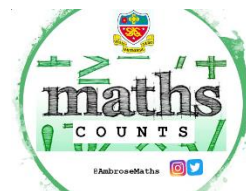





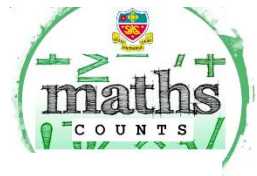
Knowledge Organiser



Lent Term 1 Set 2

Year 9

Topic	  			Independent Learning and homework tasks	
				MyMaths	CorbettMaths.com
Pythagoras' theorem, solving problems applying the theorem				Shape, Pythagoras, Pythagoras' Theorem	Video 257 - 8
Using similarity to find lengths of missing sides				Shape, Scale and Similarity	Videos 291 - 2
Using trigonometry to find missing sides of right-angled triangles				Shape, Trigonometry, Missing Sides	Videos 329 - 330
Using trigonometry to find missing angles				Shape, Trigonometry, Missing Angles	Video 331
Calculating equations of straight line graphs				Algebra, Graphs, $y=mx+c$	Video 189 -190, 194
Finding the equation between 2 points				Algebra, Graphs, Equ. of a line 3	Video 195
Understanding parallel & perpendicular lines				Algebra, Graphs, Gradient & Intercept	Video 196 - 7
Solving Simultaneous equations by elimination / substitution				Algebra, Equations - simultaneous, Sim Equations 1, 2 & 3	Video 295, 296
Solving Simultaneous equations graphically				Algebra, Equations - simultaneous, Solving Sim Eqs graphically	Video 297
Forming then Solving Simultaneous equations				Algebra, Equations - simultaneous, Sim Equations 1, 2 & 3	Video 295, 296

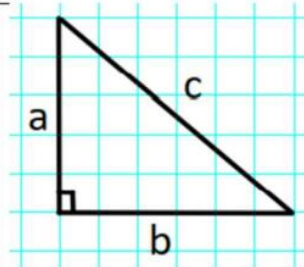


Lent Term 1 Knowledge

Pythagoras

In a right angled triangle the sides are in proportion in relation to each other.

You need to remember that the longest side in a right angled triangle does not touch the right angle.



The Pythagoras theorem states that the longest side squared is equal to the sum of the other two sides squared.

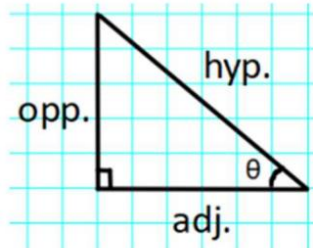
$$c^2 = a^2 + b^2$$

Sine, Cosine and Tangent

In a right angled triangle the sides are in proportion in relation to each other and the angles.

The sides are identified as:
Hypotenuse (hyp), the longest side.
Adjacent (adj), next to the angle
Opposite (opp), opposite the angle

The Sine (Sin) Cosine (Cos) and Tangent (Tan) relationships are related to the angle (θ) and cannot be used without it.



Sine

$$\sin \theta = \frac{\text{opp}}{\text{hyp}}$$

Cosine

$$\cos \theta = \frac{\text{adj}}{\text{hyp}}$$

Tangent

$$\tan \theta = \frac{\text{opp}}{\text{adj}}$$

Simultaneous equations

Sometimes a pair of equations are said to be simultaneous, this means they can both be written on a graph together. In many cases the lines they form will cross and this is the point where they are said to be simultaneous.

Straight lines

Straight lines have the form $y = ax + b$ where a and b are numbers. The line can also be expressed as $ax + by = c$



Scan for full list of Year 9 Maths facts

Maths Support Attend KS3 Maths Clinic every Friday lunch time for extra help and support.

Stretch and Challenge:

- 1) Practise UKMT Intermediate Maths Challenge Past papers on ukmt.org.uk
- 2) Set up an account on parallel.org.uk website, using your school email address and use teacher code "ha52kh"
- 3) Attend Puzzle Club one lunch time each week