

Multiplication and division vocabulary

Term	Definition	Example
factor	a number that divides exactly into another number	factors of 12 = 1, 2, 3, 4, 6, 12
common factor	factors of two numbers that are the same	common factors of 8 and 12 = 1, 2, 4
prime number	a number with only 2 factors: 1 and itself	2, 3, 5, 7, 11, 13, 17, 19...
composite number	a number with more than two factors	12 (it has 6 factors)
prime factor	a factor that is prime	prime factors of 12 = 2, 3
multiple	a number in another number's times table	multiples of 9 = 9, 18, 27, 36...
common multiple	multiples of two numbers that are the same	common multiples of 4 and 6 = 12, 24...
square numbers	the result when a number has been multiplied by itself	25 ($5^2 = 5 \times 5$) 49 ($7^2 = 7 \times 7$)
cube numbers	the result when a number has been multiplied by itself 3 times	8 ($2^3 = 2 \times 2 \times 2$) 27 ($3^3 = 3 \times 3 \times 3$)

Roman numerals

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

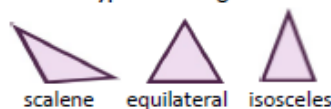
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2D shapes

Name	No. of sides
quadrilateral	4
pentagon	5
hexagon	6
heptagon	7
octagon	8
nonagon	9
decagon	10

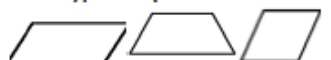
polygon = shape with straight sides
 regular = all sides/angles the same
 irregular = sides/angles not same

Types of triangle



scalene equilateral isosceles

Types of quadrilateral



parallelogram trapezium rhombus

AREA

is the amount of space inside a 2D shape usually measured in cm^2 or m^2 .

Area of a triangle
 = (base x height) $\div$ 2
 Area of a parallelogram
 = base x height

(Height = perpendicular height)

Measurement conversions

Month	Days
January	31
February	28 (29 in leap year)
March	31
April	30
May	31
June	30
July	31
August	31
September	30
October	31
November	30
December	31
1 year = 365 days ($\approx$ 52 weeks)	
Leap year = 366 days	

1 centimetre	10mm
1 metre	100cm
1 kilometre	1,000 m
1 mile	1.6 km
1 kilometre	0.625 ($\frac{5}{8}$) mile
1 kilogram	1,000 grams
1 litre	1,000 millilitres

Co-ordinates

Read co-ordinates along the x axis (horizontal) first, then the y axis (vertical). E.g. (3, -4) = go right 3, down 4.

Fractions, decimals & 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, x3
1	1	100%	$\div$ 1

Angles

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

Shape vocabulary

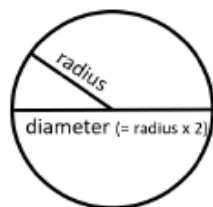
perimeter = measure around the edge (circumference = perimeter of a circle)

horizontal line

parallel lines

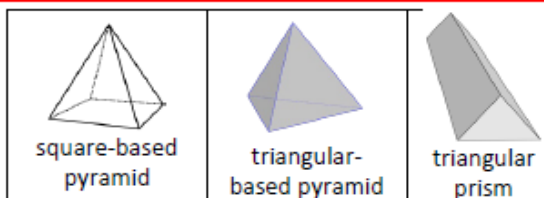
vertical line

perpendicular lines
(at right angles)



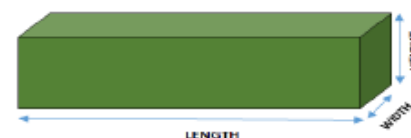
diameter (= radius x 2)

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 cm^3 or m^3



Volume of a cuboid =
length x width x height

The mean

The mean is a type of average. To find the mean, add up all the numbers and divide by how many there are. E.g. the mean of 4, 5, 3, 4 is 4.
(Because $4 + 5 + 3 + 4 = 16$, and $16 \div 4 = 4$)

Add and Subtract Whole Numbers

Column Method

	4	5	8	6	4
+	2	3	4	9	7
	6	9	3	6	1
		1	1	1	

Starting with the ones, add each column in turn.
Regroup tens, hundreds, thousands, ten thousands as required.

	3	5	6	13	12
-		3	4	7	6
	3	2	2	6	6

Starting with the ones, subtract each column in turn.
Exchange tens, hundreds, thousands and/or ten thousands as required.

Short Division

Start from the left.

		4	4	0	5
12	5	2	8	6	0

$5 \div 12 = 0 \text{ r}5$
 $52 \div 12 = 4 \text{ r}4$
 $48 \div 12 = 4$
 $6 \div 12 = 0 \text{ r}6$

Long Division

		1	2	0	r	3
14	1	6	8	3		
	1	4	0	0		
		2	8	3		
		2	8	0		
				3		

Multiply up to 4-digit by 2-digit

1	8	2	
	1	5	4
x		2	6
	9	2	4
3	0	8	0
4	0	0	4
1	1		

Start with the ones.
 $154 \times 6 = 924$
 $154 \times 20 = 3080$
 $3080 + 924 = 4004$

Common Factors

Factors of 48

1	2	3	4	6	8	12	16	24	48
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Factors of 30

1	2	3	5	6	10	15	30
---	---	---	---	---	----	----	----

Common factors: 1, 2, 3, 6

Common Multiples

Multiples of 3

3	...	18	21	24	...	39	42
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Multiples of 7

7	14	21	28	35	42
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Common multiples: 21, 42...

Primes

A prime number has only 1 and itself as factors: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43

A composite number has factors other than 1 and itself.

Squares and Cubes

Square numbers result from a number being multiplied by itself (e.g. $5 \times 5 = 25$):

1, 4, 9, 16, 25, 36, 49, 64, 81, 100

Cube numbers result from a number being multiplied by itself twice ($2 \times 2 \times 2 = 8$):
1, 8, 27, 64, 125

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Mental Calculations and Estimation

Order of calculations:

$50 \times 34 \times 2 = 50 \times 2 \times 34 = 100 \times 34 = 3400$

Money: $\pounds 8.99 + \pounds 3.49 = \pounds 12.48$

Use $\pounds 9 + \pounds 3.50 = \pounds 12.50$ and subtract 2p

Estimate on a number line



Subdivide line to estimate: 17

Reason from Known Facts

$90 \div 10 = 9$ so $90 \div 20 = 4.5$ and $90 \div 5 = 18$

$16 \times 9 = 144$ so $1.6 \times 9 = 14.4$

$4352 \div 17 = 256$

so $256 \times 18 = 4352 + 256 = 4608$

$3786 + 2850 = 6636$

so $4786 + 2850 = 7636$

and $2786 + 3850 = 6636$

and $8636 - 3786 = 4850$

Order of Operations

B	Brackets	$10 \times (4 + 2) = 10 \times 6 = 60$
O	Order	$5 + 2^2 = 5 + 4 = 9$
D	Division	$10 \div 6 \div 2 = 10 \div 3 = 13$
M	Multiplication	$10 - 4 \times 2 = 10 - 8 = 2$
A	Addition	$10 \times 4 + 7 = 40 + 7 = 47$
S	Subtraction	$10 \div 2 - 3 = 5 - 3 = 2$

Key Vocabulary

Add

Total

Make

Plus

Sum

More

Altogether

Difference

Leave

Subtract

Difference between

Less

Minus

Take away

Mentally, Orally

Column Addition

Column Subtraction

Estimate

Inverse operation

Solve problems

Number facts

Place Value

Complex