



Maths Curriculum Long Term Planning

YEAR 7		HT1	HT2	HT3	HT4	HT5	HT6
MATHS	Big Idea Number	Addition and subtraction How does place value help us understand the structure of numbers and why is this important when adding and subtracting? Multiplication and division How can we link the concepts of multiplication and division?	Order of operations Why does the order in which we perform operations matter?	Fractions How can fractions represent proportions and also be numbers?	Calculations with fractions Why do the denominators have to be the same when adding or subtracting fractions but not when multiplying or dividing?	Percentages Why and how are percentages commonly used in the real world?	Ratio and proportion What is the difference between ratio and proportion and in what contexts would you use one over the other?
	Big Idea Algebra		Introduction to algebra Why do we use algebra and how does its structure relate to numerical structures?	Equations What does it mean to solve an equation and how does this relate to the concept of balancing? Expanding and factorising brackets How are the concepts of expanding and factorising linked and why do we use either form in the real world?			
	Big Idea Shape and Space	Perimeter What is meant by perimeter and how can we measure/calculate this?	Area What is meant by area of a shape and how does this differ from perimeter?			Angles What is an angle? What are the angle facts that relate to straight lines and around points and how do these relate to interior angles of triangles and quadrilaterals?	
	Big Idea Statistics	Mode, median and range What is an average and what is it used for? How does this differ to a measure spread?	Mean What are the different averages and in what situation would you use each and why?				
	Application of Knowledge	Hinge point questioning every lesson MathsWatch homework every fortnight Feedback point through green sheet assessments Baseline assessment	Hinge point questioning every lesson MathsWatch homework every fortnight Feedback point through green sheet assessments Formal assessment on HT1-2 topics	Hinge point questioning every lesson MathsWatch homework every fortnight Feedback point through green sheet assessments	Hinge point questioning every lesson MathsWatch homework every fortnight Feedback point through green sheet assessments Formal assessment on HT1-4 topics	Hinge point questioning every lesson MathsWatch homework every fortnight Feedback point through green sheet assessments	Hinge point questioning every lesson MathsWatch homework every fortnight Feedback point through green sheet assessments Formal assessment on the whole years learning



	Wider Curriculum Links	History – Number systems Worded Multiplication / Division problems – Numeracy across the curriculum staff training Applications of Perimeter in Science / Design. Applications of processing data – Humanities / Science.	History of Number Systems / Algebra. Applications of Area in Science / Design. Applications of processing data – Humanities / Science.	Equality – English / Humanities / PSHE and Citizenship Applications of algebra – Computing / Science	Application of fractions – Technology / Science	Percentages in real life – PSHE and Citizenship (budgeting) / Humanities / Science Applications of angles to shape – Design / Art	Applications of ratio / proportion – Food / Science
		Extra Challenge Maths Club after school every Wednesday					



YEAR 8		HT1	HT2	HT3	HT4	HT5	HT6
MATHS	Big Idea Number	Sequences What is a sequence and how can we use words and algebra to define them?					
	Big Idea Algebra	Linear graphs How do we determine the equation of a straight line?					
	Big Idea Shape and Space	Circles What is pi and how does it relate to the circumference and area of a circle?	Surface area and volume What is the difference between surface area and volume, and how do we calculate these for prisms? Compound measures What are the two measures that define speed and density?	Pythagoras' theorem What is Pythagoras' theorem and when is it applicable? Trigonometry What is trigonometry and how does it link angles and sides of right-angled triangles?		Transformations What are the four transformations and what information is needed to perform each of these?	Scale drawings How are scale drawings used to represent the real world? Constructions What are the three minimum pieces of information required to construct a triangle?
	Big Idea Statistics			Representation of data Why do we represent data using graphs, charts and tables?	Pie charts When is it appropriate to use pie charts to represent data? Scatter graphs When is it appropriate to use scatter graphs to represent data?	Averages What is a frequency table and how do find averages from them? Probability What is probability? How do we use two-way tables, Venn diagrams and tree diagrams to find probabilities?	
	Application of Knowledge	Hinge point questioning every lesson MathsWatch homework every fortnight Feedback point through green sheet assessments	Hinge point questioning every lesson MathsWatch homework every fortnight Feedback point through green sheet assessments Formal assessment on HT1 topics	Hinge point questioning every lesson MathsWatch homework every fortnight Feedback point through green sheet assessments Formal assessment on HT1-3 topics	Hinge point questioning every lesson MathsWatch homework every fortnight Feedback point through green sheet assessments	Hinge point questioning every lesson MathsWatch homework every fortnight Feedback point through green sheet assessments	Hinge point questioning every lesson MathsWatch homework every fortnight Feedback point through green sheet assessments Formal assessment on the whole years learning
	Wider Curriculum Links	Sequences in nature. Interpreting straight line graphs in Science / Geography. Applications of linear graphs in real life – Currency exchange /Converting Units.	Applications of Volume / Surface Area in Science /Design. Applying SDT in Science / Technology.	Pythagoras / Trigonometry in real life. Ancient Greece - Pythagoras of Samos	Applications of representing data in other subjects – Geography / Science / Technology.	Transformations in Design. Applications of processing data – Humanities / Life and Society / Science.	Use of scale drawings in Technology / Construction.
		Extra Challenge Maths Club after school every Wednesday					



YEAR 9							
MATHS	Big Idea Number	Factors, multiples and fractions How do factors and multiples link to calculations with fractions?	Fractions, decimals and percentages How can fractions, decimals and percentages represent the same thing?	Approximations and estimation What effect does rounding have on subsequent calculations?	Ratio What are ratios used to represent?	Indices What are the laws of indices and where to they come from? Standard form What does it mean to write a number in standard form and why is it used?	Surds What is a surd and how can we simplify surds?
	Big Idea Algebra	Algebraic expressions What does it mean to simplify an expression? How are expanding and factorising linked? What does it mean to complete the square?	Equations What does it mean to solve an equation? How many solutions are there when solving equations and why?	Algebraic formulae What is the subject of an equation and why may we want to change it? How can we use formulae to model the real world?	Straight line graphs What are the characteristics of a straight-line graph and how does this representation link to its equation?	Functions and sequences How do we use function machines to evaluate functions, inverse functions and composite functions? What is meant by the nth term of a sequence?	Graphs of equations and functions How and why do different types of equations produce different graphs?
	Big Idea Shape and Space	Constructions and loci What does it mean to construct? What is loci and how does it relate to real world applications?	Properties of shapes and angles What do the exterior angles of a polygon sum to, and why? How can we use triangles to find the sum of the interior angles of any polygon?	Units of measurement What is meant by a compound measure? How and why do we convert different units of measure?	Area and perimeter What is a sector? How does the area and perimeter of a sector relate to the area and circumference of a circle?	Pythagoras' theorem What is Pythagoras' theorem and when is it applicable? How can it be extended to non-right-angled triangles and 3d problems?	
	Application of Knowledge	Hinge point questioning every lesson MathsWatch homework every week Feedback point through green sheet assessments Formal assessment on HT1 topics	Hinge point questioning every lesson MathsWatch homework every week Feedback point through green sheet assessments Formal assessment on HT1-2 topics	Hinge point questioning every lesson MathsWatch homework every week Feedback point through green sheet assessments	Hinge point questioning every lesson MathsWatch homework every week Feedback point through green sheet assessments	Hinge point questioning every lesson MathsWatch homework every week Feedback point through green sheet assessments	Hinge point questioning every lesson MathsWatch homework every week Feedback point through green sheet assessments Formal assessment on the whole years learning
	Wider Curriculum Links	Biology - biological rhythms and cycles. Musical scales and rhythms are based on mathematical relationships involving multiples. Using loci to establish vanishing points and create realistic three-dimensional	Adjusting recipe quantities and converting between measurement units using fractions and decimals. Solving equations in physics, e.g. Boyle's law. Understanding bearings and angles for accurate	Rounding molar masses and concentration values to significant figures that match the precision of the given data. Geography – population density	Approximating ratios of reactants and products in chemical reactions. Plotting heart rate, speed, or other metrics against time to monitor progress. Urban Planning – calculating the area and perimeter of land parcels and buildings is	Use of scientific/standard form in science to represent very large or small objects/concepts. Using sequences in algorithms and data structures, such as arrays and linked lists.	Analysing wave frequencies and wavelengths, which often involve surds. Graphs appear in numerous subjects such as science, geography, PE and history.



		effects on a two-dimensional plane.	map reading and navigation.		essential in urban planning for zoning, land use, and infrastructure development.	In engineering and design, Pythagoras' theorem is used in structural design, ensuring stability and strength in buildings and bridges.	
		Extra Challenge Maths Club after school every Wednesday					