









Curriculum Content Map

Subject: Mathematics

Year group: 9H 10F

	TERM 1		TERM 2		TERM 3	
Unit title & description	Decimals Operations Primes, Factors and Multiples Expanding brackets	Factorising into a single brackets Area and Perimeter Fractions Percentages	Solving linear equations Linear graphs Frequency polygons Scatter graphs Averages1	Averages2 Stem and Leaf diagrams Angles	Circles Pythagoras' theorem Trigonometry1	Trigonometry2 Plans and Elevations Probability
Sequencing - Why is this taught and now?	These topics are revisited (as a spiral curriculum) building on from the learning in the previous year.				Circles is first taught here, with students having worked with angles in the previous topic. Continuing with the theme of working out lengths of shapes, Pythagoras' theorem and Trigonometry and taught her.	Plans and elevations allows students to continue looking at and working with shapes. The probability unit extends the learning from the previous year taught at this point.
Knowledge 	<ul style="list-style-type: none"> - To be able to use the four operations with decimal numbers. - To be able to round numbers to decimal places and significant figures. - To be able to approximate calculations using sensible estimates. - To know the effect of estimations on calculations. - To be able to convert decimals to fractions and percentages and vice versa. - To be able to order decimals, fractions and percentages. - To be able to recognise and find the reciprocals of numbers. - To be able to work out money and time calculations. - To be able to work out best buy calculations. - To be able to recognise and find multiples of numbers. - To be able to recognise prime numbers up to 100. 	<ul style="list-style-type: none"> -To be able to factorise out the highest numerical factor. - To be able to factorise out algebraic factors. - To be able to fully factorise into single brackets. - To be able to form expressions with perimeter. - To be able to form expressions with the area of squares and rectangles. - To be able to find the area of squares, rectangles, triangles, rhombi and parallelograms. - To be able to find the area of Trapezia. - To be able to find missing dimensions given an area. - To be able to find the area of compound shapes. - To be able to solve problems with fractions of amounts. - To be able to solve problems using four operations. 	<ul style="list-style-type: none"> - To be able to solve multi step equations. - To be able to solve linear equations with an unknown on both sides. - To be able to form and solve equations. - To be able to plot linear graphs from equations. - To be able to show a point lies on a line using an equation. - To be able to use a linear graph to find a value using one given value. - To be able to recognise the intercept and gradient in an equation. - To be able to find the gradient of a line. - To be able to recognise that parallel lines have the same gradient. - To be able to write the equation of a line. - To be able to plot and draw frequency polygons. - To be able to read and interpret frequency polygons. - To be able to plot scatter graphs. 	<ul style="list-style-type: none"> - To be able to find the mode and range using grouped and ungrouped frequency tables. - To be able to find the mean using grouped and ungrouped frequency tables. - To be able to find the median using grouped and ungrouped frequency tables. - To be able to interpret and complete stem and leaf diagrams including back to back. - To be able to find averages from a stem and leaf diagram. - To be able to name and know the properties of angles on parallel lines and vertically. - To be able to find missing angles on parallel lines. - To be able to find the sum of the interior angles of a polygon. 	<ul style="list-style-type: none"> - To be able to name parts of a circle. - To be able to find the circumference of a circle. - To be able to find the perimeter of half and quarter circles and compound shapes. - To be able to find the area of a circle. - To be able to find the area of half and quarter circles and compound shapes. - To be able to solve problems involving circles. - To be able to recall Pythagoras' theorem and label sides correctly. - To be able to calculate the longest side. - To be able to calculate a shorter side. - To be able to problem solve with Pythagoras' theorem. - To be able to label the sides of a right angled triangle. - To be able to find a missing side. 	<ul style="list-style-type: none"> - To be able to find a missing angle. - To recognise the exact values of sin, cos, tan, 30, 45, 60 and 90. - To be able to problem solve with trigonometry. - To be able to recognise vertices, edges and faces. - To be able to draw front, side and plan elevations. - To be able to draw 3d shapes from elevations. - To be able to mark probabilities on a line. - To be able to work out probabilities including of events not happening. - To be able to find estimates. - To be able to use and form sample space diagrams to find probabilities. - To be able to form and complete two way tables. - To be able to use two way tables to find probabilities. - To be able to understand and form Venn diagrams.

	<ul style="list-style-type: none">- To be able to write numbers in prime factor form.- To be able to find the highest common factors of a pair of numbers.- To be able to find the lowest common multiple of a pair of numbers.- To be able to expand single brackets.- To be able to expand multiple single brackets in an expression and collect like terms.- To be able to expand double brackets.-	<ul style="list-style-type: none">- To be able to compare simple and compound interest.- To be able to work out the original amount.- To be able to solve problems with reverse percentages.- To be able to solve problems involving percentages, fractions and decimals.	<ul style="list-style-type: none">- To be able to draw lines of best fit and interpret correlation.- To be able to estimate using the line of best fit.- To be able to find the mean, median, mode using raw data.- To understand the advantages and disadvantages of each average.- To be able to find the range using raw data.- To be able to solve problems involving averages and the range.	<ul style="list-style-type: none">- To be able to find an interior angle of regular and irregular polygons.- To be able to find an exterior angle of regular and irregular polygons.- To be able to find the number of sides of a polygon from stated interior or exterior.- To be able to solve complex multi step angle problems with algebra.- To be able to solve problems involving bearings		<ul style="list-style-type: none">- To be able to use Venn diagrams to find probabilities.- To be able to complete frequency bubbles.- To be able to use frequency bubbles to find probabilities.- To be able to form and complete tree diagrams.- To be able to use tree diagrams to find probabilities.
Skills		Use of numerical and conceptual knowledge. Applying and combining knowledge from different areas of mathematics. Use of mathematical equipment. Problem solving and reasoning; and interpreting questions.				
Retrieval practice Prior knowledge and skills that are revisited	Do nows are structured with questions, from last lesson, last week and last month.		A retrieval lesson is taught on each topic taking into account any gaps identified by topic tests, 1 or 2 weeks after completing teaching of the topic.			
Literacy including extended writing	Key words highlighted in lessons. Interpret information from worded problems and be able to apply relevant techniques based on key words. Guided reading task set for homework once a fortnight highlighting an interesting area of mathematics.					
Numeracy		All lessons are mathematics based and therefore require numeracy.				
Enrichment learning		Students will be given opportunities in lesson to develop soft skills such as teamwork, independence, initiative and responsibility.	Higher attainers to complete the parallel challenges.	UKMT maths challenge to be completed		
British values		British values are not taught in specific topics but in all lessons teacher expectations of students is that they show mutual respect, respect personal liberty, follow academy rules and therefore respect the rule of law and show respect towards each other and value each other's contributions.				

Character		<p>Students challenged to justify their answers and explain their reasoning.</p> <p>Students supported in developing the communication skills required.</p> <p>Students to be encouraged to learn from their mistakes through follow-up tasks.</p> <p>Students encouraged to take pride in their work.</p>		
Careers		<p>Explicit reference will be made throughout the course to careers related to the combination of topics studied. Examples include:</p> <ul style="list-style-type: none"> • Medicine, • Social sciences • Pharmacy • Engineering • Logistics • Finance 		
Assessment opportunities		AFL strategies embedded into each and every lesson via use of multiple choice questions and/or mini whiteboard work.	Unit tests to be completed at the end of teaching each individual topic highlighting depth of understanding and areas requiring further work.	Cumulative AP assessments completed and levelled for students to assess their progress.
Personalised challenge for all: SEND, HPA	Tasks suitable for students of different levels or prior attainment including challenge for higher attainers			