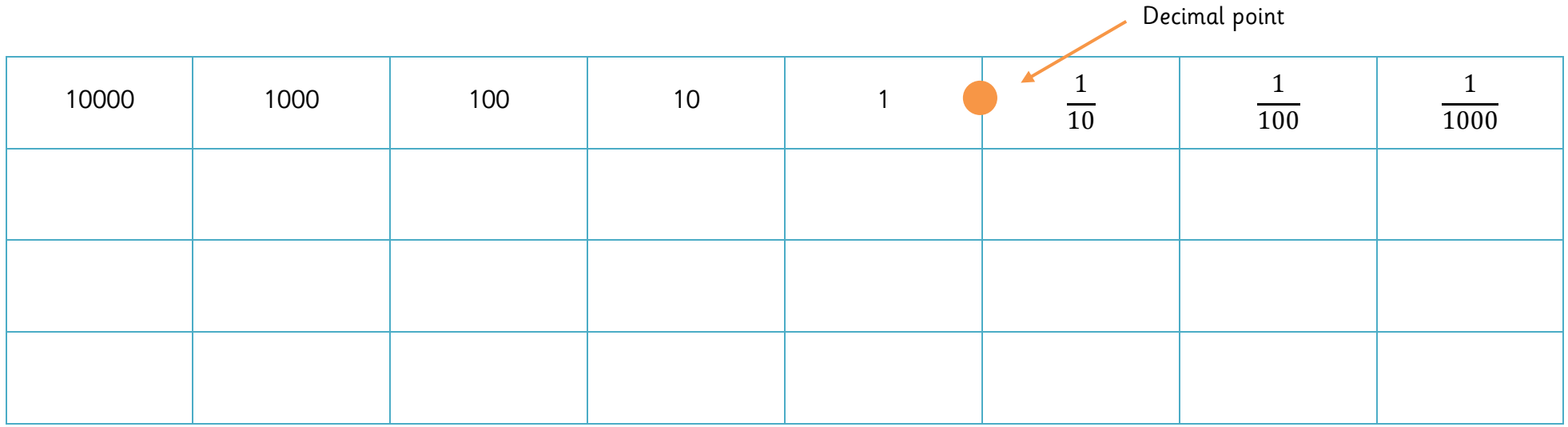
Multiplying fractions – no big problem,
Top times top over bottom times bottom.
And don't forget to simplify,
Before it's time to say goodbye.

Dividing fractions, as easy as pie,
Flip the second fraction, then multiply.
And don't forget to simplify,
Before it's time to say goodbye.

Divisibility rules

A number is divisible by:
100 if the last 2 digits are 00
25 if the last 2 digits are 00, 25, 50 or 75
10 if the last digit is 0
2 if the last digit is 0, 2, 4, 6 or 8
3 if the sum of the digits is divisible by 3
4 if the last 2 digits are divisible by 4
5 if the last digit is 0 or 5
6 if the number is even and divisible by 3
8 if the last 3 digits are divisible by 8
9 if the sum of the digits is divisible by 9

Multiplying and dividing by multiples of 10



Multiplying

X 10 digits move LEFT 1 place

X 100 digits move LEFT 2 places

X 1000 digits move LEFT 3 places

Dividing

÷ 10 digits move RIGHT 1 place

÷ 100 digits move RIGHT 2 places

÷ 1000 digits move RIGHT 3 places

Measures

Learn these measurements - they are **very** useful!

Capacity

1 litre = 1000 millilitres or 1L = 1000 ml

Mass

1 kilogram = 1000 grams **or** 1kg = 1000g

1/2 kg = 0.5kg = 500g

1/4 kg = 0.25kg = 250g

3/4 kg = 0.75kg = 750g

Length

1 kilometre = 1000 metres **or** 1km = 1000m

1 metre = 100 centimetres **or** 1m = 100cm

1 centimetre = 10 millimetres **or** 1cm = 10mm

Conversions between metric and imperial units

1 litre = 1¾ pints (approximately 2 pints)

4.5 litres = 1 gallon or 8 pints

1 kilogram = 2.2lb (approximately 2lb)

30 grams = 1oz

1.6 kilometres = 1 mile

Money

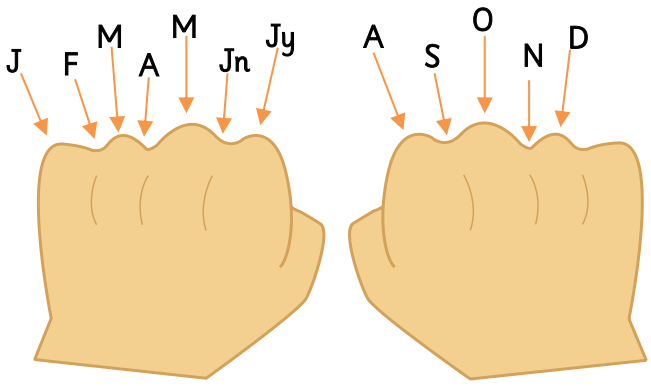
£1 = 100p
10p = £0.10
1p = £0.01
50p = £0.50
25p = £0.25
10 x 10p = £1
5 x 20p = £1

Time

One year = 365 days
One leap year (every 4 years) = 366 days
12 months in a year
A fortnight = 2 weeks
A week = 7 days
A day = 24 hours
An hour = 60 minutes
A minute = 60 seconds

30 days have September,
April, June and
November. All the rest
have 31.

Excepting February which
has 28 days clear and 29
each leap year.



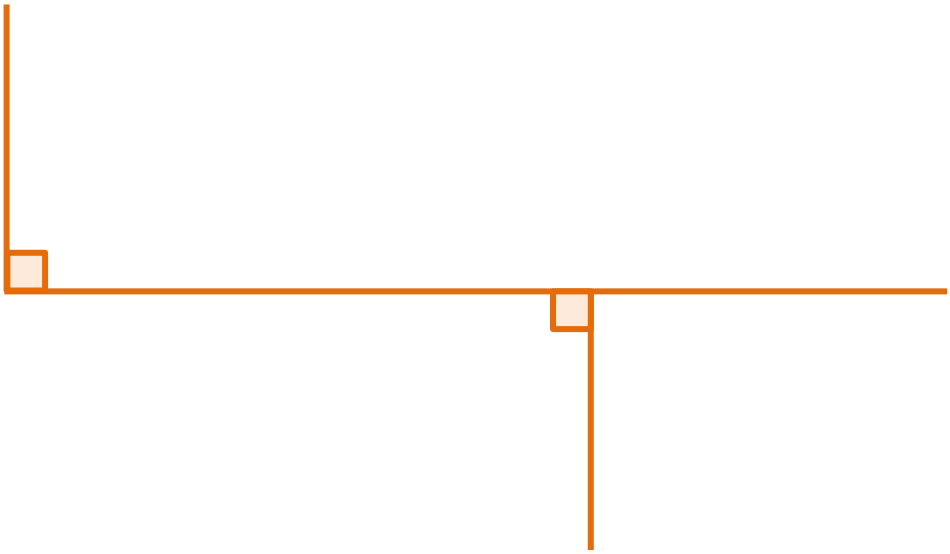
Geometry

Parallel means:

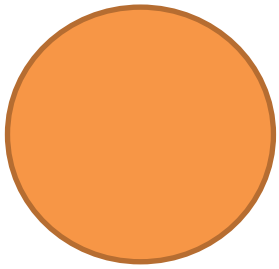
Lines which never cross and stay the same distance apart.

Perpendicular means:

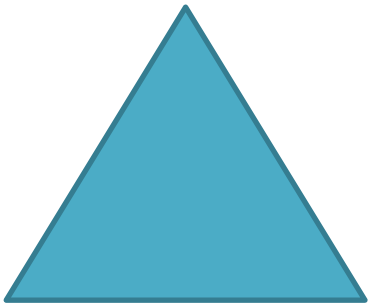
Lines which meet to form a right angle (90°).



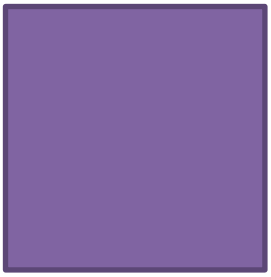
2D shapes



Circle
1 curved side
No corners

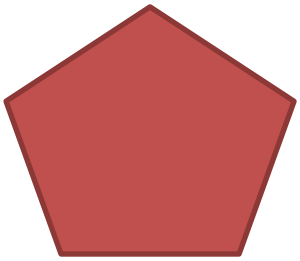


Triangle
3 straight sides
3 corners

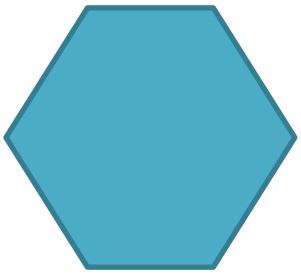


Square
4 right angles
4 equal straight sides
4 corners

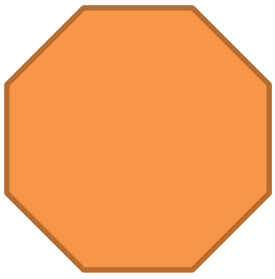
Rectangle
4 right angles
4 straight sides
4 corners



Pentagon
5 straight sides
5 corners

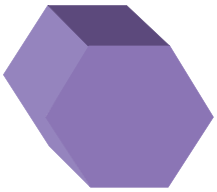
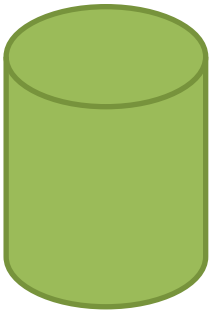
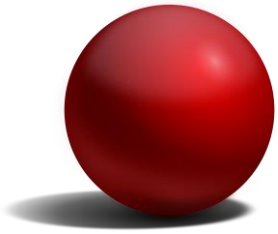
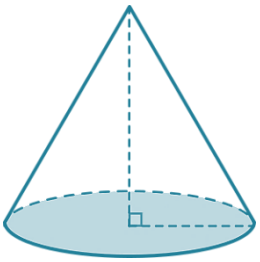
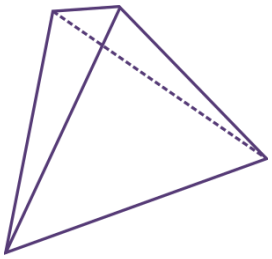
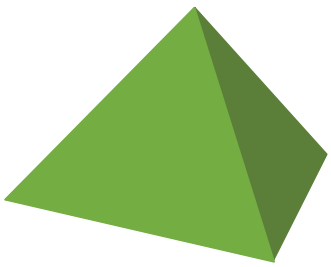
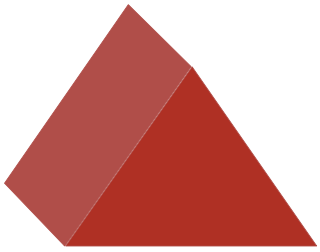


Hexagon
6 straight sides
6 corners

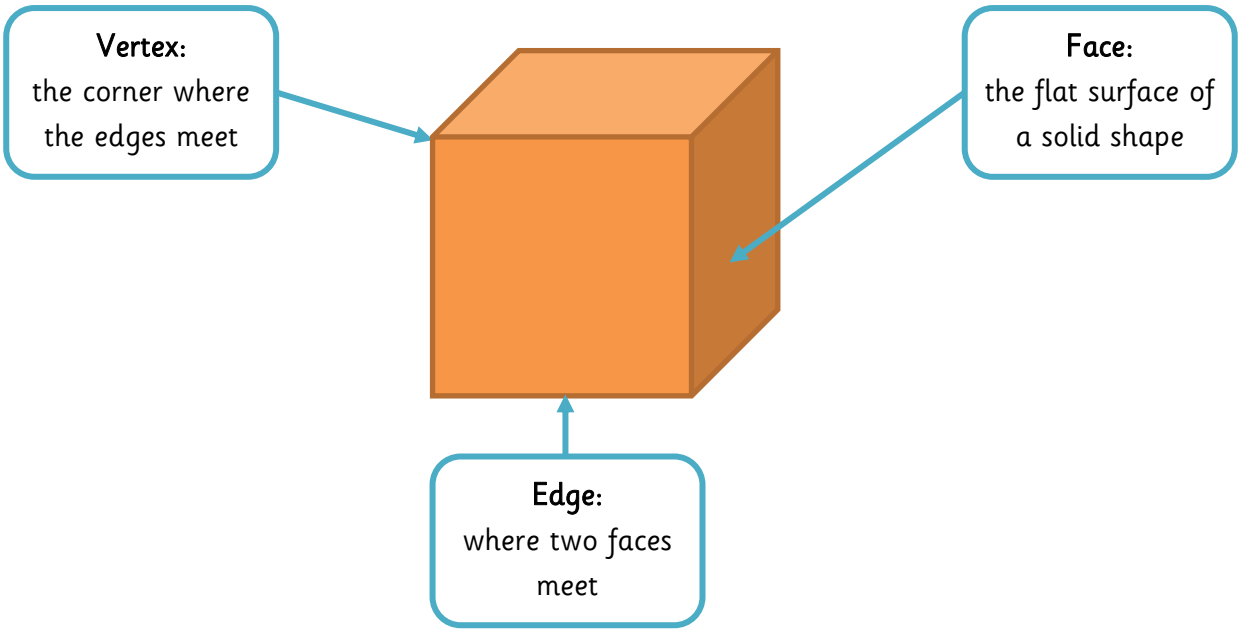


Octagon
8 straight sides
8 corners

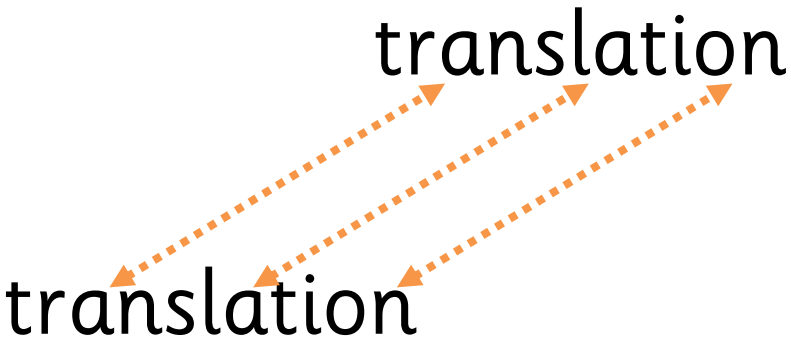
3D shapes

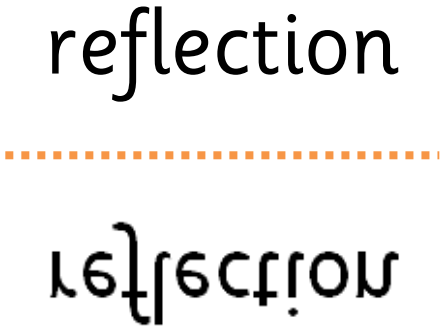
 Cube	 Cuboid	 Hexagonal prism
 Cylinder	 Sphere	 Cone
 Tetrahedron	 Pyramid	 Triangular Prism

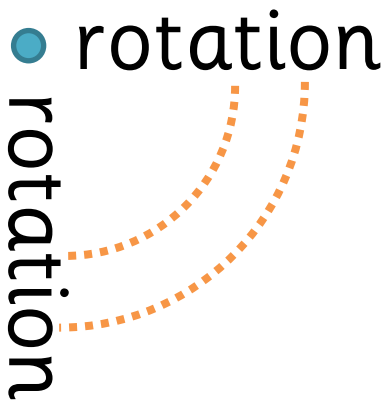
Features of 3D shapes



Transformations







A glossary of maths words

Angles	Angles are formed when two straight lines meet. Measure using degrees (°).
Acute angles	Angles measuring less than 90 degrees.
Right angles	Measure exactly 90 degrees.
Obtuse angles	Angles greater than 90 degrees but less than 180 degrees.
Reflex angles	Angles greater than 180 degrees.
Area	The amount of surface a shape takes up. Measured in centimetres squared (cm^2).
Calculate	Work out the amount or number of something.
Capacity	The amount that something can hold. It can be measured in litres, millilitres or in cubic centimetres e.g. $100cm^3$
Century	100 years
Circumference	The perimeter of a circle.
Decade	10 years
Degree	The unit of measurement we use for measuring angles.
Diameter	Is the line crossing the circle, from one point on the circumference to another and passes through the centre. It is twice of the length of the radius.
Difference	To find the difference between two numbers, you need to take the smaller number away from the larger one. E.g. the difference between 10 and 4 is 6.
Equilateral triangle	A triangle of equal lengths and equal angles (all equal 60°).
Equivalent	Having the same value e.g. $\frac{1}{2}$ is equivalent to $\frac{3}{6}$.
Factors	A factor is a whole number which will divide exactly into another whole number. E.g. the factors of 12 are 1, 2, 3, 4, 6 and 12.
Inverse operation	If you have a calculation with a missing number, you can use the inverse operation to solve it. + and – are the inverse of each other X and ÷ are the inverse of each other
Mean	To find the mean of a set of numbers, you add all the numbers together and then divide by the number of results you have.

Median	Arrange the data in order from smallest to largest. The median is the number in the middle. NB if there are two numbers in the middle, find the mean of these.
Mode	The number that appears the most frequently in a set of data.
Multiple	The multiples of a number are all the numbers that can be divided by that number without leaving a remainder. E.g. the multiples of 3 are 3, 6, 9, 12, 15 etc.
Percentage (%)	Means 'out of 100' 20% = $\frac{20}{100}$
Perimeter	The distance around the outside of a shape.
Polygon	A closed 2D shape with straight sides.
Prime numbers	Numbers which will divide exactly only by themselves and 1. These are the prime numbers to 30: 2, 3, 7, 11, 13, 17, 19, 23, 29
Product	The answer when numbers have been multiplied. E.g. the product of 3 and 4 is 12.
Quadrilateral	A 2D shape with four straight sides.
Radius	The radius of the circle is a straight line drawn from the centre to the circumference.
Range	The range is the **difference** between the biggest and the smallest number. To work out the range: • Put the numbers in order • Subtract the smallest number from the biggest number.
Right-angled triangle	A triangle where one of the angles is a right angle (90°).
Scalene triangle	A triangle where no sides are the same length and no angles are the same.
Square number	The product when a number is multiplied by itself. Square numbers to 100 are: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100.
Sum	When numbers have been added together. E.g. the sum of 3 and 4 is 7.
Vertex (vertices)	A point where two or more straight lines meet.
Volume	A measure of the amount of 3D space which is occupied by an object (measured in cm^3).