# YEAR 6 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) |

## Roman numerals

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

## 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.

## 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 |

## 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° |

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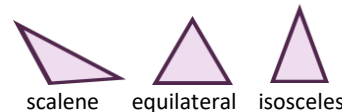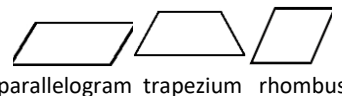
### AREA
is the amount of space inside a 2D shape usually measured in cm² or m².

**Area of a triangle**
= (base x height) ÷ 2
**Area of a parallelogram**
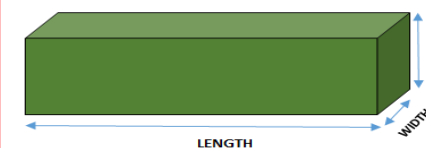= base x height
*(Height = perpendicular height)*

## 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

## 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)

## Shape vocabulary

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

horizontal line

parallel lines

vertical line

perpendicular lines (at right angles)

radius

diameter (= radius x 2)