YEAR 5 MATHS KNOWLEDGE ORGANISER

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 = 5x5) 49 (7^2 = 7x7)
cube numbers	the result when a number has been multiplied by itself 3 times	8 (2^3 = 2x2x2) 27 (3^3 = 3x3x3)

Fractions, decimals & percentages

$1/100$	0.01	1%	÷ 100
$1/20$	0.05	5%	÷ 20
$1/10$	0.1	10%	÷ 10
$1/5$	0.2	20%	÷ 5
¼	0.25	25%	÷ 4
½	0.5	50%	÷ 2
¾	0.75	75%	÷ 4, x3
1	1	100%	÷ 1

4 → Numerator
— → Vinculum
7 → Denominator

Shape vocabulary

perimeter = measure around the edge

horizontal line

vertical line

parallel lines

perpendicular lines (at right angles)

- vertex/ vertices
- edge (curved or flat)
- area
- volume

Roman numerals

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

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
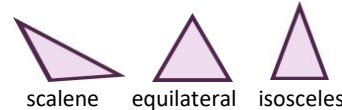
AREA

is the amount of space inside a 2D shape usually measured in cm² or m².

Area of a triangle = (base x height) ÷ 2
Area of a parallelogram = base x 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 (≈ 52 weeks)
Leap year = 366 days

1 **cent**imetre	10mm
1 metre	100cm
1 **kilo**metre	1,000 m
1 mile	1.6 km
1 kilometre	0.625 ($5/8$) mile
1 **kilo**gram	1,000 grams
1 litre	1,000 **milli**litres

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.
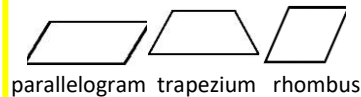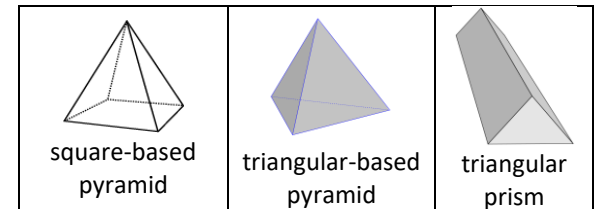
3D shapes

	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

HEIGHT
LENGTH
WIDTH

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 ÷ 4 = 4)

243,601

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
	100,000 100,000	10,000 10,000 10,000 10,000	1,000 1,000 1,000	100 100 100 100 100 100		1

Ones		Tenths	Hundredths	Thousandths
	.	$\frac{1}{10}$ $\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$ $\frac{1}{1000}$ $\frac{1}{1000}$
0	.	2	1	3

Ones		Tenths	Hundredths	Thousandths
1	.		$\frac{1}{100}$ $\frac{1}{100}$	$\frac{1}{1000}$ $\frac{1}{1000}$
1	.	0	2	2

Mixed Numbers

Mixed numbers contain a whole number and a fraction.

whole → $2\frac{1}{4}$ ← fraction
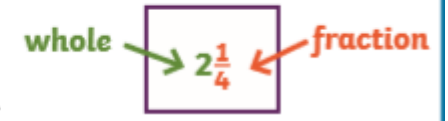
Improper Fractions

An improper fraction has a numerator which is greater than or equal to the denominator.
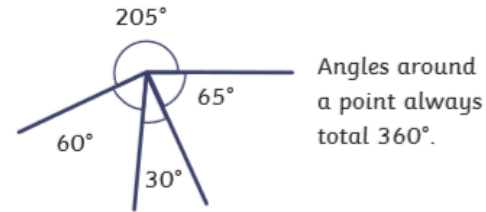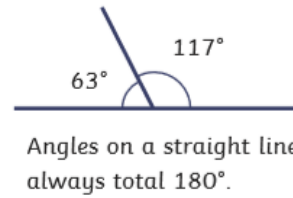
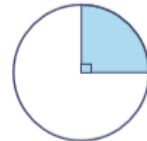$\frac{5}{3}$

Rounding

Rounding to the nearest 10

20	21	22	23	24	25	26	27	28	29	30

← round down   round up →

Rounding to the nearest 1000

2000 ←	2499	2500	→ 3000

round down   round up

Rounding to the nearest 100 000

200 000 ←	249 999	250 000	→ 300 000

round down   round up

117° 63°

Angles on a straight line always total 180°.

205° 65° 60° 30°
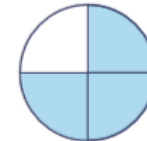
Angles around a point always total 360°.

Multiples of 90° can be used as descriptions of a turn.

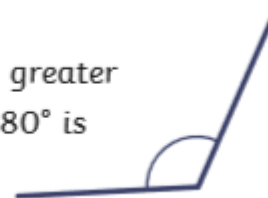$\frac{1}{4}$ turn = 90° $\frac{1}{2}$ turn = 180° $\frac{3}{4}$ turn = 270°   1 turn = 360°

Acute Angles

Any angle that measures less than 90° is called an **acute** angle.

Obtuse Angles

Any angle that measures greater than 90° and less than 180° is called an **obtuse** angle.

Reflex Angles

Any angle that measures greater than 180° is called a **reflex** angle.

Negative Numbers

-25 -24 -23 -22 -21 -20 -19 -18 -17 -16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 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