

Year 8

Timing	Unit Title	Key Question	Knowledge	Assessing Understanding
Autumn	Approximation and Estimation	Can you round numbers to different degrees of accuracy?	• Rounding to decimal places • Rounding to significant figures • Estimation	How understanding is assessed • By applying the theory to a range of questions and increasingly more complex situations • Discussion in lessons, sample problems • Homework and tests Skills • Understanding of the concepts • Numerical skills • Algebraic skills • Problem solving skills Assessment Point information • Classroom tests relevant to topics studied
	Algebraic Expressions, Formulae	Can you use algebraic expressions and formulae to model real world problems?	• Use of letters in algebra • Evaluation and simplification of algebraic expressions and formulae • Algebraic expression in real world • Expanding and factorising	
	Solving Equations	Can you solve worded problems by forming and solving equations?	• Solving equations with brackets and fractions • Forming and solving different types of equations in one variable	
	Percentages	Can you use a decimal multiplier to solve percentage problems?	• Percentage increase and decrease • Repeated percentage changes • Calculate repeated percentage change • Reverse percentages	
	Ratio, Rate and Speed	Do you know how to use ratios to solve problems?	• Integer Ratios including simplifying ratios and sharing in ratios • All kinds of ratio problems • Scale plans and maps • Rate and speed	
	Angles in Quadrilaterals and Polygons	Do you know how to use interior and exterior angles of polygons to solve angle problems?	• Angles in quadrilaterals • Angles in polygons	
Spring	Pythagoras' Theorem	Can you use Pythagoras' Theorem to solve right-angled triangle problems?	• Using Pythagoras' theorem to find missing sides. • Pythagorean triples	How understanding is assessed • By applying the theory to a range of questions and

			• Problem Solving	increasingly more complex situations • Discussion in lessons, sample problems • Homework and tests • UKMT Junior Maths Challenge Skills • Understanding of the concepts • Numerical skills • Algebraic skills • Problem solving skills Assessment Point information • Classroom tests relevant to topics studied
	Area and Circumference of Circle	Can you use the circle formulae to solve problems?	• Find the circumference of a circle • Find the area of a circle • Problem solving with area and circumference of circle	
	Coordinates and Linear Functions	Can you understand the link between a linear equation and its graph?	• Cartesian coordinate system • Linear equations and their graphs • Gradients and the equations of straight lines.	
	Inequalities in One Variable	Can you solve problems with inequalities?	• Understand linear inequalities • Representing inequalities on a number line • Solve simple linear inequalities • Solve problems involving inequalities	
	Volume and Surface Area of Prisms and Cylinders	Do you know how to find the volume and surface area of different prisms and cylinders?	• Views and nets of 3D shapes • Volume and surface area of prisms • Volume and surface area of cylinders • Composite solids	
Summer	Laws of Indices	Can you apply the different laws of indices?	• State and apply the laws of indices (addition, subtraction and power law) • Simplify an expression involving indices. • State and apply the definitions of zero and negative indices.	

	Number Patterns	Can you find the general term of a sequence?	- Recognising number patterns and sequences - General term of a sequence - Solve problems involving number patterns and sequences	How understanding is assessed - By applying the theory to a range of questions and increasingly more complex situations - Discussion in lessons, sample problems - Homework and tests - UKMT Junior Maths Challenge Skills - Understanding of the concepts - Numerical skills - Algebraic skills - Problem solving skills Assessment Point information - Classroom tests relevant to topics studied
	Probability	Can you find the probability of single and combined events?	- Probability and single event - Expected number of outcomes - Experimental vs theoretical - Listing outcomes - Sample space diagrams - Probability of combined events	
	Statistical Graphs	Do you know how to use different graphs and charts to represent data?	- Line graphs - Pie charts - Use and misuse of statistical graphs - Scatter graphs	
	Transformation	Do you know how to enlarge a shape with different scale factors?	- Drawing enlargement (positive, negative and fractional) - Finding the centre of enlargement and describing enlargement - Drawing and describing combined transformations	
	Bearings	Do you understand how to use bearings?	- Drawing bearings - Problem solving with bearings	
	Mathematical Signs, Notations and Theorem Project	Research Project	- Research - Make a poster	