

GEOMETRY & MEASURES

Quadrilaterals

Square

- 4 equal length sides.
- 2 pairs of opposite parallel sides.
- 4 right angles.



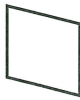
Rectangle

- 2 pairs of opposite parallel sides of equal length.
- 4 right angles.



Rhombus

- 4 equal length sides.
- 2 pairs of opposite parallel sides.
- 2 pairs of opposite equal angles.



Parallelogram

- 2 pairs of opposite parallel sides
- 2 pairs of opposite equal angles.



Trapezium

- 1 pair of opposite parallel sides.

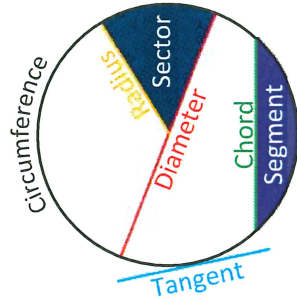


Kite

- 2 pairs of adjacent sides of equal length.
- 2 equal opposite angles.



Circles



Circumference = $\pi \times \text{diameter}$
 Area = $\pi \times \text{radius}^2$



GOSE MATHS MEMORY MAT

Important words, formulae and techniques you need to know!



Angles facts



Acute
Less than 90°



Obtuse
Greater than 90° less than 180°



Reflex
Greater than 180°



Right-angle
 90°



Angles on a straight line
Add up to 180°



Angles around a point
Add up to 360°



Angles in a triangle
Add up to 180°



Angles in a quadrilateral
Add up to 360°

Keywords

Perimeter	The distance around the outside of a shape.
Area	The amount of space contained within a 2D shape.
Volume	The amount of space contained within a 3D shape
Face	A flat surface on a 3D shape.
Edge	The line where 2 faces meet
Vertex	The point where two or more edges meet.

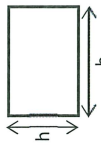
Pythagoras' Theorem

$$a^2 + b^2 = c^2$$

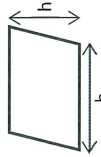


Area

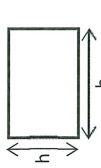
Rectangle
 $A = b \times h$



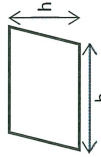
Parallelogram
 $A = b \times h$



Triangle
 $A = b \times h \div 2$



Trapezium
 $A = h \times (a + b) \div 2$



Trigonometry

Hypotenuse – opposite the right angle.

Opposite – opposite the angle.

Adjacent – between the angle and right angle.



$$\sin \theta = \frac{O}{H}$$

$$\cos \theta = \frac{A}{H}$$

$$\tan \theta = \frac{O}{A}$$

Triangles

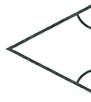
Equilateral

- All sides of equal length.
- All angles equal.



Isosceles

- 2 sides of equal length.
- 2 equal base angles.



Scalene

- NO equal sides.
- NO equal angles.



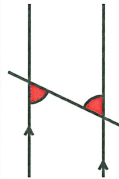
Right angled

- 1 right angle



Angles on parallel lines

Alternate



Corresponding



Vertically Opposite



STATISTICS

Keywords

Mode	The value that appears the most.
Median	The middle value in an ordered list.
Mean	Add up all the values, divide by how many there are.
Range	Highest value minus the lowest value

Converting Units

Length	1km	1000m
	1m	100cm
	1cm	10mm
Mass	1 ton	1000kg
	1kg	1000g
Volume	1L	1000ml
	1cl	10ml

1 mile = 1.6 kilometres

3D Shapes

	Cube		Cuboid		Cylinder
	(Triangular) Prism		Cone		Square-based Pyramid
	Triangular-based Pyramid		Sphere		Don't forget to smile, while you do maths!