



# Maths Higher

## KS4

### Year 10

Term	Content	Homework	Parent / Carer Support
<b>Sept</b> Autumn Term	Calculating. Calculate with roots and integer, negative and fractional indices. Calculate with surds. Limits of accuracy.	Weekly homework taSks set on Hegarty maths - students should watch the video in full and make notes in their homework book before attempting the quiz.	Check that students have watched the video prior to attempting the quiz. If they need further support there are 'Building blocks' on prerequisite skills at the bottom of the page.
<b>Sept/Oct</b>	Solving equations and inequalities 1  Find approximate solutions to equations using iteration.		
<b>Oct</b>	Solve 2 linear simultaneous equations.  Mathematical movement 1 Identify, describe and construct similar shapes.		Students will be assessed each half term on cumulative topics in a mini exam style.
<b>Dec</b>	Enlargement of shapes inc. fractional SF.  Investigating properties of shapes. Make links to similarity inc. trig. ratios and SF. Know exact values of $\sin\theta$ and $\cos\theta$ for $30^\circ$ , $45^\circ$ , $60^\circ$ and $90^\circ$ . Find angles and lengths in R.A triangles using trigonometry.		Cheat sheets can be produced and used in these assessments and should be no more than one side of A4.
<b>Feb</b> Spring Term	Algebraic proficiency. Simplify and manipulate further algebraic expressions Factorise quadratic expressions.  Proportional reasoning. Direct and inverse proportion. Interpret graphs that illustrate proportion.		Students can aid their revision by completing weekly Memri or Fix up 5 tasks on Hegarty maths.
<b>Mar</b>	Calculating space. Calculate surface area and volume of spheres, pyramids, cones and composite solids. Apply concepts of congruence and similarity including relationships between length, area and volumes in similar figures.		
<b>Apr</b>	Sequences: Deduce expressions to calculate the nth term of quadratic sequences. Geometric progressions.		
<b>Jun</b>	Algebraic proficiency - visualising. Plot and interpret graphs inc. exponential and Reciprocal. Calculate gradient and areas under graphs. Fractions, decimals and percentages:		
<b>Jun-July</b>	Exploring FDP. Convert between recurring decimals and fractions. Set up, solve and interpret answers to growth and decay problems, including with compound interest.  Solving equations and inequalities 2 Solve quadratic equations algebraically by factorising. Deduce and sketch key features of quadratic graphs through Completing the Square, Quadratic formula and factorisation.		

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## Year 10 continued

Term	Content	Homework
<b>Jun-July</b> Summer term	Understanding risk. Apply systematic listing strategies inc. use of product rule. Calculate and interpret conditional probabilities.  Analysing statistics. Understanding and analyse various sampling techniques Cumulative frequency graphs.  Mathematical movement 2 Add, subtract and multiply vectors. Proof if vectors are parallel  Angles Apply the circle theorems concerning angles, radii, tangents and chords.  Investigating properties of shapes Use trigonometry in 3D. Apply sine rule, cosine rule and find the area of a non-right angled triangle.  Algebraic Manipulation Rearrange expressions where the subject appears twice. Use function machines and notation to write and interpret composite and inverse functions.  Solving Algebraically 2  Solve simultaneous equations including 1 quadratic. Solve quadratic inequalities.  Communication and reasoning Perform algebraic and geometrical proof.	

## Year 11

Content	Homework	Parent / Carer Support
Over the course of year 11 each group will follow a bespoke scheme of work which is planned through <del>use of the</del> analysis of the class mock examinations, this will involve revision or extension as appropriate and key skills to access exam level questions.  Students will be assessed each half term on non calculator skills. At December and Easter they will sit full sets of exam papers as mock exams. Cheat sheets will not be allowed to be used in any year 11 assessments.	Weekly exam paper booklets with additional Hegarty tasks for the whole year.	Check students are organised on what day to bring their exam paper homeworks.  Are they using revision guides to help if they do not know a topic?  Students can aid their revision through completing regular Memri or Fix up 5 tasks on Hegarty.

Study Guides Available:  
[www.hegartymaths.com](http://www.hegartymaths.com)  
 CGP revision guide - £5.50

Exam Board: OCR