

Maths - Long Term Plans showing what each year group is currently doing. [More detailed plans

per year group showing the KS3 or KS4 journey are available if requested.] These are 'live' documents.

Year 7		HT1	HT2	HT3	HT4	HT5	HT6
Subject	Big Idea	<i>Why does one and one equal two?</i> Unit 1 Route 1 and 2 – Addition & Subtraction	<i>How can we link multiplication and division?</i> Unit 2 Route 1 and 2 – Multiply & Divide	<i>How can we solve problems where there are unknown variables?</i> Unit 3 Route 1 and 2 – Algebra	<i>The world is full of whole integer physical items, so why do we have half or a quarter of something?</i> Unit 4 Route 1 and 2 – Fractions	<i>When all shapes start and end at a fixed identical point they revolve around a circle, so do all shapes consist of the same number of degrees?</i> Unit 5 Route 1 and 2 – Geometry Reteach week on algebra <i>How can you have more than 100% of an amount?</i> Unit 6 - Percentages	<i>Two people own a company, if one person works twice as hard, is it fair to share the profits equally?</i> Unit 7 Route 1 and 2 - Ratio Reteach week on fractions Board game activity
	Assessment	Assessment 1		Assessment point 2		Assessment point 3	
	Wider Curriculum Links	Students are immediately shown the importance of hard work and the importance to revise and review topics both in and out of school. This is in part to prepare students for work life where weaknesses can only be turned to strengths through hard work and effort. There is a moral case that to improve society as a whole, first of all you work on yourself through hard work and effort		Unit 3 Some students will be introduced to simultaneous equations which can help to work out the price of individual items (some links to armed forces and how simultaneous equations are linked to warfare) Unit 4 Links to 'keeping safe' e.g. Factor 50 sun cream means that $\frac{1}{50}$ th of the damaging rays penetrate the skin. Looking at sale cost of items when they are reduced by a fraction		UKMT junior maths challenge allows students to experience a different style of thinking process to answer mathematical problems. In this maths challenge, students will be ranked against their peers from across the country in a competitive way	

Year 8		HT1	HT2	HT3	HT4	HT5	HT6
Subject	Big Idea	<i>Think of a better way to represent data without using numbers</i> Unit 8 Route 1 and 2 – Data Handling Re-teach geometry	<i>The phrase: 'the house always wins', what does this mean and why is it true?</i> Unit 9 Route 1 and 2 – Probability If you move a shape, rotate it and reflect it. Is it the same shape in the end? Unit 10 – Transformations	<i>To predict the future you must first find the pattern. Is this true?</i> Unit 11 Route 1 and 2 – Sequences Re-teach/consolidation week (Percentages) <i>Can two people draw identical triangles using only a pencil and a ruler?</i> Unit 12 Route 1 and 2 – Constructions	<i>Where does the symbol π come from and what does it mean?</i> Unit 13 Route 1 and 2 – Circles Reteach transformations	<i>How can we explain the similarities and differences between a cube and a triangular prism</i> Unit 14 Route 1 and 2 – 3D Shapes <i>A fireman stands 2 meters from the base of tree. The tree is 6m tall. How long does his ladder need to be to rescue the cat at the top of the tree?</i> Unit 15 Route 1 and 2 – Pythagoras And Trigonometry	Distance is measured through meters, kilometres, centimetres to name a few. Time is measured in seconds, minutes and hours. How is speed measured in? Why is it measured in that form? Unit 16 Route 1 and 2- Compound Units EOY activity
	Assessment	Assessment point 1		Assessment point 2		Assessment point 3	
	Wider Curriculum Links	The study of statistics links perfectly to a number of subjects where data is analysed. Seeing data has become a social norm and it is vital that students can see misinterpretations in data representation. This not only challenges students in testing their understanding of topics but also prepares them for life outside of school.	There are excellent opportunities within this unit to discuss the risks involved with gambling and the idea that the 'house' always wins.	Organisation Resilience Initiative	Architects draw plans when designing buildings to a scale factor. There are also links to art and technology. Links to Geography when looking at maps and scale drawings, links to DT for constructions.	UKMT junior maths challenge allows students to experience a different style of thinking process to answer mathematical problems. In this maths challenge, students will be ranked against their peers from across the country in a competitive way Mathematicians from different cultures and origin and their roots (Pythagoras)	

Year 9		HT1	HT2	HT3	HT4	HT5	HT6	
Subject	Big Idea	'Where did maths begin?' Unit 1 Route 1 – Calculations 'What's the reason for simplifying algebraic expressions' Unit 2 Route 1 - Expressions Consolidation- Sequences	'How can we find missing angles in any polygon' Unit 3 Route 1 –Angles & Polygons Consolidation- Probability	'Why do companies show data in charts and tables?' Unit 4 Route 1 – Handling Data 1 'Where do you see fractions, decimals and percentages in the real world?' Unit 5 Route 1 – FDP	Unit 5 Route 1 – FDP Consolidation- Circles 'How does a taxi driver determine how much to charge a customer?' Unit 6 Route 1 – Formulae & Functions	'If two shapes have the same perimeter and the same number of sides then they are congruent. Discuss' Unit 7 Route 1 – Working in 2D Consolidation – Volume & surface area	'When two items are correlated, does that mean one causes the other to occur?' Unit 8 Route 1- Handling data 2 Consolidation- Angles SMSC- Financial maths	
		'Where did maths begin?' Unit 1 Route 2 – Calculations 1 'What's the reason for simplifying algebraic expressions' Unit 2 Route 2 – Expressions Consolidation - Sequences	'How can we find missing angles in any polygon' Unit 3 Route 2 – Angles & Polygons	'Why do companies show data in charts and tables?' Unit 4 Route 2 – Handling Data Consolidation- Probability 'Where do you see fractions, decimals and percentages in the real world?' Unit 5 Route 2 – FDP	Consolidation- Bounds (limits of accuracy) 'How does a taxi driver determine how much to charge a customer?' Unit 6 Route 2 – Formulae Consolidation- Angles	'If two shapes have the same perimeter and the same number of sides then they are congruent. Discuss' Unit 7 Route 2 – Working with Shape	'How can people predict how many times an outcome will occur?' Unit 8 Route 2 – Probability 'How can we use circles to prove different facts?' Unit 9 Route 2- Circles Consolidation-Percentage SMSC- Financial maths	
	Assessment	Assessment point 1			Assessment point 2		Assessment point 3	
	Wider Curriculum Links	3.4 Knowing about the economic & business environment 9. Money and finance At the end of Year 9, students will undertake a week of lessons related to personal finance and mathematics. This will cover, in context, calculations related to pay, national insurance, PAYE taxation, pensions, student loan repayments and other contributions. This will contain up to date/accurate values so as to be completely applicable to real life in the current climate. Also covered will be typical household budget management including calculating mortgage payments, utility bill payments and other costs of living with specific reference to expenses students may not consider, such as; car tax/insurance, household insurance, council tax, mobile phone payments, sky TV/internet, vet bills, local service charges and unforeseen bills such as household repairs, car servicing and MOT/insurance excess payments, life insurance, TV licence. Students will be made aware of the pit falls of overdrafts and other easily accessible credit.						

Year 10		HT1	HT2	HT3	HT4	HT5	HT6
subject	Big Idea	'Why do we round numbers, would that not make results inaccurate?' Unit 9 Route 1- Estimating and rounding 'How can people predict how many times an outcome will occur?' Unit 10 Route 1- Probability Consolidation- Angles	<i>How can we solve problems where there are unknown variables?</i> Unit 11 Route 1- Equations and inequalities 'How can we use circles to prove different facts?' Unit 12 Route 1- Circles and constructions Consolidation- Frequency trees and scatter graphs 'How can we show that two things are related and use one to solve another' Unit 13 Route 1- Ratio, proportion and percentages	Unit 13 Route 1- Ratio, proportion and percentages 'Can all numbers be written as prime number and powers of primes?' Unit 14 Route 1- Factors, powers roots Consolidation- Working in 2D 'Explain the difference between surface area and volume. How can we use these to solve problems?' Unit 15 Route 1 – Working with 3D shapes	'How can scientists work precisely with large and small numbers?' Unit 16 Route 1- Calculations 2	'We can solve equations algebraically, but what about graphically? Can we see a solution without say x equals?' Unit 17 Route 1- Graphs Consolidation- Percentages 'How interrelated are the side lengths of a triangle to the angles?' Unit 18 Route 1- Geometry	Consolidation- Solving equations 'How can we see if one outcome affects the outcome of another?' Unit 19 Route 1- Combined events
		How can we find optimum points/ solutions to complex problems? Unit 10 Route 2- Equations and inequalities	Consolidation – Volume and surface area 'How can we show that two things are related and use one to solve another' Unit 11 Route 2- Ratio and proportion	Where high accuracy is required, we can't round numbers. So how can we perform calculations on irrational numbers? Unit 12 Route 2- Surds Consolidation – Circle theorems 'How interrelated are the side lengths of a triangle to the angles?' Unit 17 Route 2- Geometry	'We can solve equations algebraically, but what about graphically? Can we see a solution without say x equals?' Unit 13 Route 2- Graphs 1 There are three types of data: categorical, discrete, and continuous. How can we show continuous data? Unit 14 Route 2- Handling data 2	'How do microbiologists work with tiny numbers? How do astrophysicists work with such large numbers?' Unit 15 Route 2- Calculations and functions	'We have seen linear graphs and we have seen quadratic graphs. But how many types of graphs exist?' Unit 16 Route 2- Graphs 2 Consolidation – Surds Prep for assessment 6

Assessment	Assessment 1		Assessment 2		Assessment 3 (Mock for tiers)		
Wider Curriculum Links							

Year 11		HT1	HT2	HT3	HT4	HT5	HT6
Maths	Big Idea	'How can we identify if a pattern exists or if a list is purely random?' Unit 20 Route 1- Sequences 'How is speed related to distance and time? How is density related to volume and mass? How can we explain relationships between variables?' Unit 21 Route 1- Compound units	Revision for Mock	Individual follow up from mock	Individual follow up from mock	Individual follow up from mock	
		'How can we see if one outcome affects the outcome of another?'	Revision for Mock	Individual follow up from mock	Individual follow up from mock	Individual follow up from mock	

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